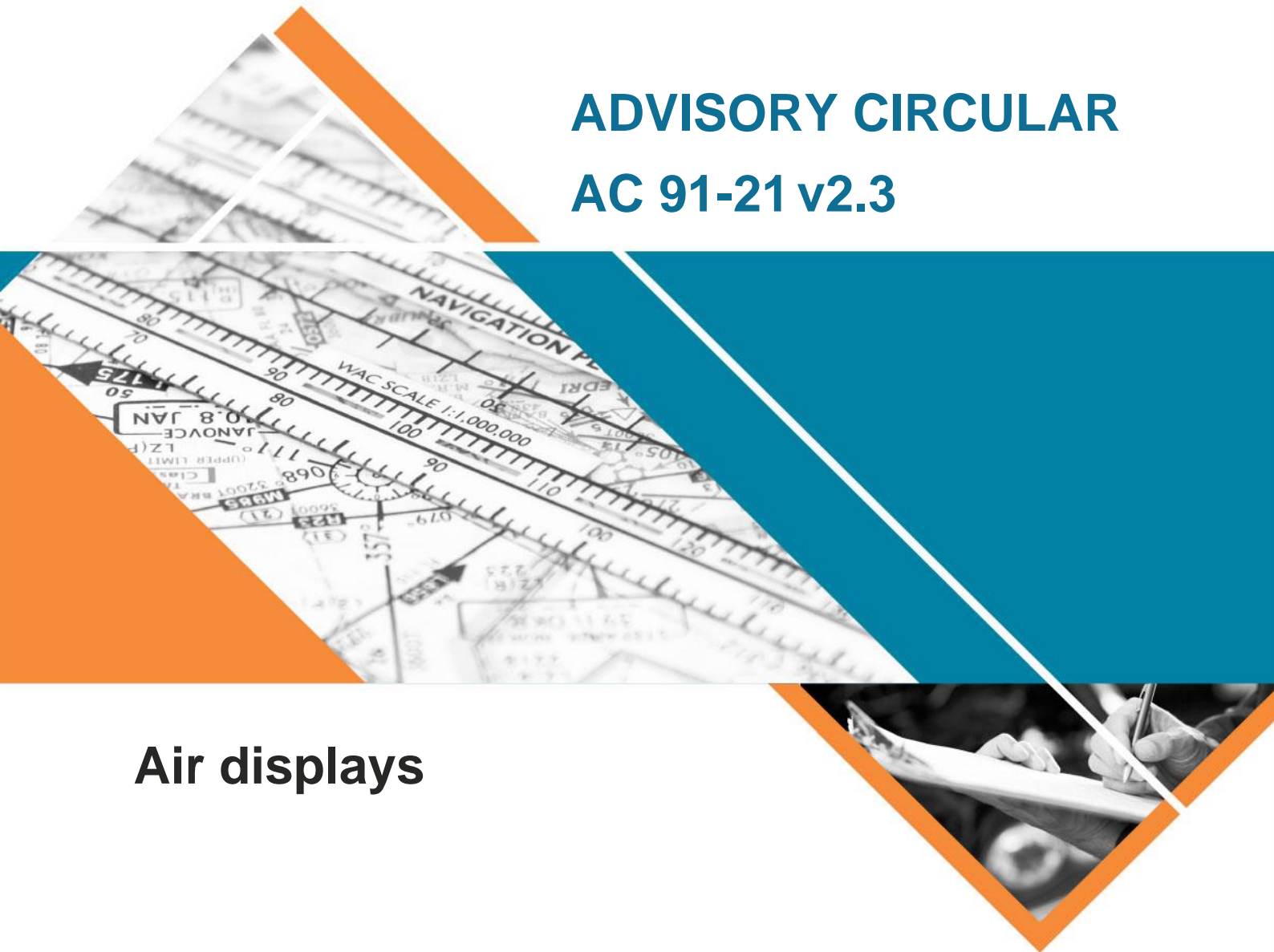




ADVISORY CIRCULAR

AC 91-21 v2.3



Air displays

Date	March 2025
File ref	D25/74814

Advisory circulars are intended to provide advice and guidance to illustrate a means, but not necessarily the only means, of complying with the Regulations, or to explain certain regulatory requirements by providing informative, interpretative and explanatory material.

Advisory circulars should always be read in conjunction with the relevant regulations.

Audience

This advisory circular (AC) applies to:

- air display organisers
- participants in air displays.

Purpose

This AC provides guidance on the application for an approval to conduct an air display, and the management of air displays, in accordance with the relevant provisions of Part 91 of *the Civil Aviation Safety Regulations 1998* (CASR). The intention is to provide background information and, where applicable, explain the safety aims of the legislation.

For further information

For further information or to provide feedback on this AC, visit CASA's [contact us](#) page.

Status

This version of the AC is approved by the National Manager, Flight Standards Branch.

Note: Changes made in the current version are annotated with change bars.

Version	Date	Details
v2.3	March 2025	Minor updates to CAO and exemption instrument identifiers.
v2.2	October 2024	The following changes have been made: <ul style="list-style-type: none"> • definitions • addition of a new 'nationally significant display' as a type of display in section 2.2 • supporting content for the new myCASA online digital application process, particularly in sections 3.2 and 3.9 • new information about fee waivers in section 6.4 • new information about air display practices in section 9.11 • guidance in section 10.13 in relation to the operation of tethered balloons and how they can, or cannot, fit within the air display definition.
v2.1	June 2023	Section 5.8 is changed to clarify the display pilot requirements for a balloon pilot.

Unless specified otherwise, all subregulations, regulations, Divisions, Subparts and Parts referenced in this AC are references to the *Civil Aviation Safety Regulations 1998* (CASR).

Version	Date	Details
v2.0	May 2023	The section numbering in Chapter 3 is changed due to inserting 2 new sections 3.4 and 3.8. New information on air display activities proposed to be conducted for the first time - see new section 3.4. New information on air display applicants being an individual or an organisational entity - see new section 3.8. Additional information provided for balloon display organisers (see sections 2.3, 5.9, 10.6 and 10.13).
v1.0	November 2022	Initial AC.

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1 Reference material

1.1 Acronyms

The acronyms and abbreviations used in this AC are listed in the table below.

Acronym	Description
AC	advisory circular
ASAO	Approved Self-administering Aviation Organisation
AGL	above ground level
AIP SUP	AIP Supplement
ALARP	as low as reasonably practicable
APF	Australian Parachuting Federation
ASA	Australian Skydiving Association
ATC	air traffic control
ATS	Air Traffic Services
AWAL	Australian Warbirds Association Ltd
CAO	Civil Aviation Order
CAR	<i>Civil Aviation Regulations 1988</i>
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulations 1998
CFIT	controlled flight into terrain
ERP	emergency response plan
ERSA	Enroute Supplement Australia
IMC	instrument meteorological conditions
MOS	Manual of Standards
NOTAM	notice to airmen
PIC	pilot in command
ReOC	remotely piloted aircraft operator certificate
VMC	visual meteorological conditions

1.2 Definitions

Terms that have specific meaning within this AC are defined in the table below. Where definitions from the civil aviation legislation have been reproduced for ease of reference, these are identified by 'grey shading'. Should there be a discrepancy between a definition given in this AC and the civil aviation legislation, the definition in the legislation prevails.

Term	Definition
aerobatic manoeuvres	for an aircraft, means manoeuvres of the aircraft that involve: <ol style="list-style-type: none"> bank angles that are greater than 60 degrees pitch angles that are greater than 45 degrees or are otherwise abnormal to the aircraft type; or abrupt changes of speed, direction, angle of bank or pitch.
air display	Organised flying performed before a public gathering, including the following: <ol style="list-style-type: none"> a contest an exhibition of aerobatic manoeuvres flying in formation other aircraft operations associated with the air display. <p>Note: See section 2.1 of this AC for a further breakdown.</p>
approval	an approval of an air display issued under regulation 91.045 of CASR in accordance with regulation 91.180 of CASR.
certificate of validation	means a certificate of validation granted under Subpart 61.C of CASR.
designated airspace	CASA may make a declaration designating an area of Australian Territory to be a prohibited area, restricted area, or danger area pursuant to the Airspace Regulations 2007.
flying in formation	Two or more aircraft are: <ol style="list-style-type: none"> Flying in formation if they: <ol style="list-style-type: none"> are operating as a single unit with regard to navigation, position reporting and control; and are so close to each other that any change in height, heading or airspeed of any aircraft used for station-keeping results in a need for one or more of the other aircraft to manoeuvre to maintain station or avoid a collision. Taken to be flying in formation: <ol style="list-style-type: none"> when the aircraft are changing station; and during join-up or breakaway.
free balloon	<ol style="list-style-type: none"> in Part 101—means a balloon that is not tethered; and otherwise—means a balloon that is intended for flight without being permanently tethered.
large display	See section 2.3 of this AC.
manned free balloon	<ol style="list-style-type: none"> is equipped to carry one or more persons; and is equipped with controls that enable the altitude of the balloon to be controlled.
medical certificate	means: <ol style="list-style-type: none"> a medical certificate issued under Subpart 67.C; or for the holder of a certificate of validation of an overseas flight crew

Term	Definition
	licence—the holder's overseas medical certificate.
medical exemption	<p>means:</p> <ol style="list-style-type: none"> for the conduct of a solo flight by a student pilot—an approval under regulation 61.040 to conduct the solo flight without holding a current medical certificate or recreational aviation medical practitioner's certificate; and for the exercise of the privileges of a flight crew licence or rating—an approval under regulation 61.040 to exercise the privileges of the licence or rating without holding a current medical certificate or recreational aviation medical practitioner's certificate.
nationally significant display	See section 2.3 of this AC.
populous area	<p>includes a city and a town.</p> <p>Note: Populous areas include a city and a town but the definition does not exclude other areas that fit under the Macquarie Dictionary definitions of 'populous' and 'area'. See the GM 91.265 entry in the Part 91 AMC/GM document for a comprehensive explanation of CASA's interpretation of the meaning of the term 'populous area'.</p>
public gathering	<p>An assembly of people at a place on the basis of a general public invitation to attend at that place, whether or not a charge is made for attendance.</p> <p>Note: CASA considers a general public invitation to be any form of advertising or promotion to the general public via public communication methods. This does not include invitation or promotion within likeminded organisations such as aeroclubs, sport aircraft associations etc.</p>
small display	See section 2.3 of this AC.
special certificate of airworthiness	<p>means:</p> <ol style="list-style-type: none"> a certificate of airworthiness issued for: <ol style="list-style-type: none"> an aircraft type certificated in the primary, intermediate or restricted category; or an aircraft in the limited category; or an amateur-built aircraft accepted under an ABAA; or a light sport aircraft covered by regulation 21.186; or a provisional certificate of airworthiness; or an experimental certificate.
standard certificate of airworthiness	<p>means a certificate of airworthiness issued for:</p> <ol style="list-style-type: none"> an aircraft type certificated in the normal, utility, acrobatic, commuter, or transport category; or a manned free balloon; or an aircraft in a special class of aircraft.
state aircraft	<p>means:</p> <ol style="list-style-type: none"> aircraft of any part of the Defence Force (including any aircraft that is commanded by a member of that Force in the course of duties as such a member); and aircraft used in the military, customs or police services of a foreign country.
STOP DISPLAY	The call made to cease either an individual item in an air display or to cancel the entire program.

Term	Definition
	Note: Other terms to stop a display such as 'Knock It Off' may be used provided that all participants understand the meaning.
Display Visitor	An aircraft arriving or departing from an approved air display which, while not performing at the air display, is associated with the air display by the nature of the attendance at the air display. This would be spectators or visitors who fly in to watch the air display.

1.3 References

Legislation

Legislation is available on the Federal Register of Legislation website <https://www.legislation.gov.au/>

Document	Title
The Act	Civil Aviation Act 1988 (the Act)
Airspace Regulations	Airspace Regulations 2007
Regulation 262AN of CAR	Limited category aircraft - approved organisations
Part 61 of CASR	Flight crew licensing
Part 91 of CASR	General operating and flight rules
Part 101 of CASR	Unmanned aircraft and rockets
Part 103 of CASR	Sport and recreation aircraft
Part 105 of CASR	Parachuting from aircraft
Part 119 of CASR	Australian air transport operators - certification and management
Part 121 of CASR	Australian air transport operations - larger aeroplanes
Part 131 of CASR	Balloons and hot air airships
Part 132 of CASR	Limited category aircraft
Part 133 of CASR	Australian air transport operations - rotorcraft
Part 135 of CASR	Australian air transport operations - smaller aeroplanes
Part 137 of CASR	Aerial application operations - other than rotorcraft
Part 138 of CASR	Aerial work operations
Part 141 of CASR	Recreational, private and commercial pilot flight training, other than certain integrated training courses
Part 142 of CASR	Integrated and multi-crew pilot flight training, contracted training and contracted checking
Part 149 of CASR	Approved self-administering aviation organisations
Civil Aviation Order (CAO) 95.8 Instrument 2024	Exemptions from CAR and CASR — Hang Gliders and Paragliders

Document	Title
CAO 95.10 Instrument 2024	Exemptions from CAR and CASR — Microlight Aeroplanes
CAO 95.12 Instrument 2024	Exemptions from CAR and CASR — Gyroplanes Not Exceeding 250 kg
CAO 95.12.1 Instrument 2024	Exemptions from CAR and CASR — LSA Gyroplanes and ASRA-compliant Gyroplanes
CAO 95.32 Instrument 2024	Exemptions from CAR and CASR — Powered Parachutes and Weight-shift-controlled Aeroplanes
CAO 95.4 Instrument 2024	Exemptions from CAR and CASR — Sailplanes and Towing Aircraft
CAO 95.55 Instrument 2024	Exemptions from CAR and CASR — Certain Light Sport Aircraft, Lightweight Aeroplanes and Ultralight Aeroplanes
CASA EX67/24	Part 91 of CASR – Supplementary Exemptions and Directions Instrument 2024 Note: This exemption replaced the expired exemption EX81/21
CASA EX07/24	Low-level Operations (Air Displays and Aerobatic Manoeuvres) Exemption 2024 Note: This exemption replaced the expired exemption EX08/21.
Part 91 MOS	General Operating and Flight Rules
Part 138 MOS	Aerial Work Operations

Note: This list is not exhaustive, other regulations or general exemptions may apply depending upon the application received by CASA.

Advisory material

CASA's advisory materials are available at <https://www.casa.gov.au/publications-and-resources/guidance-materials>

Document	Title
AC 1-01	Understanding the legislative framework
AC 1-02	Guide to the preparation of Expositions and Operations Manuals
AC 11-04	Approvals under CASR Parts 91, 103, 119, 121, 129, 131, 132, 133, 135, 138 and 149 (including MOS)
AC 61-18	Aerobatics (under development) Note: At the time of publication of this document, AC 61-18 is under development. Once published, it will be available from the CASA website.
Multi-Part AC 119-07 and AC 138-03	Management of change for aviation organisations
AC 131-02	Manned free balloons - operations

1.4 Forms

CASA's forms are available at <http://www.casa.gov.au/forms>.

Please note that it is strongly preferred that air display applications be submitted via the [myCASA online portal](#).

Form number	Title
	myCASA Air Display Application (Strongly recommended)
	(Paper form - not preferred) Application for Approval to Conduct an Air Display
Form 1284	Airspace Change Proposal
Form 1589	Airspace Risk Assessment Template
	Post Display Report

2 Overview for conducting air displays

2.1 Introduction

- 2.1.1 This AC should be read in conjunction with Part 91 of CASR and associated exemptions, which collectively constitute the regulatory requirements for the conduct of air displays. Other regulations may also be relevant and require consideration depending upon the application received. See section 2.2 of this AC for a statement of the specific rules governing air displays.
- 2.1.2 Air display organisation, administration and participation requires careful attention to ensure the safety of spectators and participants.
- 2.1.3 There are two defined terms that are fundamental to the air display rules - *air display* and *public gathering*. Readers are encouraged to review the meaning of these terms contained in section 1.2 of this AC.
- 2.1.4 Although not an aviation safety matter and therefore outside CASA's oversight regarding the issuance of an air display approval, the display organiser is recommended to also consider:
- providing temporary toilet facilities to cater for the large crowds who frequently attend air displays
 - providing rubbish bins in strategic areas for public use to prevent discarded rubbish being blown at spectators by passing aircraft or creating foreign object damage to aircraft or interfering with the ground operations of aircraft
 - liaising with local authorities regarding the local requirements for the provision of sanitary facilities.

2.2 Legislation

- 2.2.1 Subregulation 91.180(1) of CASR makes it an offence for a person to conduct¹ an air display without holding an approval from CASA. The air display event organiser, i.e., the person conducting the air display, is the person required to obtain and hold the approval. The display organiser is responsible for spectator and public safety as these matters relate to aviation safety, including third parties not associated with the event.

Note: Due to their unique interaction with the definition of *flight* in The Act, tethered balloons require the provision of specialised advice about whether their use constitutes an air display. See section 10.13 for this specialised advice.

- 2.2.2 Subregulation 91.180(2) of CASR makes it an offence for the operator and the pilot in command (PIC) of an aircraft to fly the aircraft in an air display if the person conducting the air display does not hold an approval from CASA.
- 2.2.3 Regulation 91.180 of CASR does not apply to air displays solely conducted by state aircraft due to section 4 of the Act and subregulations 3 (5) and (6) of CAR.
- 2.2.4 Elements of Part 61 of CASR may relate to pilots participating in air displays. Examples might be ratings or endorsements regarding aerobatics or low-level operations.

¹ The meaning of the verb *conduct* in this usage is a person organising an air display.

- 2.2.5 At times, CASA may issue exemptions or directions under Part 11 of CASR that relate to air displays².

2.3 Types of air displays

- 2.3.1 For the purposes of determining the depth of CASA's assessment of air display approval applications, and the depth of risk assessments developed by potential air display organisers, CASA classifies air displays as follows:

- Flypast only:
 - o One or more aircraft overflying a public gathering for a non-aerobatic demonstration, based on a general public invitation.
 - o Flypasts may include single aircraft or formations, towing a thing, or flights over populous areas or public gatherings below the minimum height specified in regulation 91.265 of CASR . (For example an ANZAC Day flypast over a cenotaph).
 - o There is no restriction on the number of aircraft in a flypast.
- Small Display:
 - o Single ship display. A single aircraft display conducted for an organised event where the general public have been specifically invited to attend. (For example, a display at a 'Day on the Green' concert or a party).
 - o A display with no more than 3 events per day. A small display can occur over multiple days provided the per day limit is not exceeded.
 - o Balloon event. An organised event with less than four balloons for the enjoyment of the public that have been invited to attend.

Note: A small display does not restrict the types of events that can be conducted such as aerobatics, handling, towing, wing walking etc.

- Large Display:
 - o Air display. An organised event with multiple acts of more than 3 per day, to demonstrate aircraft capability for the enjoyment of the general public that have been invited to attend.
 - o Fly-in. competition or cross-country event. A gathering of aircraft at an event or competition where the general public have been specifically invited to the event. (For example, a world aerobatic championships).
 - o Balloon event. An organised event with four or more balloons, for the enjoyment of the public that have been invited to attend (For example, the Canberra Balloon Spectacular).
- Nationally significant display:
 - o A very large and nationally significant air display, such as the Australian International Airshow - Avalon, Shell Harbour Air Show or Gold Coast Airshow.
 - o Due to the complexity of these very large airshows the applicant is strongly encouraged to contact CASA to arrange a pre-application meeting before submitting an application. Send an email to regservices@casa.gov.au detailing the need for a pre-application meeting. Applications received for nationally

² At the time of issuing v2.3 of this AC, related exemptions could be found in the main Part 91 exemption / direction instrument CASA EX67/24, and in an exemption affecting Part 61, CASA EX07/24.

significant displays without a pre-application meeting are more likely to incur processing delays.

2.4 Types of approvals for organisers

- 2.4.1 Most air display approvals are constrained to a single event but ongoing approvals for multiple events can also be issued. In either case, the scope and complexity of the risks, including mitigation activities, must be assessed and controlled by the applicant when applying for an approval.
- 2.4.2 Ongoing approvals usually increase the time CASA spends assessing and preparing the approval and this is likely to incur associated increased costs to the applicant. Additionally, ongoing approvals are usually of a longer duration which may require the approval instrument to be legislative instead of non-legislative.

2.5 Participation by military aircraft and foreign country state aircraft

- 2.5.1 The rules governing air displays are not applicable to aircraft operated by the ADF that are state aircraft, or aircraft used in the military, customs or police services of a foreign country. Such aircraft, when operating at an air display, will coordinate participation with the display organiser.
- 2.5.2 State aircraft of a foreign country also have multiple other approval and clearance requirements to meet before operations of any kind are permitted within Australian territory.
- 2.5.3 If military or foreign state aircraft are performing at the air display, the application will be delayed unless the organiser provides the name and contact details of the ADF liaison.

2.6 Airworthiness of aircraft

- 2.6.1 Organisers need to be cognisant that aircraft holding special certificates of airworthiness commonly have restrictions, or conditions, applied to the operation of the aircraft by the certificate. It is the responsibility of the display organiser to account for these restrictions and ensures the safety of spectators and participants from the perspective of the interaction between different aircraft,
- 2.6.2 Organisers are recommended to seek information from display participants whether their aircraft is subject to a special certificate of airworthiness, especially taking note of any conditions and how they might impact upon the participation of the aircraft in the display.
- 2.6.3 Organisers should be similarly aware of any aircraft that is subject to a special flight permit and any associated conditions on that permit. Normally, the only aircraft subject to a special flight permit that would be part of an air display would be where the permit was issued for the purpose of conducting a customer demonstration flight in the circumstances mentioned in paragraph 21.197(1)(e) of CASR.

2.7 Insurance

- 2.7.1 Although there is no requirement under the civil aviation legislation for minimum insurance cover for an air display, the display organiser and participants are strongly advised to seek professional guidance on liability aspects and to obtain advice from a reputable insurance adviser with aviation experience about the appropriate level of insurance coverage. This should be done at the earliest possible stage in planning.
- 2.7.2 It is important to note that the approval of an air display by CASA does not confer on the display organiser or any air display pilot, any rights as against the owner of any land over which the display may be conducted; or prejudice the rights and remedies which any person may have in common law in respect of any injury to persons or damage to property resulting directly or indirectly from the display.

Note: Persons or organisations intending to conduct an air display at a Commonwealth owned airfield will be required to indemnify the Commonwealth against any action or claim made against it arising from loss, damage, injury, or death which may be the consequence of staging the air display and may be required to take out public risk insurance.

2.8 CASA surveillance of air displays

- 2.8.1 CASA will undertake regular surveillance of air displays to ensure that the conduct of the display meets the conditions of the approval, and that safety and operational requirements are being met.
- 2.8.2 Where a CASA officer attends the display, they will ensure that the event activities comply with regulatory requirements. The CASA officer is not responsible for any pilot briefings, although they may attend the briefings to ensure all pertinent information is provided.
- 2.8.3 If a CASA officer observes a breach of safety regulations or becomes aware of a hazardous situation or activities outside the scope of the display approval, they will initiate action with the display organiser to correct the situation. If necessary, they may ask the organiser to suspend operations.

3 Applying for an air display approval

3.1 Fundamental information

- 3.1.1 All approvals issued under regulation 91.045 of CASR, which includes air display approvals issued for the purposes of regulation 91.180 of CASR, are authorisations as defined under Part 11 of CASR.
- 3.1.2 AC 11-04 contains guidance that applies to all approvals under CASR Part 91 (and many other CASR Parts), and which is not repeated in this AC.
- 3.1.3 It is strongly recommended that persons considering applying for an air display approval read AC 11-04.
- 3.1.4 Paragraphs 3.3.1 and 4.3.1 of AC 11-04 specify recommended submission timelines for approval applications. For many air displays, the recommended timeline is reduced from that specified in AC 11-04 as follows:
 - An application for an approval to conduct a large air display must be made at least 45 calendar days prior to the planned event. However, assessments of very complicated events involving multiple aircraft displays, large static displays, or combined events such as vintage car and motor bike clubs etc., may require significantly more than 45 calendar days.
 - Applications for a small air display or flypasts must be made 21 calendar days prior to the planned event.
- 3.1.5 CASA will endeavour to issue an air display approval to the display organiser 10 days before the date of the event listed on the application.
- 3.1.6 As outlined in AC 11-04, incomplete applications will not be assessed until all required supporting documentation has been submitted. CASA may give some flexibility with relation to the finalisation of the program of events as aircraft or pilots performing the display may change at late notice, hence a preliminary program is acceptable, but must be finalised prior to the issuance of an approval.

3.2 How do you apply?

- 3.2.1 Applications for approval to conduct an air display **are strongly preferred** to be made through the [myCASA online portal](#). The myCASA online portal is available from the 'Online services' menu on the CASA website homepage.
- 3.2.2 Applications may be made by an individual using the personal login or by an organisation using their organisations login.
- 3.2.3 If the myCASA application is completed using an organisation login, the applicant will be asked to nominate a responsible person for the air display who will be treated by CASA as the display organiser for the purposes of any approval.
- 3.2.4 The application must include:
 - Detailed Display Instructions or an Exposition, including a clearly specified program of events, addressing all relevant areas of this AC (Appendix A of this AC can be used as a guide for what to include).

- The name or title of the air display or event which will be used by CASA in the approval instrument.
- The location of the air display and include diagrams of the display lines and display area or box.
- A detailed program of events, which must include (see section 3.3 of this AC):
 - o timings and locations for each key activity for the air display such as briefings and start and end times for events at the display
 - o each event at the air display
 - o list of pilots or participants in the air display
 - o list of aircraft participating in the air display
 - o traffic management procedures
 - o parking and ground movement procedures
 - o the control of air traffic management (if necessary, including radio frequencies for air and ground control, arrival and departure procedures (these should be promulgated via NOTAM or AIP SUP) and any priorities for departures, such as slow aircraft with a long distance to travel or weather considerations.
- A copy of Permission of Aerodrome Operator, Owner or Landowner.
- A risk assessment scaled to the size of the display (Large or Small).
- An Emergency Response Plan (ERP) scaled and relevant to the size and activities conducted.

Note: The application will not be assessed unless all the required supporting documentation has been submitted at time of application.

3.2.5 In relation to an application for an ongoing approval, in order for CASA to be satisfied safety (see paragraph 4.1.2 of AC 11-04) can be met throughout the timeframe of the approval, the display organiser must develop and maintain an exposition that includes the following:

- the processes and procedures to be followed during air displays
- the responsibilities of key personnel
- a change management processes, including procedures for significant and non-significant changes (see Appendix H of this AC)
- a list of display locations
- a list of display activities (aerobatics, flypast formation etc.)
- a list of the display pilots to be used.
- a list of aircraft to be used.

Note: The following Advisory Circulars (ACs) provide guidance for developing an exposition:
 AC 1-02 - Guide to the preparation of Expositions and Operations Manuals
 AC 119-07 and 138-03 - Management of change for aviation organisations.

3.2.6 For an application for a cross-country flight that is also an air display, the display organiser must include the following additional details:

- The object or purpose of the event.
- The class of aircraft which will be participating.
- The track over which it is proposed that the event will be flown.
- The proposed stopping places and reporting points along the route.
- The estimated time of commencement and completion of the event.

- 3.2.7 An application for approval to conduct a pylon race, or a similar event, must contain details of the area over which the event is to be staged. The area must be:
- suitable for low flying
 - such that the event would not constitute a nuisance to local authorities or residents
 - such that the activity will not endanger persons or property on the ground or water.

3.3 Program of events

- 3.3.1 The program of events is requested to be clearly identified in the application documentation as it will be linked to any approval instrument issued for an event.
- 3.3.2 An air display is not likely to run smoothly or retain the interest of spectators unless it has been carefully planned and executed.
- 3.3.3 The display coordinator must be familiar with each pilot's display routine and ensure that it complies with the risk assessment and the air display approval. Full display routines and any bad-weather alternatives should be agreed upon prior to the program being issued.
- 3.3.4 A sample display program has been included in Appendix B of this AC, demonstrating the minimum information that should be included in the display program.
- 3.3.5 The composition of a display might include any of the following activities:
- all civilian aeroplanes
 - all Australian Defence Force (ADF) aircraft (noting CASA has no jurisdiction over state aircraft)
 - ex-military piston/jet aircraft or rotor wing aircraft
 - gliders / motor gliders
 - balloons - tethered or free
 - parachutists
 - paragliders - free or powered
 - trikes and hang gliders
 - sport and recreational aircraft
 - gyroplanes
 - model aircraft displays
 - drone displays including commercial drone operations
 - helicopters
 - kites.
- 3.3.6 The combination of any of the above activities requires careful consideration and coordination in terms of facilities, location, program timing, airspace requirements and duration of the display.
- 3.3.7 When planning the program, the display coordinator should consider the sequence of events to ensure that a minimum amount of time is left free between display items. Five minutes is normally adequate for any single display item.
- 3.3.8 Air display pilots form part of the display and as such are informed participants relating to the display.

- 3.3.9 To adequately manage and address risks, positioning of display aircraft can occur on the ground or in the air, and either after or before the next display, if it has been pre-arranged between each of the participants, the display coordinator, and the display organiser.
- 3.3.10 It is a condition of the air display approval that, once approved, the program of events is not to be changed except as follows:
- events may be cancelled
 - the order and timing of individual events may be changed if all of the following are satisfied:
 - o the change does not affect the end time of the approved air display as mentioned in the application
 - o the display organiser has briefed all participants affected by the change and the participants have been given the opportunity to identify safety risks from the change
 - o the display organiser advises CASA, in writing and having regard to the views of participants, that the change will not have an adverse impact on safety.
- 3.3.11 The program of events may be changed with CASA's prior written approval.

Note: The limitation for changing an approval means that CASA approval is required for new events and the use of different pilots and/or aircraft to those mentioned in the application.

3.4 Events that organisers are planning for the first time

- 3.4.1 Air Display Organisers routinely seek to improve existing displays or develop new displays. Regulation 91.180 of CASR, which requires display organisers to hold an approval to conduct an air display, is an example of an outcome-based, or performance-based, regulation³.
- 3.4.2 For outcome-based rules, CASA usually provides guidance to affected persons on matters that should be considered when determining how to satisfy the rule. For a limited number of rules, CASA provides an Acceptable Means of Compliance (AMC) that has been pre-determined as being an appropriate way of complying with the rule. AMCs provide straightforward and positive methods for satisfying CASA but are not binding on those industry participants who wish to put forward alternative methods of compliance, thus allowing for innovation and improvement to occur naturally.
- 3.4.3 For outcome-based rules that require the issuance of an approval, like regulation 91.180 for air displays, the rules in Part 11 of CASR about 'authorisations' mean that the approval can only be granted by CASA if the applicable test of safety mentioned in regulation 11.055 of CASR is met. AC 11-04 provides central guidance on CASA's interpretations of these tests of safety.
- 3.4.4 For an air display approval, CASA's test of safety is that the display will result in the preservation of a level of aviation safety that is at least acceptable given the circumstances. CASA acknowledges that the level of risk for some air displays, for the persons onboard the aircraft, is elevated compared to more routine private operations.

³ See section 9.1 of AC 1-01 for an explanation of prescriptive rules versus outcome-based rules.

However, air displays are to be planned to not increase the level of risk for uninvolved parties, such as spectators, compared to routine private operations.

- 3.4.5 Noting the relative lack of prescriptive rules regarding the conduct of air displays, more safety responsibility is devolved to air display organisers and they can use systems, methods and procedures most appropriate to them to meet safety outcomes.
- 3.4.6 When CASA assesses a new, or significantly varied from previous common practice, air display activity, CASA will adopt a regulatory approach based on assessing the level of risk associated with defined aviation operations that is discussed throughout this AC. Also refer to AC 11-04 *Approvals under certain CASR Parts* and AC 1-01 *Understanding the legislative framework*.
- 3.4.7 Depending on the risks involved in some planned programs of events, these operations may require approvals other than air displays approvals from CASA and be subject to general or particular operational conditions or limitations.
- 3.4.8 In establishing a risk-based hierarchy of priorities, CASA, in the first instance, bases its assessment on the estimated degree of risk to the public considering the following factors:
- the adequacy and efficacy of proposed risk controls provided by the air display organiser to CASA
 - safety expectations (public perception/concern) and acceptance of risk
 - potential for multiple fatalities
 - aircraft occupant characteristics
 - potential effects on other airspace users and people and property on the ground.
- 3.4.9 Considerable research and investigation is often required before CASA can make a decision to grant, or refuse to grant, an approval for a new or significantly varied air display. Air display organisers are therefore recommended to apply for the air display approval at least 3 months in advance of the proposed air display date to enable CASA's proper assessment of the risks associated with these activities. Examples of such events could be night pyrotechnics, night aerobatics, car to plane transfers, flying under a thing, ribbon cutting, etc⁴.
- 3.4.10 Under regulations 11.035 to 11.050 of CASR (note that regulation 11.045 does not apply to an air display approval), CASA may ask an applicant intending to conduct a new or significantly varied air display (this also applies to any application for approval but is included here as it is more pertinent to applications that include new or significantly varied air display elements) for the first time to:
- provide further information
 - provide a copy of specific documents
 - undertake a test or tests of competence
 - come to a CASA office to be interviewed
 - carry out a demonstration.

⁴ These examples were contemporary as at the issuance of this AC. As part of regular document review processes, CASA will review whether any of these activities have transitioned out of being examples of new or significantly varied activities.

- 3.4.11 In processing each application, CASA will consider all the information provided as well as anything in its records concerning the applicant. If there is anything adverse to the applicant in its records which CASA intends to take into account, CASA will inform the applicant in writing that it intends to take this information into account and will invite the applicant to make a written submission about the matter within a reasonable period. If the applicant responds with a written submission within that time, then CASA will take the response into consideration. These matters are laid out in regulation 11.050 of CASR.

Note: This also applies to all applications for approval.

- 3.4.12 If the applicant previously held an approval that was revoked, CASA will take the reasons for the revocation into account as well as the evidence that the applicant submits about their capacity to carry out the functions necessary to gain the approval. This is also laid out in regulation 11.050 of CASR.

Note: This also applies to all applications for approval.

- 3.4.13 CASA will analyse the safety assessment to verify that:

- appropriate coordination has been performed with the relevant stakeholders
- risks have been properly identified and assessed, based on documented arguments such as physical or human factors studies, analysis of previous accidents and incidents etc.
- proposed mitigation measures adequately address the risks
- timeframes for planned implementation of the mitigation measures are achievable.

- 3.4.14 If some risks have been underestimated, or have not been identified, further coordination may be required to reach an agreement on safety acceptance. If no agreement can be reached, a statement with reasons for refusing to grant the approval will be provided to the applicant.

3.5 Risk assessment

- 3.5.1 Risk to people and property is present at any aviation event. As part of planning an air display it is necessary to identify, evaluate and remove (or minimise) hazards as far as practicable. The responsibility of implementing and monitoring risk removal and risk mitigating steps falls to the display organiser and display coordinator. Risk assessment for an aviation event is subjective and based on the personal experience and qualifications of the assessor.
- 3.5.2 Risk Assessments are scalable the size or complexity of an air display. For example, a Flypast, which is classified as a small display, will not require the same type of risk assessment as a large display.
- 3.5.3 A risk assessment must be conducted for the proposed air display and include the proposed site of the display. This risk assessment is required to identify and mitigate all known or anticipated hazards and threats associated with the display to ensure a safe environment for the public and uninvolved third-party persons not directly associated with the display.
- 3.5.4 The display lines listed in this AC should be viewed as being minimums for a display being parallel to, or away from (but not towards), the crowd line. If the display lines are

closer than these minimums, then the risk assessment needs to show how these risks will be mitigated.

3.5.5 Risk assessment guidelines and examples are found in Appendix C of this AC.

3.6 Emergency response plan

3.6.1 An ERP is an important requirement for any proposed display. It provides procedures to be followed in the event of an accident or incident. An ERP for an air display must identify at least the following:

- the emergency services on site and their location
- details of who is responsible for, and how they will ensure, the details and locations of incidents or accidents are conveyed to emergency services
- the types of occurrences that may require the cancellation of the event
- the emergency services ingress and egress points to the display site
- details of any medical services on site
- who has responsibility and control of any accident or incident
- the details of any emergency control (command) centre on site.
- Any consultation with or link to an existing ERP that is already in place for example at an aerodrome.

3.6.2 A guide for developing an ERP, along with a sample ERP that can be used as a template, can be found at Appendix F of this AC.

3.7 Spectators flying in and out of the display

3.7.1 The definition of air display in the CASR dictionary requires the display organiser to consider other aircraft operations associated with the air display. Therefore, aircraft arriving or departing for the purposes of visiting or spectating the air display must be managed as part of the air display.

3.7.2 The display planning and sequencing must include details of open arrival and departure times for spectator aircraft. To be clear, these aircraft arrival and departures are not part of the air display event but must still be managed.

3.7.3 The display organiser must ensure that the advertisement to the general public for the display details the times of arrival and departure for spectator aircraft.

Note: CASA does not expect the PIC of a spectator aircraft to attend the air display briefings.

CAUTION: In CASA's experience, some of the worst airmanship and disregard for operational procedures have been witnessed at the arrival and (particularly) the departure from an air display. While the display organiser will not be held responsible for the conduct of non-display pilots outside of an air display, they must consider and manage this part of an air display.

3.8 Types of air display applicants

- 3.8.1 For the purposes of paragraph 91.180(1)(a) of CASR, the display organiser will be the person who 'conducts' the air display. An air display Instrument of Approval is issued to the person who conducts the air display.
- 3.8.2 Legally an organisation or entity is also a person and therefore an organisation can apply to conduct the display.
- 3.8.3 Therefore, there are two broad types of applicants for an air display:
- An entity (for example a Pty Ltd company) is the organiser listed in the display application with an individual also listed who will carry out the responsibilities of the display organiser in accordance with the CASA approved program of events. In this case the entity will be listed as the organiser on the Instrument of Approval and by virtue of the application listing the name of the approved individual who will carry out the display organiser responsibilities, it is this listed person who is responsible for the event on behalf of the entity.
 - An individual is the organiser listed in the application who will carry out the display organiser activities in accordance with the application.

3.9 What is the process of assessment?

- 3.9.1 Before the online application can be submitted an estimate must be paid. This payment is made as part of the online application process. Fees are scheduled in accordance with the CASA cost recovery instructions. Assessment of air display applications cannot commence until the fee is either paid or waived.
- 3.9.2 Fee waivers may be available under certain special circumstances such as public interest and/or charitable events. Generally, to be eligible for a fee waiver the event must be of significant national importance such as ANZAC Day/Remembrance Day or be a major charity event.
- 3.9.3 Applicants will need to provide evidence of the supporting charity or, if applying for a fee waiver for other events, the reasons why CASA should approve a fee waiver.
- 3.9.4 CASA applies fee waivers in accordance with its financial instructions which involve assessment and approval by senior managers. The assessment of the application will not commence until the fee waiver is approved. It is recommended to apply with significant lead time if requesting a fee waiver.
- 3.9.5 If fee waiver is denied the applicant will need to commence a new application.
- 3.9.6 The following events have been granted a fee waiver until 2028⁵:
- ANZAC Day flypast events
 - Remembrance Day flypast events.

Note: An air display application must still be submitted for an air display related to ANZAC Day or Remembrance Day.

⁵ The information regarding which events have been granted long duration fee waivers was current at the time of publishing v2.3 of this AC.

- 3.9.7 An assigned CASA officer will assess the application and supporting documents in accordance with the requirements of Subparts 11.B and 11.BA of CASR. The assigned officer will contact the display organiser if further information or clarification is required.
- 3.9.8 A general description of the matters considered by CASA before deciding to grant or not grant an approval is provided in section 4 of AC 11-04. Later sections of this AC (i.e., AC 91-21) outline minimum standards for air displays that CASA considers essential to meeting the test of safety for an approval (see paragraph 4.1.2 of AC 11-04).
- 3.9.9 It is important to note, the finalised Display Program must be confirmed and submitted to CASA as early as possible to allow approval to be granted in a timely fashion. Last minute changes of aircraft and display pilots are to be avoided where possible.
- 3.9.10 When assessing the suitability of the display organiser, CASA will consider the following in relation to their history of compliance and competency:
- has the applicant had any previous applications to CASA rejected?
 - has the applicant previously been interviewed about a matter of concern by CASA or any other aviation regulator?
 - has the applicant ever been sanctioned for providing false or misleading information?
 - has the applicant had an aviation licence revoked or suspended?
 - has the applicant been convicted of any CASA regulated offences?
 - does the applicant have a history or are they currently experiencing any physical or mental health problems?
 - does the applicant have a history of, or are they currently experiencing, any serious behavioural problems, such as drug or alcohol dependency, which may interfere with their ability to perform the role effectively?
- 3.9.11 Once the application and assessment process have been satisfied, CASA will issue an approval to the applicant to conduct the air display. CASA may place additional conditions on the approval that must be complied with by the air display organiser. CASA will also issue a NOTAM advising the following (as applicable):
- airspace status, air traffic control (ATC) services and, if provided, designated airspace (danger or restricted areas) or other arrangements
 - vertical and lateral dimension of the display airspace
 - time period of airspace promulgated
 - any special radio frequency arrangements
 - any other operational requirements.
- Note:** For larger displays an AIP SUP may be supplied to provide additional information for pilots.
- 3.9.12 The online application available on the [myCASA portal](#) details what the applicant needs to provide to CASA for an assessment of the types of air displays shown in section 2.3 of this AC.
- 3.9.13 An approval will include details of the applicant and the display organiser's name, approved date and duration, Emergency Response Plan (ERP), location, program of events, and any other conditions that pertain to the approved air display.

- 3.9.14 It is important to note that the person who conducts the air display is responsible for ensuring that relevant legislative requirements are met, including any conditions specified in the approval instrument.

4 Display procedures - general

- 4.1.1 As previously discussed, in order for an approval to be granted, CASA must be satisfied that the required test of safety (see paragraph 4.1.2 of AC 11-04) can be met. Over time, CASA has analysed and developed a set of standard safety conditions for air displays that provide predictability to the industry and have demonstrably resulted in the preservation of an acceptable level of safety.
- 4.1.2 This chapter of the AC sets out these standard safety conditions, which should be included in the display instructions, exposition or other document containing processes and procedures for the air display.
- 4.1.3 Air displays must be conducted in accordance with the following general conditions (outside of basics like adhering to the location of the air display etc):
- the public are not permitted to enter any area where aircraft engines are operating
 - spectator areas must not be situated in the approach or take-off areas of an aerodrome
 - emergency rescue and first aid facilities must be provided on a scale commensurate with the scale and nature of the display
 - passengers must not be carried for hire or reward during any part of the air display except where specifically approved as part of the program of events
 - the program of events must not include flying events likely to cause diversion of pilot attention from the aircraft control or which feature disorganised flight by aircraft in close proximity
 - the air display must be conducted in visual meteorological conditions (VMC), except for a cross-country event which may be conducted under instrument flight rules.

5 Display procedures - Event personnel and planning

- 5.1.1 As previously discussed, in order for an approval to be granted, CASA must be satisfied that the required test of safety (see paragraph 4.1.2 of AC 11-04) can be met. Over time, CASA has analysed and developed a set of standard safety conditions for air displays that provide predictability to the industry and have demonstrably resulted in the preservation of an acceptable level of safety.
- 5.1.2 This chapter of the AC sets out these standard safety conditions, which should be included in the display instructions, exposition or other document containing processes and procedures for the air display.

5.2 Display organiser

- 5.2.1 The display organiser must have appropriate experience commensurate with the size and complexity of the event. Details of relevant experience should be included with the display application. Responsibility for certain aspects of the display, such as site survey, designated airspace, air traffic services (ATS), provision of emergency services and conduct of flying activities and pyrotechnics of ground-based effects, should only be allocated to people with the appropriate experience and, if applicable, licences.
- 5.2.2 The display organiser is responsible for, but not limited, to the following:
- event personnel (this can be in the form of a roster)
 - the written appointment of a display coordinator (this can be in the form of a roster)
 - the written appointment of a flying display committee (this can be in the form of a roster)
 - the written appointment of a ground control coordinator
 - the appointment of officials
 - flight crew
 - the event site and display management
 - conducting and compiling a risk assessment
 - where designated airspace is identified as a risk treatment, compiling and submitting to CASA the Airspace Change Proposal form and Airspace Risk Assessment Template
 - site suitability
 - marking of the display axis and pyrotechnical ground-based effects
 - aircraft parking areas and if applicable underwing camping
 - public access areas
 - the siting and control of public enclosures
 - car parking and pedestrian safety
 - spectator safety
 - documentation checks and display insurance confirmation
 - pilots' display programs (both normal and weather-restricted programs)
 - passenger or transport flights (adventure flights, trial introductory or joy flights) in accordance with relevant approvals under Parts 121, 131, 132, 133, 135, 141 or 142 of CASR
 - in consultation with the display coordinator and ground control coordinator, the development and implementation the ERP

- the safety of spectators and third parties not associated with the event (this is one of the most important responsibilities placed on the display organiser for which personal liability may well be a significant factor).

Note: The responsibility for ensuring that an aircraft is operated in accordance with its certificate of airworthiness, permit to fly and air display approval rests with the PIC. This does not absolve the display organiser from the responsibility to take such action as is necessary should a display aircraft deviate from the bounds of any approval or operate in an unsafe manner.

- 5.2.3 The list above is not exhaustive and only serves as a guide. Reasonable steps must be taken in the planning and execution of the event to provide safe outcomes. Each of the items in the list above are dealt with in detail in the subsequent chapters of this AC.

5.3 Display coordinator

- 5.3.1 The display coordinator is appointed by, and responsible to, the display organiser. The display coordinator controls the actual flying program and assumes overall responsibility for the airborne component and safety of the display event.
- 5.3.2 The documentation submitted to CASA for an air display approval must include the details of the display coordinator.
- 5.3.3 For small displays the display coordinator may be the same person as the display organiser (see section 5.4 of this AC).
- 5.3.4 The display coordinator is responsible to the display organiser for:
- flying discipline and coordination of acts within the display for the safe and effective execution of the event
 - compiling, approval and modification of individual flying routines in the interests of safety, commensurate with pilot experience and qualifications
 - the overall flying program and sequence of events
 - cancelling or modifying the flying program in the event of unsuitable weather or other such conditions, including aircraft unserviceability, accident / incident and display cancellation procedures (such as using the term STOP DISPLAY).
 - confirming minimum heights and maximum speeds during display
 - stipulating weather minima criteria
 - marking and coordinating pyrotechnics and other ground special effects
 - pre-display briefing material and facilities
 - conducting pre-display briefing.

5.4 Display organiser and display coordinator as the same person

- 5.4.1 A display organiser can also assume the role of the display coordinator if they meet the requirements detailed in section 5.2 of this AC. For a large display, a safety case (risk assessment) must be developed to show how a single person can manage both roles and achieve an equivalent level of safety.
- 5.4.2 In the case where a single person holds both the display organiser and display coordinator positions, the person appointed should have considerable and verifiable aviation experience.

Note: Details of relevant experience should be attached to the air display application. CASA may conduct an assessment, if required, to assess competency to hold the position as display coordinator.

5.5 Display committee

- 5.5.1 At a larger display, in addition to the display coordinator, the display organiser may appoint a small group of experienced people to act as a display committee. Common practice is that the display committee is delegated tasks by the display organiser, based on the areas of expertise and experience of its members. Such appointments must be made in writing.

5.6 Ground control coordinator

- 5.6.1 The ground control coordinator is an essential component of a fly-in, competition or air display. The ground control coordinator should have a considerable and verifiable aviation background, commensurate with the planned event, that enables them to identify aviation ground-based hazards and their impact on persons and property during the event and are responsible to the Display Organiser.
- 5.6.2 The ground control coordinator is responsible for:
- crowd control barriers and public safety
 - aircraft parking and participant safety
 - emergency services access
 - disabled aircraft recovery
 - aircraft marshalling
 - refuelling arrangements and safety
 - ground marshaller and official's safety briefing
 - emergency services briefing
 - Enacting ground component of ERP, if required.

5.7 Officials

- 5.7.1 The display organiser should nominate and roster experienced staff as officials to:
- supervise the marshalling and parking of aircraft or cars
 - operate any public address system, under normal or emergency situations
 - control messengers and any other staff deemed necessary by the display organiser
 - provide crowd control and aircraft safety related duties.
- 5.7.2 Common practice is to use persons with pre-determined competence such as persons who are members of a flying club or other suitable aviation organisation. However, a base level of understanding should not be taken for granted. All officials should be briefed on their respective role and duties and understand the risks involved in participating in the display. They should be trained or knowledgeable in ground marshalling signals and (generally) only persons experienced in flight-line ground-handling of aircraft should be used in the aircraft movement area.
- 5.7.3 Officials must be provided with a means of easy identification, such as high visibility vests, armbands or coloured shirts.

5.8 Display pilot requirements

- 5.8.1 The display organiser is responsible for reviewing the display pilot and essential crew details prior to participation in a display. The way in which this is done is up to the organiser, but an example is provided in Appendix I of this AC. This information needs to be acknowledged by the Display Organiser as being present and suitable. CASA does not need this information as it is the organisers responsibility to ensure that pilots participating in the display have the required medicals, licences, and ratings to participate. CASA may request this information from time to time for further review.
- 5.8.2 To participate in an air display, a flight crew member must meet the following licensing, medical and approval requirements:
- except for balloon pilots: hold a valid Part 61 of CASR Flight Crew Licence with the applicable flight activity endorsements and class or type rating for the aircraft to be operated
 - except for balloon pilots: meet the recency requirements of Part 61 of CASR
 - for balloon pilots: hold a current balloon pilot authorisation in accordance with the requirements of CAO 95.54 or Part 5 of CAR as required by the display organiser
 - for balloon pilots only: have any flight experience requirements required by the display organiser⁶
 - hold an approval under regulation 91.045 of CASR for a particular activity that requires such an approval
 - hold a current medical certificate, or medical exemption, as required for the flight crew licence or pilot authorisation held
 - be named in the air display approval program of events, along with the activity being conducted.

Note: Holders of foreign pilot licences may apply to CASA for a certificate of validation or an exemption against Australian licensing requirements. Such requests should be made with a long lead time to avoid delays.

- 5.8.3 Display pilots must comply with the following conditions:
- attend any briefing session convened in relation an approved air display
 - acknowledge their attendance at the briefing session in writing (if unable to attend in person a telephone briefing may take place)
 - not operate an aircraft in non-aerobatic manoeuvres at a speed less than 1.3 times the stall speed ($1.3 \times V_s$) for the aircraft configuration
 - meet the following recency requirements for the conduct of the flight activity endorsement:
 - o below 3000 ft AGL – the pilot has performed an aerobatic sequence at least three times in the preceding 12 months
 - o below 1 500 ft AGL – the pilot has performed an aerobatic sequence in the preceding 30 days down to a height of 1 500 ft AGL or below
 - o below 1000 ft AGL – the pilot has performed an aerobatic sequence in the preceding 30 days down to a height of 1000 ft AGL or below; and preferably

⁶ For non-balloon aircraft, extra flight experience requirements are not normally necessary due to pilots holding specific qualifications in formation or aerobatic flight. For balloon aircraft, these equivalent qualifications do not exist, hence some display organisers have at times elected to require balloon pilots to have a minimum level of experience as a pilot in command.

performed a sequence down to 1000 ft preparatory to performing below 1000 ft.

- avoid buildings or persons on the ground and be able to manoeuvre clear in the event of an engine failure or loss of control
- not carry any passengers during a flight in the course of the programme of events of an approved air display
- comply with any instructions issued by or on behalf of the person who conducts the air display relating to the cessation of flight by a pilot.

5.9 Carriage of persons other than flight crew

- 5.9.1 The intention is that no passengers will be carried on an aircraft participating in an air display and this is a condition on the instrument of approval. However, also refer to paragraph 5.9.5 below in relation to balloon displays and the carriage of passengers.
- 5.9.2 Non-Flight Crew Members such as Aircrew other than the pilot may be carried on board a civil aircraft during an air display if required by the Aircraft Flight Manual or Certificate of Airworthiness, in this case they may considered to be crew.
- 5.9.3 However, there are circumstances where the safety of the operation would be enhanced by the carriage of an observer for formation flypasts and non-aerobatic activities. In this case the display organiser may approve the carriage of persons other than flight or air crew members on board a display aircraft. The display organiser must approve the carriage of any person other than a crew member as part of an approved air display (Inclusive of the names in the program of events) and the details must be included in the application for any single display or in the exposition for an ongoing approval.
- 5.9.4 Certain large display organisations may conduct training or mentoring of new air display pilots during the conduct of certain displays. These organisations must have procedures and process for risk assessing the carriage of mentors or instructors during a display. The display organiser must approve the conduct of instruction or mentoring as part of an approved air display (Inclusive of the names in the program of events) and the details must be included in the application for any single display or in the exposition for an ongoing approval.
- 5.9.5 For a balloon display, due to the differences in the risk profile, passengers may be carried provided the display organiser has approved the carriage. If passengers are carried in accordance with this approval, the display documentation must include procedures for mitigating any risks of carriage of these passengers. Air display organisers can expect that if this option was to be included in an air display, then CASA will include specific mention of this in the Instrument of Approval.

5.10 Pilot document checks

- 5.10.1 Prior to the event, the display organiser must ensure that they have sighted and hold copies (electronic or otherwise) of all relevant documents relating to each participating pilot.
- 5.10.2 Such documents must include, but are not limited to:

- flight crew licence/pilot certificate
- aviation medical certificate/declaration
- proof of aircraft class or type rating (if required)
- flight activity endorsements (where necessary).
- air operator's certificate and flight training or where the participant's role in the display involves a transport operation e.g. joy flights).

6 Display procedures - Site assessment and local authority consultation

- 6.1.1 As previously discussed, in order for an approval to be granted, CASA must be satisfied that the required test of safety (see paragraph 4.1.2 of AC 11-04) can be met. Over time, CASA has analysed and developed a set of standard safety conditions for air displays that provide predictability to the industry and have demonstrably resulted in the preservation of an acceptable level of safety.
- 6.1.2 This chapter of the AC sets out these standard safety conditions, which should be included in the display instructions, exposition or other document containing processes and procedures for the air display.

6.2 Selecting a display site

- 6.2.1 Many air displays are held at certified aerodromes and can take advantage of facilities already available; a number are staged at other sites that may not include aircraft landing areas. In assessing any proposed site, the display organiser or a delegated official should consider the following:
- are the surfaces used by aircraft for take-off, landing, taxiing and parking suitable?
 - are take-off and landing distances required and available?
 - are there any obstructions in the vicinity in relation to the performance of aircraft types that are expected to take part?
 - is there adequate airspace available to accommodate the planned display activities, and if not, can the required space be acquired?
 - if located within a scheduled air transport destination, is a Temporary Restricted Area or Danger Area required?
- Note:** if a temporary restricted area or danger area is required, the display organiser must complete a risk assessment and apply to the Office of Airspace Regulation for this.
- will the location impact uninvolved third-party persons who may not be aware of the display?
 - if the display area is located over water, can the display site be kept clear of boats and other watercraft (i.e., jet skis, kite surfers etc.)?
 - is the proximity of populous areas or public gatherings to the display site suitable, including:
 - o the proximity of any prohibited, restricted or danger areas, or areas that may be considered noise sensitive (i.e., hospitals, nursing homes)?
 - o the presence of livestock farms or wildlife conservation areas?
 - o the proximity of other aerodromes, known aircraft landing areas or other areas of known aviation activity, including unmanned aircraft operations and paragliding/hang gliding launch points?
 - o the availability of clear entry and exit routes for the public and emergency service vehicles, including consideration of the ERP?
 - o people and property?
- 6.2.2 A display site does not always have to be at an aerodrome. It can be a location for the assembly of spectators - where the aircraft departs from a remote location, travels to

the display site, performs their routine, and returns to the remote location to land. An example is a flypast, where the requirements pertaining to the suitability of surfaces for take-off, landing, taxing, and parking, as well as take-off and landing distances, do not apply.

6.2.3 When selecting a site, the following factors should also be taken into consideration:

- can adequate and easily controlled public viewing areas be provided?
- can safe passenger pick-up points be established outside the display clearances for joy ride, adventure flights and trial instructional flight operations?
- is there a suitable site for model aircraft flying, taking into consideration the aircraft type and minimum distances from general public?
- can a suitable drop zone be established for parachute operations, taking into consideration other operations and turbulence?
- can a suitable termination area for helicopters be established that allows easy arrival and departure procedures to remain clear of other traffic?
- is there a suitable area for an aircraft static display that is remote to any active aircraft movement area?
- can safe and efficient arrangements be made for aircraft refuelling, including risk of fire and public safety?

6.2.4 There are several factors to be considered in relation to the site assessment, the display organiser should consider all of these factors carefully when selecting the display site. The list above is not exhaustive, all safety related factors should be considered in the selection and management of a display site.

6.3 Authorities to be notified

6.3.1 At a minimum, the following authorities and services must be notified about the air display:

- aerodrome operators and owners
- police and local authorities
- emergency and first aid services
- [Airservices Australia](#).

6.3.2 The display coordinator is not required to contact or seek permission from Airservices Australia to conduct an air display, CASA will conduct this liaison as part of the approval process, if necessary. However, CASA does suggest that the display coordinator checks with local Airservices Australia representatives to clarify any local requirements prior to submitting an air display approval application.

6.3.3 If the display coordinator has any queries regarding local requirements, they should contact regservices@casa.gov.au.

6.4 Permission to use the site

6.4.1 Permission to use the site is normally required for all air display applications. This requirement can be met in several ways. In some circumstances, it may not be possible to obtain a permission due to the nature of the display site, such as a display conducted over the ocean.

6.4.2 The list below specifies the kinds of suitable permissions for different display locations::

- Display over a built-up or populous area below 1000 ft AGL or an aerobatic display over this area at any height. A written approval from the shire, council, town or city is required.
- Display at an aerodrome. A written approval from the aerodrome owner, operator or controlling authority is required.
- Display over private property. A written approval from the landowner is required.
- Display over public land such as cenotaph or open public space. The the organiser should obtain permission from the shire, council, town or controlling authority. Additionally, the permission of the event or gathering organiser, such as an RSL, a committee or a community group, should also be obtained

Note: The permission may be in the form a request to attend the event and participate in the display.

- Display over open space or open water. The the organiser should make every attempt to identify and receive permission from the controlling authority, government or local authority responsible for the land.

Note: The display organiser should obtain the permission to use the site from the relevant owner, operator or authority at the earliest stage of planning and prior to making an application to CASA. However, in some cases, the applicant may apply to CASA to meet the application timelines and provide the approval as soon as it is available.

6.4.3 Where it can be provided, a copy of the permission must be attached to the air display application.

6.4.4 Where the landowner cannot be determined or has not permission has not been provided, the organiser must clearly describe the reason why permission was not granted or was not able to be obtained.

6.5 Police and local authorities

6.5.1 Where applicable, the display organiser should involve the local police at an early stage in the display planning so that arrangements can be made to control vehicular traffic and provide emergency services. In some instances, approval from the police or local council may be required.

6.5.2 Providing the various local authorities with early advice of the intention to hold a display ensures that any subsequent approach for assistance will not be unexpected. In any case, such local authorities may wish to be made aware of the additional air activity in anticipation of any queries or complaints which may arise.

6.6 Emergency and first aid services

6.6.1 Suitable arrangements must be made to have first aid facilities available for both spectators and participants in the event of an aviation safety incident or accident. Minor first aid is not an aviation safety matter and is the responsibility of display organisers whether these facilities should be provided to participants or spectators. Voluntary first aid organisations such as St. John Ambulance Australia or the Red Cross may be able to assist with this service.

- 6.6.2 Emergency management services must be advised of the proposed display and directly briefed by the display organiser, display coordinator or the ground coordinator. They must also be provided with a copy of the ERP. In many cases, fire brigade and ambulance officials may decide to station emergency vehicles at the event and are required to be briefed of the risks that may be present if an on-field incident occurs. The brief should also include the location of on-field emergency access and event procedures in case of an emergency to control crowds and participants.
- 6.6.3 Written instructions on the actions to be taken in the event of an aircraft accident or other emergency should be drawn up by the display organiser, in conjunction with local emergency services, for the use of all persons involved in running the event. These instructions should include emergency contact numbers and should be contained in the ERP. The [Australian Transport Safety Bureau \(ATSB\)](#) document - Hazards at aviation accident sites: Guidance for police and emergency personnel provides further information on dealing with an aircraft accident scene.
- 6.6.4 A suitable and reliable means of contacting emergency services should be readily available to the display organiser, display coordinator, and the ground coordinator.

7 Display procedures - Site management

- 7.1.1 As previously discussed, in order for an approval to be granted, CASA must be satisfied that the required test of safety (see paragraph 4.1.2 of AC 11-04) can be met. Over time, CASA has analysed and developed a set of standard safety conditions for air displays that provide predictability to the industry and have demonstrably resulted in the preservation of an acceptable level of safety.
- 7.1.2 This chapter of the AC sets out these standard safety conditions, which should be included in the display instructions, exposition or other document containing processes and procedures for the air display.

7.2 Public enclosures and safety

- 7.2.1 When determining the distance between the display axis and the crowd line, the display coordinator should consider the speed of the display aircraft, the type of display being conducted (i.e., flypast or aerobatic), and/or the manoeuvrability of any formation to react to an emergency. For aircraft flying in formation, the distances are applicable to the aircraft performing nearest to the crowd line.
- 7.2.2 Pilots and formation leads should plan their flying sequence(s) in such a manner that they can always regain the display axis without infringing on the minimum separation distance from the crowd line.
- 7.2.3 To prevent hazards from downwash or control difficulties, rotorcraft must not be flown in proximity to spectators' enclosures, buildings, or aircraft on the ground. Similarly, rotorcraft with underslung loads should only be flown over clear areas and away from public enclosures.
- 7.2.4 Spectators' enclosures and car parks should be confined to one side of the site, allowing rotor wing and display aircraft maximum freedom to operate on the other side. These sites must be carefully selected and must never be located underneath them or within the display axis clearance areas. They should also be positioned behind the crowd line, which is parallel to the display axis and beyond minimum distances.
- 7.2.5 Effective barriers and marshalling are required to keep spectators clear of aircraft manoeuvring areas. When selecting barrier types, consider the possibility of small children being able to pass under single rail barriers at adult waist height (such as road construction barriers), especially near aircraft in operational areas such as the adjoining taxiway or refuelling areas.
- 7.2.6 Areas where spectators are not permitted must be properly enclosed and sign posted.
- 7.2.7 Marshallers must be assigned to control crowd movements at all times throughout the event. Specific areas of high crowd concentration may need to be subject to further marshalling scrutiny to ensure the crowd barrier integrity is maintained.
- 7.2.8 A public address system is of great assistance in crowd control and is essential where large numbers of people, spectators or general public are involved. Such a system, when installed, should be clearly audible along the entire length of the crowd line.

- 7.2.9 Display and non-display (visiting) aircraft are not permitted to be taxied or have engine(s) operative in any area open to the public unless appropriate follow me vehicles and sufficient marshallers can be present to preserve public safety.

7.3 Parking of aircraft

- 7.3.1 For ease of control, aircraft taking part in the event should be segregated from both visiting and static aircraft.
- 7.3.2 Aircraft parking areas should be patrolled to ensure interference with parked aircraft by unauthorised persons does not occur. Pilots should be advised to lock aircraft and ensure they are tied down.
- 7.3.3 Should aircraft parking areas be located within minimum distances of the crowd line and display axis, ground marshallers must ensure that the area is free from pilots, passengers, spectators and underwing campers during the display.
- 7.3.4 Aircraft should be parked to allow easy access by fire vehicles and to allow other aircraft to be moved around them.
- 7.3.5 Spectators should be prohibited from entering parking areas when aircraft engines are running, or aircraft are taxiing. Areas designated as 'no live propeller zones' should be considered and actively enforced by ground marshallers. Follow me vehicles and sufficient marshallers may be used to escort aircraft for departure in an area that is open to public access, however tow vehicles or manual handling is preferred. If considering operations within public access areas, this must be included in the risk assessment.
- 7.3.6 In the interests of safety, smoking must not be allowed in aircraft parking areas. If underwing camping is permitted, open campfires should be prohibited in these areas.

8 Operations at aerodromes

- 8.1.1 As previously discussed, in order for an approval to be granted, CASA must be satisfied that the required test of safety (see paragraph 4.1.2 of AC 11-04) can be met. Over time, CASA has analysed and developed a set of standard safety conditions for air displays that provide predictability to the industry and have demonstrably resulted in the preservation of an acceptable level of safety.
- 8.1.2 This chapter of the AC sets out these standard safety conditions, which should be included in the display instructions, exposition or other document containing processes and procedures for the air display.

8.2 Non-controlled aerodromes

- 8.2.1 To permit operations at non-controlled aerodromes, CASA may issue a general exemption against the following regulations in Subdivision 91.D.4.6 of CASR—Avoiding collisions at or in the vicinity of aerodromes:
- paragraph 91.375(2)(a) of CASR - this regulation may affect aircraft flying in formation as there is a requirement for each pilot to lookout for other aircraft
 - paragraph 91.375(2)(c) of CASR - this regulation may affect aircraft conducting displays or practice as there is a requirement to avoid the circuit pattern at the aerodrome
 - paragraph 91.390(1)(b) of CASR - this regulation would affect displays of unlimited aerobatics below 500 feet commencing immediately after take-off.
- 8.2.2 Furthermore, to avoid any doubt, subregulation 91.385(1) of CASR is deemed to be met if there is an entry in the authorised aeronautical information (ERSA or NOTAM) for the conduct of manoeuvres or turns contrary to the normal circuit direction.

8.3 Controlled aerodromes

- 8.3.1 Subregulation 91.405(5) of CASR allows ATS to permit or instruct an aircraft to engage in conduct that would otherwise result in the contravention of that regulation. The display organiser must receive permission from the relevant ATS unit to conduct the display in that airspace. It is also good practice to have a NOTAM raised for the event in this case.

8.4 Ground special effects safety

- 8.4.1 The use of explosive/pyrotechnic devices for simulated ground bursts, smoke and other special effects must be strictly controlled by competent and qualified person(s) appointed by the display organiser. Separate approvals are required when pyrotechnics are proposed for use on the movement area or the runway, or on the approach or departure path of a runway. When pyrotechnics are proposed in conjunction with an air display, the application for approval should include details of all pyrotechnic displays.
- 8.4.2 Debris from such effects must not impinge on aircraft in flight or on the ground, the crowd or other participants. The scale of any effects must be known before the event and be appropriate to ensure the safety of all concerned.

- 8.4.3 The smoke emitted by the special effects may affect other display participants (in relation to visual separation) and must be considered in any risk assessment. Prevailing winds at the time of the display may also increase the risk. Excess smoke may affect an airborne aircraft's ability to maintain a constant reference to the display axis and may therefore delay the display until the smoke has cleared in the interest of safety.
- 8.4.4 Both the display organiser and the display coordinator must be fully aware of what affect special effects will have on the display in general.
- 8.4.5 Display officials and pilots must be made aware of the location of special effects on the airfield and included on the site diagram. The display organiser must also draw attention to the hazardous nature of such devices during the display pilot briefing. The location and safety radii, if appropriate, of the special effects, must be out of bounds to everyone except those directly involved with their operation.
- 8.4.6 Ground special effects should generally be offset from the flight line to ensure aircraft are not overflying the effects and to reduce the likelihood of debris contacting the aircraft.
- 8.4.7 Care must be taken to ensure the safety of the general public and parked aircraft in relation to debris that might become airborne during the effect's activation, especially if these are elevated, in close proximity or have little geographic shielding.

9 Flying display (common matters)

- 9.1.1 As previously discussed, in order for an approval to be granted, CASA must be satisfied that the required test of safety (see paragraph 4.1.2 of AC 11-04) can be met. Over time, CASA has analysed and developed a set of standard safety conditions for air displays that provide predictability to the industry and have demonstrably resulted in the preservation of an acceptable level of safety.
- 9.1.2 This chapter of the AC sets out these standard safety conditions, which should be included in the display instructions, exposition or other document containing processes and procedures for the air display.

9.2 Display briefing

- 9.2.1 Regardless of the size of the event, the importance of a thorough, formal verbal briefing cannot be over-emphasised. Pilots taking part in a flying display must receive the appropriate formal verbal briefing in addition to the written display instructions that would have already been supplied.
- 9.2.2 A written brief on the arrangements of the flying program should be included in the display instructions and circulated in advance to all participating flight crew, Air Traffic Control, adventure flight, joy flight and trial instructional flight operators, as well as those in charge of functions - such as safety services and ground marshals and photographers (media). A list of points that should be covered in the written brief, as a minimum, is given at Appendix E of this AC.
- 9.2.3 A written brief is important for pilots who are not landing at the event, but rather flying to the display site, performing the display routine, and then departing the display location. In this case, the display coordinator must brief such participants, by phone or electronic means, of any last-minute changes in program sequence or timing.
- 9.2.4 A formal verbal briefing must be given on the day or as soon as practicable prior to the display, and at any rehearsal. All participating pilots, relevant emergency personnel, pyro-technicians and safety-related staff should attend. Those participating pilots not able to attend the formal verbal briefing must be given a separate verbal briefing on all matters covered at the formal briefing, prior to participating in the display.

Note: The issuing of a NOTAM does not remove the responsibility of the PIC to maintain a thorough lookout for other display and non-display aircraft and to 'STOP DISPLAY' if safety is compromised.

9.3 Manoeuvring limitations

- 9.3.1 Aircraft used in an air display are subject to the following manoeuvring limitations:
- except during take-off or landing, or where specifically requested as part of the program of events and then part of the approval, an aircraft must not operate below 500 ft above ground level (AGL)
 - except where specifically requested as part of the program of events and then part of the approval, an aircraft in flight below 1 500 ft AGL must not:
 - o track or manoeuvre towards spectators within a horizontal distance of 500 m; or
 - o pass within 200 m horizontal distance from spectators.

- The conduct of aerobatic manoeuvres over aircraft parking areas, whether occupied or not by persons, below 500 ft AGL should be avoided where practicable. Certain display locations may make this impossible to achieve and as such the organiser should clearly demonstrate via their risk assessment how they would mitigate the risk to people on the ground co-located with an aircraft parking area if a display line needed to be over such an area.

9.4 Display lines

- 9.4.1 Participating aircraft normally perform relative to a line known as the display axis. This line must be clearly defined. Where the axis is not delineated by a paved runway or other obvious features, it must be marked in a method that makes it clearly visible to aircraft throughout their display routine.
- 9.4.2 All display lines must be carefully considered from a spectator safety perspective, mitigated, and included as part of the risk assessment.
- 9.4.3 All participants must be thoroughly briefed about the display axis, which may vary for differing aircraft performance types.
- 9.4.4 Most events are made up of aircraft whose display speeds vary widely. It may be unduly restrictive, from the viewpoint of display, to insist that all aircraft be confined to a single display axis which is distanced for the aircraft with the highest speed. It may be acceptable to have multiple display axes for various participants or types of aircraft. Should this option be considered, all pilots must be thoroughly briefed about which display axis pertains to their operation(s), both in the oral brief and in the written briefing notes.
- 9.4.5 An aerodrome diagram with display lines and the display area clearly marked must be submitted as part of the display instructions with the application for approval of an air display. An example can be found in Appendix D of this AC.

9.5 Display area

- 9.5.1 A display area should be clearly identified in the application, display instructions, pilot briefing material and at the air display pilot brief. All operations outside of the display area should be conducted in accordance with relevant regulations.

Note: For aerobatic competitions or displays, the display area is generally known as the display box.

9.6 Setting minimum heights

- 9.6.1 Pilots are usually permitted to fly to the minimum height specified on their applicable flight activity endorsement; however, in certain circumstances CASA may impose a minimum height which may be higher. CASA may specify a minimum height at any location or for any area. If CASA does not specify a minimum height, regulation 91.267 of CASR states that an aircraft must not operate below 500 ft, except during take-off or landing.

Note: Display pilots need to be able to satisfy the display organiser that they meet proficiency and currency requirements (refer to AC 61-18⁷) for aerobatic currency.

- 9.6.2 The display organiser must ensure that pilots are advised of their minimum heights in both the verbal brief and the written briefing material circulated before the display.
- 9.6.3 Pilots of military display aircraft participating in civil displays should be asked to advise the display organiser of their individual height minima.

Note: Regulation 61.010 of CASR defines a 'low level operation'. This limits the applicability of low flying approvals for the purpose of air displays, practice for air displays or competition events. CASA has issued an exemption (CASA EX07/24 — Low-level Operations (Air Displays and Aerobatic Manoeuvres)) to allow pilots who do not hold a rating or flight activity endorsement that authorises low flying, to undertake that activity without contravening the intent of the definition of 'low level operation'.

9.7 Weather minima

- 9.7.1 Minimum weather conditions must be determined by the display organiser in advance of the air display, published in the display instructions and strictly observed. This makes the decision to cancel the display in the event of bad weather less subjective and minimises pressure on the display organiser to proceed with the display in less than favourable conditions.
- 9.7.2 In any event, a display is not permitted to take place in less than VMC.
- 9.7.3 The display coordinator must consider the operating characteristics of each participating aircraft. It may be necessary for the display coordinator to remove an aircraft from the flying program in the event of weather conditions for which a participating aircraft is not approved to fly in.
- 9.7.4 Pilots should also be aware of their individual minimum weather conditions for operations in case the display organiser's minimum requirements do not cover operational safety of the aircraft or of the individual display. In any of these circumstances if the minimum weather conditions stated by the display pilot are more restrictive, these must be observed for the aircraft operation and to enhance safety.

9.8 Compliance with fuel requirements

- 9.8.1 A PIC operating an aircraft at an air display is required to comply with the fuel requirements in Division 91.D.6 of CASR. Display organisers are responsible for ensuring that this requirement is met, unless a general exemption has been issued to allow certain aircraft or operations to be conducted with a fuel load that is less than what is prescribed in Division 91.D.6 of CASR.
- 9.8.2 If a general exemption is being used, the display organiser must specify which aircraft are operating under this exemption in their application to CASA.

⁷ At the time of publication of this document, AC 61-18 is under development. Once published, it will be available from the CASA website.

9.9 Airspeed limits

- 9.9.1 Under regulation 91.090 of CASR and the Part 91 Manual of Standards (MOS), airspeed limits apply to operations in any airspace below 10 000 ft (e.g., in class G airspace aircraft speed is restricted to 250 kts).
- 9.9.2 Display organisers are responsible for ensuring that this requirement is met, unless a general exemption has been issued to allow certain aircraft or operations to be conducted at a speed greater than what is prescribed in regulation 91.090 of CASR and the Part 91 MOS.
- 9.9.3 If a general exemption⁸ is being used, the display organiser must specify which aircraft are operating under this exemption in their application to CASA.

9.10 Radio communications

- 9.10.1 Except for single ship displays or flypasts that are not conducted at an aerodrome, adequate ground-to-air communications must be established and maintained for the duration of air displays. For single ship displays and flypasts not conducted at an aerodrome, it is still recommended that adequate ground-to-air communications be established and maintained.
- 9.10.2 Effective communication is essential between the Unicom and any aircraft established in the nominated air display holding areas. Evidence suggests that the use of hand-held radios for the purpose of Unicom operations is not advisable due to the limited range associated with these units. As a result, it is recommended that a base station radio and appropriate aviation headset be utilised by the Unicom operator to ensure effective communication.

Note: Regulations 91.630 and 91.640 of CASR require the pilot to maintain listening watch or broadcast on the appropriate frequencies. CASA may issue a general exemption against the regulations to monitor and broadcast on discrete radio frequencies, as it may not be possible or practicable during practice or the conduct of an air display or during competitions.

9.11 Practice associated with an air display

- 9.11.1 Practice for an air display can occur either as part of an air display or it can be conducted as ongoing or recurrent maintenance of qualifications or skills used at air displays. Appendix G to this AC provides guidance for air display practice that is not associated with an air display application.
- 9.11.2 Where a display organiser plans for practice to be conducted as part of an application, they must include the date and times of the practice. Air display practices must be completed before the start time of the air display itself. The organiser must include details of the air display practice in their display instructions including:
 - location of the practice if different to that of the actual display
 - briefing details for the practice
 - if the practice is to be performed over several days at a multi-day event, the details of each days practice and the associated briefings.

⁸ At the time of issuing v2.3 of this AC, the general exemptions relating to air displays were contained within CASA EX67/24.

10 Flying display (particular activities or operations)

10.1 Dropping things from an aircraft

- 10.1.1 Air displays have historically included such events as flour bombing, streamer cutting, and dropping of things for ceremonial purposes.
- 10.1.2 Regulation 91.190 of CASR does not permit a thing to be dropped from an aircraft. However, things can be dropped from an aircraft conducting aerial work under a Part 138 certificate (properly called an aerial work certificate) or an aerial application operation under Part 137 of CASR.
- 10.1.3 If CASA chooses, it can issue an exemption to specific pilots and/or operators to allow things to be dropped from an aircraft. If an exemption is being used, the display organiser must specify which aircraft are operating under this exemption in their application to CASA.

10.2 Towing of lights and the use of pyrotechnics from an aircraft

- 10.2.1 If towing of lights and the use of pyrotechnics from an aircraft is to be combined with aerobatics at night, consider the requirements of section 10.16 of this AC in addition to this section.
- 10.2.2 The towing of lights requires an approval under regulation 91.210 of CASR and may be subject to specific conditions. These conditions are likely to be similar to the requirements related to Class E external loads, described in the Part 138 MOS (see the definition of class E external load in subsection 1.04(6) of the Part 138 MOS, as well as subsection 15.09(4), and sections 15.10, 15.12 and 15.13).
- 10.2.3 In the past, the use of pyrotechnics from an aircraft in a display was permitted under an exemption issued to a pilot to carry out such a display. Under the current legislative structure, this exemption is applied against regulation 91.810 of CASR, but only to the extent of the requirements of subsection 26.24(2) of the Part 91 MOS., which enables the pilot to not have to display navigation lights during flight. For certain operations, the display of the navigation lights affects the visual effect of the pyrotechnics that form part of the air display. This is acceptable noting that other safety precautions are in place that compensate for the lack of displayed navigation lights.
- 10.2.4 For this specific type of display, the pilot is required to demonstrate to CASA, through well-defined processes and procedures, how the display will be conducted. A risk assessment covering the human factors surrounding this specific type of display and how the risks associated with this event are mitigated, will also be required.

10.3 Banner towing

- 10.3.1 Specific approval is required from CASA, under regulation 91.210 of CASR, for a pilot to tow and drop banners, and for an aircraft to pick up a banner in flight. Additionally, the area used for pick-up and drop must be approved.
- 10.3.2 If intrusions by persons and equipment onto the runway strip are required for an aerial pick-up of a banner, the aerodrome may need to be closed for an adequate time to

ensure safety of operations. A ground launch of the banner is a much simpler procedure and does not need the aerodrome to be closed.

- 10.3.3 The type of banner launch is required to be assessed by CASA when banner towing is part of the display program.

10.4 Aerial application demonstration

- 10.4.1 Airborne demonstrations of aerial application equipment must be conducted in accordance with the following requirements:

- the pilot must be authorised under Part 61 of CASR to conduct an aerial application operation in that category of aircraft
- substances having toxic or noxious characteristics must not be released from the aircraft
- substances dropped or discharged from the aircraft must not contact spectators
- equipment used in aerial application demonstrations must be decontaminated before the demonstration in accordance with relevant State, Territory or Commonwealth regulations.

- 10.4.2 Aerial application demonstrations are conducted under one of the following:

- an exemption issued against regulation 91.190 of CASR
- an aerial work certificate with an authorisation for a dispensing operation (with operations manual content encompassing the requirements of regulation 138.425 of CASR)
- an AOC authorising Part 137 aerial application operations.

10.5 Commercial operations (Drones)

- 10.5.1 Aerial filming of the air display by an unmanned aircraft is common with the advancement in drone technology. However, these operations near an air display can distract air display pilots from the operation of the aircraft, could represent a hazard to the display aircraft, and are an elevated risk.

- 10.5.2 Unless the unmanned aircraft is being operated in the excluded category, commercial operations of unmanned aircraft at an air display must be undertaken only by accredited operators who hold a remotely piloted aircraft operator certificate (ReOC).

10.6 Air transport operations and balloon transport operations

- 10.6.1 The carriage of passengers for hire or reward for sightseeing or joy flights may only be conducted by operators who hold an air operators certificate (AOC) which authorises operations under Parts 121, 131, 133 or 135 of CASR. Air transport operations (under Parts 119, 121, 129, 133 or 135 of CASR) are not normally permitted as part of the air display itself unless otherwise approved by CASA (note this is not referring to normal departures and arrivals in accordance with the normal course of navigation which are permitted). For balloon transport operations to be included as part of the air display they must be permitted by the display organiser.

- 10.6.2 Aircraft engaged in air transport must be parked away from aircraft taking part in the flying display, and static display aircraft. Passengers must be escorted between the public enclosure and the aircraft before and after each flight. The route must be planned to ensure the passengers remain clear of other aircraft.
- 10.6.3 Air transport operations and balloon transport operations must be conducted in accordance with the operator's approved exposition.

10.7 Trial instructional flights

- 10.7.1 Trial instructional flights may only be conducted by operators who hold a Part 141 or Part 142 authorisation, or an approval to conduct training under a relevant self-administration organisation.
- 10.7.2 These operations are flight training in the relevant aircraft type and must be conducted as bone fide flight training under the requirements of the Part 141 or Part 142 authorisation, or the requirements of the respective Self-Administering Operations Manual or Exposition, which may include:
- pre-flight briefing and acceptance of risk as an informed participant
 - temporary membership to a self-administering organisation
 - signing of indemnity waivers.

10.8 Limited category aircraft (including Adventure flight operations)

- 10.8.1 Adventure flight operations can only be carried out by operators of limited category aircraft that have an approval issued by the Australian Warbirds Association Ltd (AWAL) under CASR Part 132. Adventure flight operations, like other commercial passenger carrying operations, can be slotted into the programme of events but can't participate in the air display themselves.
- 10.8.2 Flights of limited category aircraft that are not adventure flights can participate in air displays. Air display organisers, similar to all other aircraft, are recommended to review the aircraft's certification status.

Note: Limited category aircraft operations at any aerodrome require separate permission from the aerodrome operator. Noise certificates or exemptions are also required for operations at a particular aerodrome.

10.9 Experimental aircraft operations

- 10.9.1 The requirements for an experimental aircraft to hold an approval under regulation 91.875 of CASR for flights over certain areas are currently changed by the effect of a general exemption contained within section 25 of CASA EX67/24. Refer to the GM 91.875 entry in the Part 91 AMC/GM document for further information on the effect of the exemption⁹.
- 10.9.2 Display organisers and display pilots are highly recommended to be aware of the GM 91.875 guidance and its relevance to exactly which kinds of flights of an experimental aircraft require a specific additional approval.

⁹ The information within the GM 91.875 entry that relates to section 25 of CASA EX67/24 is part of additions to the Part 91 AMC/GM contained within v2.4 of that document.

10.10 Sport and recreational aircraft displays

- 10.10.1 Each Approved Self-Administering Organisation (ASAO) has their own requirements for members and aircraft taking part in a CASA approved Air Display. Flights of ASAO aircraft can participate in air displays. Air display organisers, similar to all other aircraft, are recommended to review the pilot's qualifications and the aircraft's airworthiness status.

10.11 Glider displays

Reserved

10.12 Parachute displays

Reserved

10.13 Balloon displays

- 10.13.1 Permission may be granted for both fixed/tethered and manned free balloons to operate at the event. Part 131 of CASR covers both activities.
- 10.13.2 It should be noted that the minimum heights for aircraft at the display relate to the highest point of the terrain, or any obstacle thereon, within a radius of 600 m of a line extending vertically below an aircraft. A poorly placed tethered balloon could force other aircraft to operate at greater heights than would otherwise be necessary.
- 10.13.3 Because of the inflation and deflation process, manned free balloon flights can be a time-consuming operation. This should be timed accordingly within the event program.
- 10.13.4 In relation to the carriage of passengers on Part 131 aircraft as part of the air display, CASA will not grant an air display approval unless the display organiser has a process in place to:
- assess the safety of such operations and approve them
 - ensure that passengers are not carried on any Part 131 aircraft for hire or reward unless the operator holds a balloon transport AOC.
- 10.13.5 Where the public are permitted to mingle with inflating balloons, CASA will not grant an air display approval unless the display organiser requires each balloon operator to provide a physical barrier or tape to mark an exclusion zone around the inflation fan.
- 10.13.6 The operation of a tethered balloon may or may not constitute an air display. The following advice summarises the specific legal situation regarding these aircraft:
- The airborne element of the tethered balloon activity does not fit within the definition of *flight* within The Act.
 - The airborne element of the tethered balloon activity does fit within the 'organised flying' element of the *air display* definition.
 - As a result of the previous 2 points, subregulation 91.180(1) of CASR can apply to the operation of a tethered balloon if the activity fits within the *air display* definition, but subregulation 91.180(2) of CASR does not apply to the tethered balloon as the operation is not a flight.

- If the operation of a tethered balloon meets **all** of the following criteria, then the operation of the tethered balloon would require the operator of the balloon to hold a balloon transport AOC under Part 131 of CASR¹⁰:
 - o The balloon meets the definition of a free balloon which is a balloon that is intended for flight without being permanently tethered, i.e. the tethering is only temporary and the balloon is one that can be flown untethered.
 - o The balloon meets the definition of manned free balloon which means the balloon is equipped to carry one or more persons and is also equipped with controls that enable the altitude of the balloon to be controlled.
 - o The operation carries passengers for hire or reward (see the GM 119.010 entry in the Part 119 AMC/GM document for CASA's interpretation of what constitutes hire or reward).
 - o The balloon is registered under Part 47 of CASR or is foreign registered.
 - o The balloon is the subject of a *standard certificate of airworthiness* and not a *special certificate of airworthiness* (see regulation 21.175 of CASR for the definition of these 2 terms).
- Regardless of whether the operation of a tethered balloon meets the above criteria, operators of tethered balloons are especially reminded that the operation must be conducted in accordance with the following rules (other rules will also apply):
 - o Section 20A of The Act which states a person must not operate an aircraft being reckless as to whether the manner of operation could endanger the life of another person, and a person must not operate an aircraft being reckless as to whether the manner of operation could endanger the person or property of another person.
 - o From 12 November 2024 - in accordance with Chapter 20 of the Part 131 MOS for a temporarily tethered balloon, or in accordance with Subpart 131.Z of CASR and Chapter 29 of the Part 131 MOS for permanently tethered gas balloons.

Example 1

A manned free balloon is temporarily tethered in a field as part of a regional show event. The tethered balloon is not carrying passengers. The regional show event is widely publicised and is the subject of a general public invitation, but the presence of the tethered balloon is not specifically publicised.

The regional show fits within the definition of *public gathering*.

The tethered balloon is 'organised flying performed before a public gathering' and therefore the operation of the tethered balloon constitutes an air display.

The person conducting the air display, i.e. the air display organiser, must hold an approval under regulation 91.180 of CASR to conduct the air display.

As per the air display approval application form, for a simple air display of this kind, the primary elements needed to obtain the air display approval are a risk management plan and an emergency response plan. These matters do not need to be complex. Organisers are recommended to read the guidance contained in this AC.

¹⁰ This is due to the definition of balloon transport operation in regulation 131.010 of CASR.

Example 2

A manned free balloon is temporarily tethered in a field as part of an aero club family event. The tethered balloon is not carrying passengers. The aero club family event was not the subject of a general public invitation as the invitations were limited to the family of aero club members only to keep the overall numbers within the ability of the aero club to manage. The presence of the tethered balloon was specifically publicised to this select group.

The aero club family show does not fit within the definition of public gathering. Therefore, the operation of the tethered balloon cannot be considered an air display, and there is no requirement for the person conducting the air display to hold an air display approval.

The person operating the tethered balloon must still comply with section 20A of the Act and the relevant provisions of the CASR for the tethered balloon.

10.14 Model aircraft displays

- 10.14.1 Model aircraft displays may be held on the movement area within, but no closer than, 30 m from the crowd line. They can be held as part of the main program or independently of the program in an area remote from the movement area.
- 10.14.2 Model aircraft displays must not take place in the vicinity of the aerodrome while other aircraft movements are in progress.
- 10.14.3 Under regulation 101.410 of CASR, a person may conduct a model aircraft flying display only in an approved area (an area approved by CASA under regulation 101.030 of CASR), and only in accordance with the rules and procedures of an approved aviation administration organisation.
- 10.14.4 Model aircraft operators are required to attend the pre-display briefing to fully appreciate and integrate into the broader air display context.
- 10.14.5 All model aircraft must comply with regulation 101.055 of CASR, which states a person must not operate an unmanned aircraft in a way that creates a hazard to another aircraft, another person, or property.
- 10.14.6 An unmanned aircraft cannot operate over a movement area or runway of an aerodrome, or the approach or departure path of a runway of an aerodrome, without approval from ATC—for a controlled aerodrome, or CASA (under regulation 101.080 of CASR)—for a non-controlled aerodrome.
- 10.14.7 The Display Organiser in consultation with the model operator and the Model Aircraft Association of Australia (MAAA) will be required to obtain a separate approval from CASA under CASR Part 101. The display organiser is responsible to ensure that an approval has been issued by CASA prior to any model aircraft operations being conducted as part of the program of events.

10.15 Kite flying

- 10.15.1 Kites may only be flown in accordance with Part 101 of CASR.

10.16 Aerobatics at night

10.16.1 Regulation 91.185 of CASR allows a pilot, who holds an approval under regulation 91.045 of CASR, to conduct aerobatics at night. For CASA to issue an approval for this specific display, the pilot must demonstrate competency in conducting aerobatics at night by providing CASA with the following for assessment:

- details of previous approvals from CASA to conduct this activity
- evidence of training or assessment undertaken in an ICAO Contracting State or in the military.
- well-defined processes and procedures that demonstrate how the display will be conducted
- a risk assessment covering the human factors surrounding a night flight and how the risks associated with this event are mitigated.

10.17 Formation in instrument meteorological conditions or at night

10.17.1 Regulation 91.205 of CASR allows a pilot, who holds an approval under regulation 91.045 of CASR, to conduct formation in instrument meteorological conditions (IMC) or at night. For CASA to issue an approval for this specific display, the pilot must demonstrate competency in conducting formation in IMC or at night by providing CASA with the following for assessment:

- details of previous approvals from CASA to conduct this activity
- evidence of training or assessment undertaken in an ICAO Contracting State or in the military
- well-defined processes and procedures that demonstrate how the display will be conducted
- a risk assessment covering the human factors surrounding a formation flight in IMC or at night and how the risks associated with this event are mitigated.

10.18 Carriage of persons in a location on the aircraft that is not normally used for the carriage of persons

10.18.1 Regulation 91.200 allows CASA to issue an approval under regulation 91.045 for a person to be carried in parts of, or locations on an aircraft that are not normally used for the carriage of persons. In the air display context this may be used for events such as:

- wing walking
- person being towed by an aircraft
- carrying a person as an external load (winching, rappelling or slinging).

10.18.2 As passengers cannot be carried by air display aircraft, for the purposes of the air display, the person who is carried under this approval must be a crew member. The applicant must provide comprehensive details of this display type in the display instructions, risk plan and emergency response plan. The details must include:

- names and qualifications, skills or competencies of the persons being carried
- method of securing the person in any location
- if the person will be carried externally or outside the aircraft

- types of aviation activity being conducted ie aerobatics, while the person is being carried in the location
- whether the person will move locations during the display
- detailed emergency procedures for any likely event while the person is carried in the location
- clearly articulated and mitigated risks to the carriage of the person
- the specific actions to be undertaken in the event of an incident or accident
- the details of specialist medical or emergency equipment required on site.

11 Post display report

11.1.1 As a requirement of the display approval process, CASA requires the display organiser to provide a Post Display Report to CASA. The post display report identifies any safety related occurrences and details relating to the oversight and running of the event.

11.1.2 This report is required to be provided to CASA within 14 days after the event and must include the following details:

- any safety related occurrences at the display - including the pre and post display arrivals and departure of both display and non-display aircraft
- any actions or operations that were not compliant with the air display approval
- any 'STOP DISPLAY' calls required in the interests of safety, and the reason for those calls
- organisational or administrative issues that may impact the safety of future displays
- a copy of the completed and signed participant signature sheet.

Appendix A

Event planning guide

A.1 Event planning guide

A.1.1 Nominate a display organiser, display coordinator and, depending on the size of the event, a flying display committee.

A.1.2 If an air display approval is required, apply to CASA at least 45 days prior to the event (unless it is for a small event or flypast which requires 21 days). The application must include the following supporting documentation:

- air display instructions
- a risk assessment
- flying display programme
- emergency response plan
- permission from the aerodrome operator or landowner
- aerodrome/area diagram with display lines
- Display Pilot and Essential Crew Details Sheet (refer to Appendix I of this AC).

A.1.3 When planning an air display:

- Consider the following:
 - o what aviation activities will be conducted under the various CASRs
 - o pre-event tasks, such as site assessment and consultation with the airport operator or landowner, local airspace users, local community, emergency services and police
 - o spectator area safety
 - o car parking and visiting aircraft parking
 - o display area obstructions
 - o marking of display lines
 - o requirement for ATC or UNICOM
 - o public address system
- For larger displays, or a request for an ongoing air display approval, prepare an exposition document that covers all aspects of the applicable CASRs and includes the following:
 - o management structure
 - o display lines
 - o display heights
 - o display briefing
 - o competence of participants
 - o conduct of special effects
 - o any other exemptions that may be required.
- Formulate a comprehensive risk assessment and emergency response plan.
- Consult with air display participants to ensure that display routines, display approvals and recent experience will be current for the event. The location and safety of special effects/pyrotechnics needs careful consideration and planning and may require special approval. Military display involvement will require consultation and coordination with the ADF.
- Send all participants written briefings, including military participants, special effects, and crews of display aircraft. Send all participants written briefings, including military participants, special effects, and crews of display aircraft.

- Undertake a complete check of communications and emergency procedures prior to the display day. A practice day can be used to check all facilities and emergency services communications. Send all participants written briefings, including military participants, special effects, and crews of display aircraft.
- Submit the finalised display programme to CASA as soon as possible to ensure the air display approval will be granted in time.
- At a nominated time, provide an onsite briefing is to all participants and display pilots involved in the air display. Nonattendance will require the display coordinator to remove the participant from the air display programme. All display pilots must sign the attendance form or be specifically briefed by the display Coordinator and the display Coordinator indicates on the participant sheet, when, who and how the participants who don't sign the briefing attendance sheet were provided a brief
- Complete a Post Display Report on the conduct of the air display and submit it to CASA. The post display report may include recommendations to enhance safety, and for improvements to be made to the event, aviation rules and the air display process.

Appendix B

Sample display program

Operator		Aircraft	Display Legend			AM DISPLAY WAVE 1000 - 1200																																																																																																					
RED THUNDER AIRSHOW 2018 LINE-UP					1000				1012								1024												1036				1048				1100				1012				1024				1036																																																										
					56	57	58	59	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	3
WHO	TYPE	REG	LEGEND	TIME																																																																																																							
Ramblers	Parachutists		<div></div>																																																																																																								
Cam Rolph-Smith	YAK 52	VH-YRO	<div></div>																																																																																																								
Steven Boyd	L39 Albatross		<div></div>																																																																																																								
Alan Kirkpartick	DR-107	VH-NIL	<div></div>																																																																																																								
Paul Strike	Newport 24	VH-IJI	<div></div>																																																																																																								
Chris Mayr	Fokker Tri-Plane (BLK)	VH-MYR	<div></div>																																																																																																								
Jack McDonald	Bristol Fighter	VH-IIZ	<div></div>																																																																																																								
Andrew Carter/ Gary Cooper	Fokker Tri-Plane (RED)	VH-FXP	<div></div>																																																																																																								
David Crow	DH-82	VH-FAG	<div></div>																																																																																																								
Shaun Davis	DH82	VH-UZV	<div></div>																																																																																																								
Ross Parker	Wirraway	VH-MFW	<div></div>																																																																																																								
Temora Museum	Spitfire (Mk XVI)	VH-XVI	<div></div>																																																																																																								
Cam Rolph-Smith	Yak 52	VH-YRO	<div></div>																																																																																																								
James Crockett	YAK3	VH-YOV	<div></div>																																																																																																								
Matt Handley	Trojan (T28)	VH-ZUK	<div></div>																																																																																																								
RAAF			<div></div>																																																																																																								
Sean Trestrail	Nanchang CJ-6	VH-NNG	<div></div>																																																																																																								
Egon Mahr	Nanchang CJ-6	VH-CJX	<div></div>																																																																																																								
Al Pickering	YAK52	VH-XRO	<div></div>																																																																																																								
Niall	YAK52	VH-	<div></div>																																																																																																								
LUNCH			<div></div>																																																																																																								
Paul Strike	Scout	VH-CFZ	<div></div>																																																																																																								
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Appendix C

Risk assessment

C.1 Risk assessment guidelines

- C.1.1 A risk assessment should not only be viewed as being a regulatory requirement but also as a practical approach to systematically examining risks, which in turn aids in developing practical operating instructions for any risk-based activity. Undertaking a thorough risk assessment ensures that operations will be conducted in accordance with the conditions of an air display approval and are considered during the planning process. Identified risk reduction strategies (risk mitigators) can then be incorporated into the operating procedures for the event. The risk assessment document can also be used as a reference document and form part of the induction and training of event staff, thus possibly reducing the time spent on training and supervising staff and allowing more time for the display organiser to oversee other aspects of running the event.
- C.1.2 A risk assessment can be viewed as a quality control document and should be treated as a 'living document' that is reviewed and updated on an ongoing basis.

C.1.3 Glossary of terms

- C.1.3.1 An appropriate starting point in developing a risk assessment is defining the terms that are used in a glossary of terms. The following terms are used in risk assessments and form the basis of CASA's evaluation:
- *hazard* – anything that may cause harm to people, or damage to aircraft, equipment, or structures. (i.e., a piece of equipment, a process, situation, or practice)
 - *risk* – the possibility that something may occur due to exposure to the Hazard; this is often measured in terms of Likelihood and Consequence
 - *likelihood* – a description of the probability that the Risk may occur. (e.g., 5-10% chance that the risk may occur)
 - *consequence* – the outcome of an event. (e.g., non-compliance with regulations or an Instrument, mid-air collision, airspace incursion etc).
- C.1.3.2 Examples of using these terms in the risk assessment is provided in Table 1 below.

Table 1: Example of Terms used in a risk assessment

Hazard	Risk	Consequence
Radio	Failure of the radio	Lack of ability to communicate with other aircraft, possible mid-air collision leading to possible injuries/death.
Mechanical	Failure of engine	Aircraft not able to return to land at the aerodrome, forced to conduct an out-landing resulting in damage to aircraft and possible injuries/death.
Crowd control	Spectators breaching the display aircraft parking area during the display	Risk of injury/death to spectator due to the poor visibility from the cockpit of aircraft while taxiing.

C.1.4 What is included in a risk assessment?

C.1.4.1 A risk assessment must include all of the following information:

- The risks (identified by asking 'What can go wrong?') and the likelihood and consequences of those risks. These then need to be tabulated and given a risk rating (Likelihood + Consequence). It is important that this step is done before treatment of the identified risks is undertaken.
- A risk treatment strategy (e.g., robust fencing, signage and security staff to ensure spectators cannot easily access the display aircraft area) and a subsequent risk rating after using the risk reduction strategy.

C.1.4.2 CASA uses this risk assessment information to assess all applications for air display approvals.

C.1.4.3 An example of a risk assessment that is widely used within CASA (illustrating the format and presentation of the required information) is provided in section C3 of this Appendix. The example provided includes some blank sections (Description of Risk, Residual Likelihood, Residual Consequence) that, when completed, provide a comprehensive and focused risk assessment. This sample risk assessment automatically calculates the risk levels (to ensure accuracy), with the risk rating colour changing in response to relevant risk levels (see information regarding the risk ratings and matrix in sections C5, C6 and C7 of this Appendix).

C.1.4.4 A risk assessment devised using the example section C3 of this Appendix adequately identifies the risks and the treatment strategies and enables CASA to fully analyse the information and effectively evaluate an application for approval/exemption from the regulations. The regulations are in place to mitigate risk, a substantial safety case may be required to provide assurance to CASA that the proposed activities may be performed in a manner where risk levels have been reduced to as low as reasonably practicable (ALARP).

Note: It is not generally possible to reduce the consequence of any hazard, as the outcome of the situation is generally the same irrespective of the mitigating strategy. For example, an aircraft crash will always have the possible outcome of injury/death irrespective of the risk mitigators employed. However, the likelihood of an aircraft crash can be reduced and if there is a reduction in the likelihood, then the overall residual risk is still reduced.

C.1.5 What level does the risk rating need to be before it becomes acceptable?

C.1.5.1 ALARP means that all efforts have been made to reduce the risks to the lowest level possible and a point is reached where any further risk reduction (by employing additional mitigation strategies) is considered a waste of resources as the risk has reached an acceptable level. ALARP depicts the notion that, in aviation safety, risks cannot be completely eliminated, however they may be reduced to a level that is either tolerable or broadly acceptable.

C.1.6 So, when does a risk become tolerable?

C.1.6.1 The answer to this is dependent on several factors:

- Legal requirements - aviation operations must comply with applicable CASA, federal and state-based legislation. A control based on a legal requirement must always be considered 'reasonably practicable'.

- Expert judgement - a proposed control should be considered reasonably practicable if an appropriate group of experts have established that it has a clear safety benefit and the costs associated with its introduction are considered reasonable.
- Cost-benefit analysis - if expert judgement or contemporary good practice do not provide clear evidence that a specific control or group of controls are reasonably practicable, a cost-benefit analysis may be necessary. This establishes whether the cost of implementing a specific control is grossly disproportionate to its safety benefit.
- Industry good practice - if a proposed control represents current, relevant and established good practice, it can be considered reasonably practicable. For example, the control:
 - o complies with aviation industry standards, rules, or procedures
 - o is a practice of other operators that are similar in scale and operation
 - o is established and widely implemented in another industry sector
 - o matches other countries' legislated enforcement of the practice
 - o is proven to have demonstrably improved safety or can be implemented without significant modification or cost.

Note: A risk rating may be within the extreme category, but still be as low as reasonably practicable. In this situation, CASA expects a detailed treatment plan be presented and used to control the risk.

C.1.7 Hierarchy of control

C.1.7.1 A standard approach to the treatment of risk is to utilise the Hierarchy of Control method. This simple procedure assists in ranking the best and most appropriate method of mitigating the risks that have been identified. The prioritisation of the risk mitigation begins with the most effective method and proceeds to the least effective method available. It is more appropriate to control the risk at the upper level of the hierarchy of control, however, it is not always possible to use the highest level of control. As a result, a lower level of control must be assessed or used to control the risks.

C.1.7.2 An example of how the hierarchy of control can be utilised is as follows:

- Eliminate Hazard – remove the hazard completely (e.g., Hazard: Spectators breaching the display aircraft parking area during the display. Control: Unable to eliminate the hazard - proceed to next level of control).
- Substitute – replace whatever it is that produces the hazard – (e.g., Hazard: Spectators breaching the display aircraft parking area during the display. Control: Unable to find a substitution to control the hazard - proceed to next level of control).
- Engineer a control method – find a solution that isolates people from the hazard (e.g., Hazard: Spectators breaching the display aircraft parking area during the display. Control: Erect secure and robust fencing).
- Administer the Hazard – provide training and education or signage to ensure knowledge of the hazard (e.g., Hazard: Spectators breaching the display aircraft parking area during the display. Control: Erect highly visible signage and ensure security staff are onsite to prevent access by unauthorised persons).
- Personal Protection Equipment (PPE) – use safety clothing and/or equipment to reduce the consequences of the hazard (e.g., Hazard: Spectators breaching the

display aircraft parking area during the display. Control: Unable to use PPE methods to control the hazards).

- C.1.7.3 During the risk assessment process, and for the above example, it is beneficial to examine preventative mitigation strategies as well as the operational response (reactive strategies) should a particular risk occur (e.g., Risk: Spectators breaching the display aircraft parking area during the display. Preventative: Fencing and Security. Responsive: Security staff in display aircraft parking area equipped with Air-band Radio on Ground frequency for immediate contact with PIC).

C.1.8 Common risks

- C.1.8.1 To assist with the preparation of the risk assessment, CASA has provided the following list of common air display risks that may need to be assessed and mitigated prior to the issue of the display approval:

- pilots operating in breach of the brief
- pilots flying within the 200 m display axis limit due to poor visibility of the display axis while in flight
- display not conducted in accordance with the approval
- adverse weather conditions
- lack of appropriate refuelling facilities or procedures
- arrival of unexpected aircraft during display
- mechanical failure of aircraft during display
- loss of control of aircraft due to fatigue/special disorientation etc.
- wind speed and direction leading to display pilot breaking the 200 m display axis limit, due to drift while airborne
- bird strike at low level during display.

Note: While the above list of risks is some of the common risks, it is not a conclusive list of all risks associated with an air display.

- C.1.8.2 A sound approach for determining which risks to address is to consider the major and most likely risks, with particular focus being on the risks to uninformed participants (i.e.: pilots are aware of risks involved with the manoeuvres that they conduct during the flight. However, spectators may not be aware of the level of risk that they are being exposed to during the display and, as a result, appropriate and effective risk mitigation is required to reduce their exposure to the risks).

C.2 Risk assessment procedure

- C.2.1.1 The following points are an example of how to conduct a risk assessment procedure.

- Identify the hazard (e.g., Display pilot issues).
- Identify the risk (e.g., controlled flight into terrain (CFIT) caused by pilot's loss of situational awareness).
- Identify consequences (e.g., possible injury or loss of life of the pilot and/or other persons, and major damage or destruction of the aircraft).
- Identify the likelihood that this may occur should no mitigation strategies be used (e.g., pilot not appropriately trained, endorsed, experienced or currency/recency standards not maintained). Using the 'Likelihood table' in Figure 4 of this Appendix

(the table identified with the column headings Value, Likelihood, Meaning), select the appropriate value. For the example risk identified in number 2 of this procedure, there is a chance that this may happen once in a 12-month period so value of 3 should be selected).

- Identify the consequence rating. This is found by using the consequences that have been determined because of the risk that has been identified. Using the Consequence Table in Figure 4 of this Appendix (column headings being Value, Consequence, Meaning), select the appropriate value. For the example risk used in this procedure, the consequence of a CFIT is serious injury/death and destruction of the aircraft. Therefore, it is evident that the meaning contained in the Severe category is appropriate, and value 5 should be inserted into the Consequence column in the risk assessment.
- Total the likelihood and consequence values to arrive at the risk rating (e.g., $3+5=8$). This risk level, and what is required, can be found in the coloured table of Figure 4 of this Appendix. Any risk rating greater than 8 is deemed to be an 'Extreme Risk' of which the outcome is 'Detailed treatment plan and constant monitoring required'.

Note: Refer to the Figure 5 of this Appendix for information on Residual Risk.

- Devise the risk treatment (mitigation) strategy. For the example risk used in this procedure, the risk cannot be eliminated, substituted, or engineered so an administration solution is required; the Pilot must therefore be properly, trained, qualified, hold the appropriate aircraft endorsements and have the required currency/recency requirements.
- Identify the residual likelihood rating. For the example used in this procedure, using only pilots who have the appropriate qualifications etc. will reduce the likelihood down from 'Once in the next 12 months' to 'Once in the next 10 years - only in exceptional circumstances' which has a value of 1.
- Identify the residual consequence rating. For the example used in this procedure, should the required pilot qualifications not prevent the CFIT, then the outcome will remain the same so there will not be any reduction in the consequence rating of 5.
- Total the residual likelihood and residual consequence to arrive at the residual risk rating (e.g., $1+5=6$). Use the coloured table in Figure 5 of this Appendix to determine the residual risk level. For the example risk used in this procedure, the residual risk level is 6 - 'High Risk' which requires 'High level treatment and monitoring', however, there is nothing more that can be done to reduce this particular risk any further and therefore the risk is as low as reasonably practicable.

C.3 Sample risk assessment

Risk No	Description of Hazard	Description of Risk	Consequence	Likelihood	Consequence	Risk Level	Risk Treatment Strategy	Residual Likelihood	Residual Consequence	Residual Risk
1	Display Flying Operations	CFIT - Pilot Loss of SA	Injury, loss of life (pilot), destruction of aircraft.	3	5	8	Pilot must be trained and properly qualified and hold necessary aircraft endorsements.	1	5	6
2		Airspace incursion								
3		Unauthorised flight over populous area/public gathering								
4		UCFIT - GLOC								
5		CFIT - Crash into Spectators								
6		Pilots operating in breach of the brief								
7		Insufficient deconfliction plan - Formation collision								
8		Handling errors - Formation collision								
9		Aircrew fatigue								

10		Pilot distractions/pressure (both perceived and real) and loss of control of aircraft								
11		Display Axis incursion by Pilot								
12		Wind speed and direction leading to display pilot breaking the 200m display axis limit due to drift while airborne								
13		Medical emergency - Pilot								
14		Use of Recreational/Sport aircraft in Display - Certification/airworthiness/approvals								
15		Display brief conducted inadequately								
16		Display brief conducted to all participants								

17	Ground Ops	Display/joy flight/adventure flight aircraft hitting person on ground while taxiing	Death or permanent disability or ill health and damage to aircraft and infrastructure.	5	4	9	All flight crew to attend daily flight briefing. Flight crew to have location plan. All commercial operators to maintain pax log. All pax to be informed of airside risks and escorted by designated flight crew. All operators to be familiar with airside requirements. Temp fencing separating all active /non-active areas. Signage identifying live prop areas. Marshals patrolling fencing. Chief Marshal aware of aircraft movement's airside. PA Announcements to ensure awareness of restricted areas. No Alcohol sold on site and site is alcohol-free. Display of restricted areas at strategic points around Display areas.	1	5	6
18	Uninvolved third-party persons	Persons not directly associated with the Air Display being put at risk due to proximity of their residence to the display axis	Death or serious injury and damage to aircraft and infrastructure.	4	5	9	Invite the property owner to the Air Display and provide free tickets to encourage their attendance. If they choose to remain in their house then they must be warned of the increased risk being presented and ensure that they are aware of the possible outcomes.	3	5	8
19		Spectator/ Non participant entering live prop area								
20		Comms failure - Ground/Unicom	Pilot unable to be contacted in the event of a "knock it off" call being made or in the event of an unannounced aircraft arrival during the display.							

21		Spectator's aircraft hitting person in parking area/camping area							
22		Aircraft fire during refuelling.							
23	Unicom Operations	Arrival of unexpected/unannounced aircraft during display	Aircraft collision, injury, loss of life, destruction of aircraft.				CTAF is monitored on ground. Ground will manage the incoming aircraft before incursion. In case of incursion, cease display until threat has been managed or has vacated airspace.		
24		Post and Pre-Display arrivals and departures							
25		Acceptable rest breaks and crew relief during display and pre-post display arrivals and departures							
26		Unicom Radio failure							
27	Animal Hazard	Low-level Bird strike	Catastrophic damage to aircraft and infrastructure. Personal harm.	3	5	8	Early morning site drive by Chief Marshal or other to assess and to chase birds off runway area. Continual ground monitoring during display to advise and alert aircraft to any potential hazards.	1	5
28		Animal Hazard on airfield (Kangaroos, dogs etc.)				0			0
29	Weather/Location	Degradation of the flying conditions leads to pilot flying outside the limits of the Display Approval.	Death or permanent disability or ill health and damage to aircraft and infrastructure.	3	5	8	All flight crew to attend daily flight briefing. Weather conditions (forecast and current) to be displayed at briefing. Weather conditions monitored via computer. Activities suspended/cancelled if required.	2	5

30		Wet weather affecting runway surface								
31		Wet weather affecting taxiway surfaces								
32	Maintenance/Mechanical	Major Aircraft Malfunction (e.g. Landing gear malfunction)	Significant damage or serious injury may occur to Pilot.	2	4	6	Pilot to review critical emergency action procedures prior to display, pilot to be current in practicing EFATO procedures, aircraft to have completed all recent servicing requirements. Partial engine failures - divert to Archerfield or Amberley). Aircraft to comply with MR requirements.	1	4	5
33		Defective flight instruments								
34		Engine Failure - Mechanical								
35		Engine Failure - Fuel Starvation								
36		Aircraft being operated in breach of its CofA								
37		Comms failure - Aircraft								
38	Organisation and Controls	Display not conducted in accordance with requirements								
39		Briefing materials not available to display pilots								
40		Reduced operational control due to Display Coordinator /organiser being in the display								

41	Ground Effects	Pyrotechnics causing damage to aircraft conducting display	Aircraft damage leading to loss of control and impact within crowd lines, multiple fatalities.	2	5	7	Used by approved person under Department of mines and industry, same person is responsible for the firing of the explosives in close consultation with pilot of aircraft. Pyro staff to attend pilot briefing and have two way communications on the site during display. Direction of run in for air display will limit an effected aircraft from entering crowd lines.	1	5	6
41		Pyrotechnics causing injury or death to spectators								
42		Pyrotechnics causing damage to property/ aircraft on the ground								

C.4 Risk assessment template

Risk No	Description of Hazard	Description of Risk	Consequence	Likelihood	Consequence	Risk Level	Risk Treatment Strategy	Residual Likelihood	Residual Consequence	Residual Risk
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

C.5 Initial risk rating

Air Display Risk Assessment

Version: 1

Date of next Review:

Date: 06/2/2017

Prepared by: Will Doitall

Risk No.	Description of Hazard	Description of Risk	Consequence	Likelihood	Consequence	Risk Level	Risk Treatment Strategy	Residual Likelihood	Residual Consequence	Residual Risk
1	Display Pilot Issues	CFIT - Pilot loss of SA	Injury, loss of life (pilot), destruction of aircraft.	3	5	8	Pilot must be trained and properly qualified and hold necessary aircraft endorsements.	1	5	6

Value	Consequence	Meaning
5	Severe	Multiple fatalities, equipment destroyed
4	Major	Large reduction in safety margins, serious injury, major equipment damage
3	Moderate	Significant reduction in safety margins, serious incident, injury to persons
2	Minor	Nuisance, operating limitations, use of emergency procedures, minor incident
1	Negligible	Few consequences

		Consequence					
		1	2	3	4	5	
Likelihood	5	Almost Certain	6	7	8	9	10
	4	Likely	5	6	7	8	9
	3	Possible	4	5	6	7	8
	2	Unlikely	3	4	5	6	7
	1	Rare	2	3	4	5	6

>8	Extreme Risk	Detailed treatment plan and constant monitoring required
6-7	High Risk	Requires high level treatment and monitoring
4-5	Medium Risk	Requires moderate planning and monitoring as appropriate
<3	Low Risk	Managed by normal operational procedures

Value	Likelihood	Meaning
5	Almost Certain	Imminent - expected to occur in most circumstances
4	Likely	Once in the next month - will occur in most circumstances
3	Possible	Once in the next 12 months
2	Unlikely	Once in the next 1-5 years - could occur at some time
1	Rare	Once in the next 10 years - only in exceptional circumstances

C.6 Residual Risk Rating

Air Display Risk Assessment

Version: 1

Date of next Review:

Date: 06/2/2017

Prepared by: Will Doitall

Risk No.	Description of Hazard	Description of Risk	Consequence	Likelihood	Consequence	Risk Level	Risk Treatment Strategy	Residual Likelihood	Residual Consequence	Residual Risk
1	Display Pilot Issues	CFIT - Pilot Loss of SA	Injury, loss of life (pilot), destruction of aircraft.	3	5	8	Pilot must be trained and properly qualified and hold necessary aircraft endorsements.	1	5	6

Value	Consequence	Meaning
5	Severe	Multiple fatalities, equipment destroyed
4	Major	Large reduction in safety margins, serious injury, major equipment damage
3	Moderate	Significant reduction in safety margins, serious incident, injury to persons
2	Minor	Nuisance, operating limitations, use of emergency procedures, minor incident
1	Negligible	Few consequences

		Consequence					
		1	2	3	4	5	
Likelihood	5	Almost Certain	6	7	8	9	10
	4	Likely	5	6	7	8	9
	3	Possible	4	5	6	7	8
	2	Unlikely	3	4	5	6	7
	1	Rare	2	3	4	5	6

Value	Likelihood	Meaning
5	Almost Certain	Imminent - expected to occur in most circumstances
4	Likely	Once in the next month - will occur in most circumstances
3	Possible	Once in the next 12 months
2	Unlikely	Once in the next 1-5 years - could occur at some time
1	Rare	Once in the next 10 years - only in exceptional circumstances

>8	Extreme Risk	Detailed treatment plan and constant monitoring required
6-7	High Risk	Requires high level treatment and monitoring
4-5	Medium Risk	Requires moderate planning and monitoring as appropriate
<3	Low Risk	Managed by normal operational procedures

C.7 Risk matrix

			Consequence				
			1	2	3	4	5
Likelihood	5	Almost Certain	6	7	8	9	10
	4	Likely	5	6	7	8	9
	3	Possible	4	5	6	7	8
	2	Unlikely	3	4	5	6	7
	1	Rare	2	3	4	5	6

>8	Extreme Risk	Detailed treatment plan and constant monitoring required
6-7	High Risk	Requires high level treatment and monitoring
4-5	Medium Risk	Requires moderate planning and monitoring as appropriate
<3	Low Risk	Managed by normal operational procedures

Value	Likelihood	Meaning
5	Almost Certain	Imminent - expected to occur in most circumstances
4	Likely	Once in the next month - will occur in most circumstances
3	Possible	Once in the next 12 months
2	Unlikely	Once in the next 1-5 years - could occur at some time
1	Rare	Once in the next 10 years - only in exceptional circumstances

Value	Consequence	Meaning
5	Severe	Multiple fatalities, equipment destroyed
4	Major	Large reduction in safety margins, serious injury, major equipment damage
3	Moderate	Significant reduction in safety margins, serious incident, injury to persons
2	Minor	Nuisance, operating limitations, use of emergency procedures, minor incident
1	Negligible	Few consequences

Appendix D

Display lines and flight display area

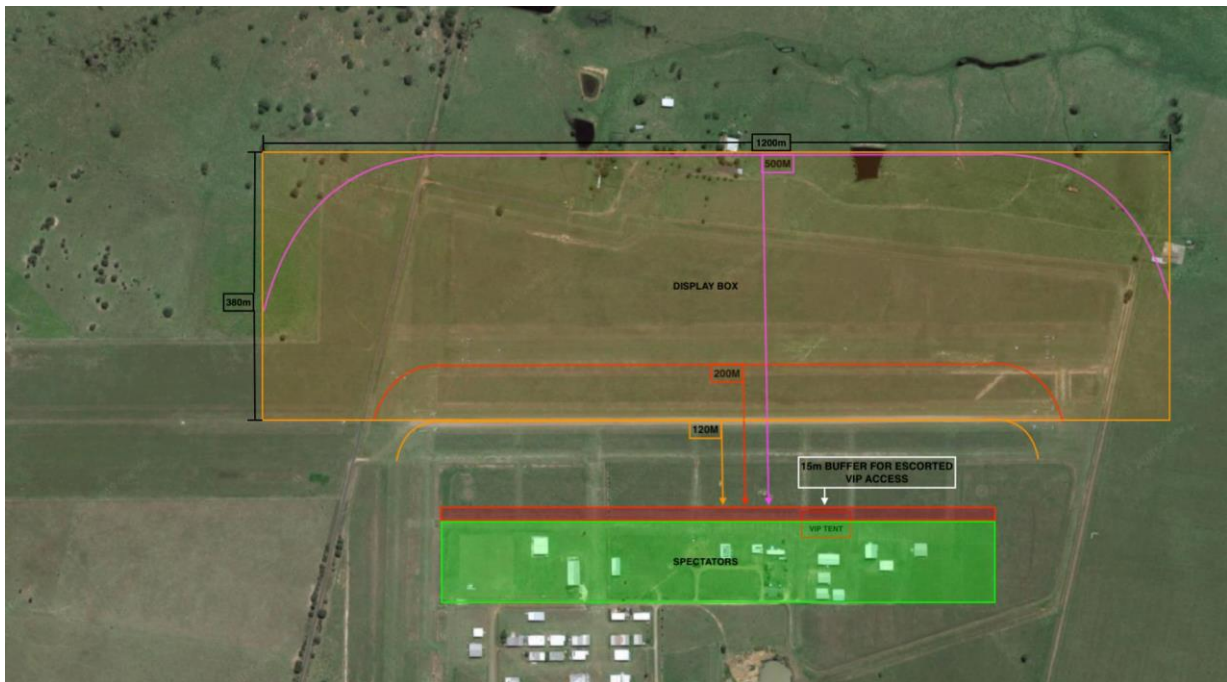


Figure 1: Example of display lines and markings

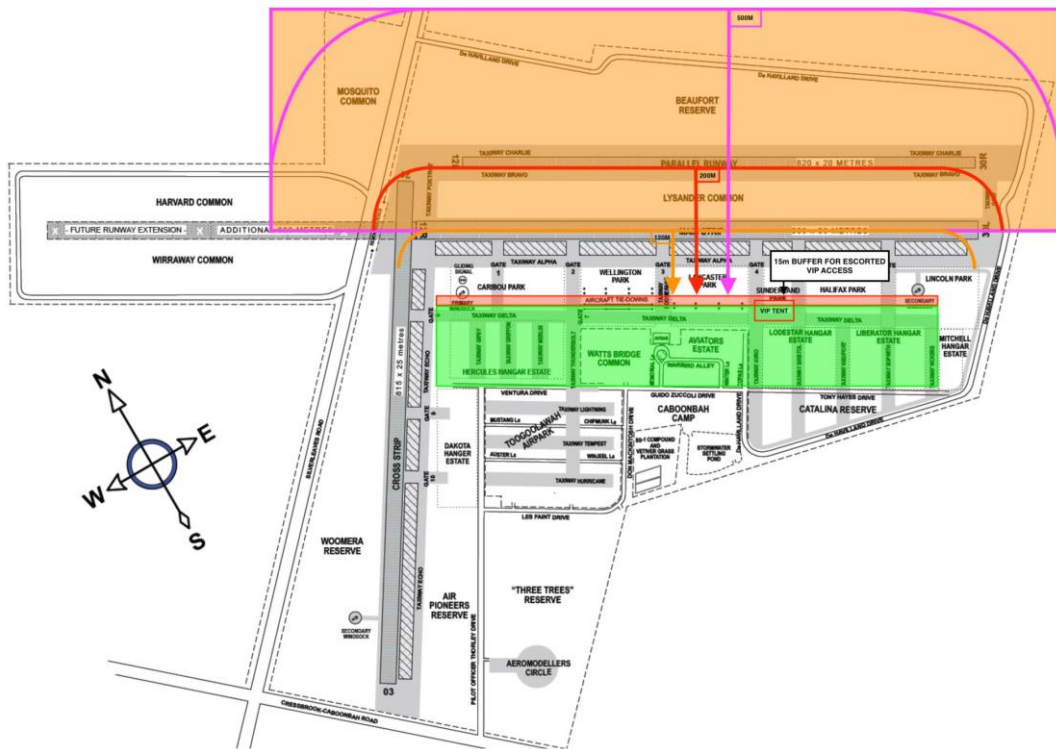


Figure 2: Example of display lines and markings

Appendix E

Written or Verbal brief

E.1 Written brief or Verbal

E.1.1 The contents of the written or Verbal brief will vary with the scope and complexity of the event itself. The brief should include, as a minimum, the following points:

- the program of events
- current and forecast weather conditions
- display area and other airspace boundaries
- ATS
- flight paths
- avoidance of noise sensitive areas
- holding points and holding heights
- runway(s), taxiways, and circuit procedures
- radio frequencies (including any dedicated air display frequency, if allocated)
- timings
- map or sketch showing crowd lines, display axis and minimum separation from spectators. If more than one display axis exists, these should all be shown and clearly marked
- a map of the aerodrome showing general parking areas, marshalling areas and static display areas
- minimum heights and weather minima
- procedures for cancellation or variation of the program
- aircraft parking, refuelling arrangements and movement areas
- procedures in the event of movements of aircraft not participating in the air display
- arrangements for joy flights, adventure flights, trial introductory flights and visiting aircraft
- emergency procedures and arrangements particularly ‘STOP DISPLAY’ procedures
- details of place and time where the formal pre-display briefing will be conducted at the event.

E.1.2 In addition to the above topics, the following specific points should be included in any brief:

- the need for the PIC to ensure that the aircraft is operated in accordance with its certificate of airworthiness or permit to fly
- pilots must ensure that they meet recency and competency requirements, including relevant flight review requirements
- for aerobatic displays, when AC 61-18¹¹ is released, the display organiser should include any relevant recommendations in that document.
- only manoeuvres that are known and have been practiced, including bad weather displays, are to be flown
- aircraft positioning must always be such that, in the event of an engine failure or other airborne emergency necessitating a forced landing, a forced landing will be outside of the crowd area.

¹¹ At the time of publication of this document, AC 61-18 is under development. Once published, it will be available from the CASA website.

Appendix F

Emergency response plan

F.1 Guide for developing an emergency response plan

F.1.1 This guide has been prepared to assist with the preparation of an ERP for the conduct of air displays.

F.1.2 Aim

F.1.2.1 The aim of an ERP is to provide a structured and comprehensive plan and list of instructions to be followed in the event of an accident, incident, or occurrence at an air display.

F.1.3 Purpose

F.1.3.1 The purpose of an effective ERP is to:

- provide focus and structure that can be easily followed in stressful situations and assign and/or delegate responsibilities
- save and protect lives through timely, effective and coordinated response and recovery
- manage the risk of further injury to persons and damage or loss of property
- inform the appropriate persons and organisations in a timely manner to manage the external components of the emergency
- record and preserve data/information and identify witnesses and participants for investigation purposes
- recover and restore operations.
- Ensure consultation with aerodrome operators about any ERP that is relevant to the aerodrome that the display is being conducted at and that the ERP's integrate. (This means ensuring that the display ERP doesn't have any conflicting actions with the aerodrome ERP, for example where emergency response vehicles access and egress from the area).

F.1.4 When should an ERP be activated?

F.1.4.1 The ERP should be activated whenever any of the following occur:

- an accident or serious incident
- a fatality or serious injury
- an event, or potential event, identified in the risk management plan as catastrophic
- a near miss
- a regulatory or statutory breach occurs
- if physical or mental wellbeing of other persons is affected.

F.1.5 What should occur when the ERP is activated?

F.1.5.1 The instructions in the ERP will depend on the activity and risks/threats that are present, however the following should be considered as the priority actions:

- treat injury
- call for assistance
- stop all associated activity (if applicable)
- advise relevant responsible persons
- advise relevant authority

- collect data and details and make records of actions taken
- report to relevant authority.

F.1.6 Who is responsible for activating the ERP?

F.1.6.1 The ERP can be activated by any person who holds a responsible position for the safety or conduct of the activity which the ERP is related, this may be:

- the display organiser
- the display coordinator
- CASA
- a local authority (Police, Fire, EMS).

F.1.6.2 However, the responsibility for the ERP should be immediately assumed by the display organiser.

F.1.7 Handover of responsibilities to authorities

F.1.7.1 The ERP should detail when and what should be handed over to the relevant local authority, such as police and fire authorities. The ERP should detail who is responsible for the following:

- information to the general public
- social media policy
- information to relatives and next of kin (usually police only)
- information to relevant local authority (police and fire)
- information to ATSB, CASA, transport security
- relevant local government authority (fireworks, pollution, environment).

F.1.8 Return to normal operations

F.1.8.1 The ERP should detail who has the authority to return to normal operations and under what conditions that should occur. This decision depends on the occurrence and the severity, but should consider the following:

- safety
- wellbeing
- reputation.

F.1.9 Post emergency actions

F.1.9.1 Post ERP actions generally relate to reporting and clean up if necessary. Dependant on the occurrence, this may include:

- quarantine of documents, data and wreckage
- identifying witnesses
- making official reports
- dealing with media/public comments
- counselling and mental health considerations.

F.1.10 Review and testing of the ERP

F.1.10.1 The ERP should be reviewed on a regular basis for correct contact information and details. The ERP should be tested in either a desktop or mock emergency exercise as this will highlight deficiencies in the plan and identify areas for improvement.

F.1.11 Dealing with media and making official comments

F.1.11.1 It is recommended that a media coordinator is appointed to deal with any public comments or media questions. While not critical to safety, the wrong thing said to the media or public can harm to reputations. The media coordinator should:

- have pre prepared statements or announcements covering relevant occurrences
- be able to communicate calmly, rationally and appropriately
- have a direct line of communication with the display organiser
- not release any critical, personal or private information
- have a social media policy
- be aware that information and video can be in the public domain and the media and social media before emergency services arrive.

F.2 Sample emergency response plan

F.2.1 Multiple ERP's can be prepared for various levels of occurrences, or a single ERP can be prepared and used for minor events.

Event: The Aussie Air Show 29 Feb 2018

Key Personnel: Display Organiser Joe Bloggs
 Display Coordinator Fred Smith
 Media Coordinator Brent Nerks

ACCIDENT OR SERIOUS INCIDENT

This plan is to be implemented by the Display Organiser immediately after the occurrence of an accident or serious incident

Phase 1 Actions

Telephone numbers checked current,
 date ____/____/____

Action	Responsibility	Details
Call EMS	Police Fire Ambulance	000 000 000 and onsite
Advise Display Organiser		Mob - 1234 234 567
Aircraft missing	AUSAR	1800 815 257
STOP DISPLAY call	Display Coordinator	VHF Radio CTAF 126.70
Public announcements	Media Coordinator	Prepared statements
Public and helpers		Prevent access, move away from dangerous areas wreckage, orderly departure

Phase 2 Actions

Action	Responsibility	Details
Notify ATSB		1800 011 034
Notify CASA		131 757
Consider		Dangerous Goods, Pyrotechnics, PPE, Hazardous chemicals/fumes/smoke

Action	Responsibility	Details
Report	Police/scene Commander	Xxx xxx Provide copies of details to relevant authority
Record		--- Start making records of event, use timeline type document, appoint person to do
Identify and quarantine		Documents Data Wreckage Witnesses Radio recordings
Notify	CFI/Chief Pilot/Owner/NOK Note: Do not notify NOK in the event of a fatality, pass info to police	

Phase 3 Actions

Action	Responsibility	Details
Notify counselling service		Xxx xxx Crisis care, bereavement, mental health, suicide prevention, trauma counselling
Review		Documents and records, ensure accuracy
Review		ERP ensure all actions taken
Brief		Key personnel, review tasks completed, PA announcements continuing or cease
Return to Operations		Consider, meet with key personnel, who has authority to make decision
Media, public comments		Review plan, prepared statements, general info only

Image 1: Sample emergency response plan

Appendix G

Air display practice

G.1 Air display practice

- G.1.1 Regulation 91.267 of CASR (Minimum height rules—other areas) applies if an aircraft is flown other than over a populous area or public gathering.
- G.1.2 This Appendix has been written to assist pilots who wish to practice for air displays and to ensure compliance with the new legislation.
- G.1.3 If the PIC meets all of the requirements of regulation 91.267(3)(h) of CASR then the aircraft can be flown below 500 ft above the highest feature or obstacle within a horizontal radius of 300 m of the point on the ground or water immediately below the aircraft (regulation 91.267(2)(a) of CASR).
- G.1.4 The requirements of regulation 91.267(3)(h) of CASR are:
- the PIC of the aircraft is authorised under Part 61, or holds an approval under regulation 91.045, to fly the aircraft below the height mentioned in paragraph (2)(a) of regulation 91.267 of CASR (as described above)
 - the PIC of the aircraft conducts a risk assessment of the area to be flown over
 - the point on the ground or water vertically below the aircraft is not within 150 m of a person, vessel, vehicle or structure or of livestock.
- G.1.5 The risk assessment in Appendix C of this AC can be used to satisfy these requirements.
- G.1.6 Low-level practice is also covered by regulation 91.267 of CASR, but the following should be considered:
- The current definition of a 'Low Level Operation' in regulation 61.010 of CASR limits the applicability of low flying approvals for the purpose of air displays, practice for air displays or competition events. CASA has issued an exemption (CASA EX07/24 — Low-level Operations (Air Displays and Aerobatic Manoeuvres)) which allows pilots who do not hold a rating or flight activity endorsement authorising low flying to undertake that activity without contravening the intent of the definition 'Low Level Operation'.
 - Regulations 91.630 and 91.640 of CASR require the pilot to maintain listening watch or broadcast on the appropriate frequencies. CASA will need to issue a general exemption against the regulations to monitor and broadcast on discrete radio frequencies, as it may not be possible or practicable during the conduct of an air display practice.
 - To permit operations at non-controlled aerodromes, CASA will need to issue a general exemption against the following regulations in subdivision 91.D.4.6 of CASR—Avoiding collisions at or in the vicinity of aerodromes:
 - o regulation 91.375(2)(a) of CASR - this regulation may affect aircraft flying in formation as there is a requirement for each pilot to lookout for other aircraft.
 - o regulation 91.375(2)(c) of CASR - this regulation may affect aircraft conducting displays or practice as there is a requirement to avoid the circuit pattern at the aerodrome
 - o regulation 91.390(1)(b) of CASR - this regulation would affect displays of unlimited aerobatics below 500 ft commencing immediately after take-off.

- o to avoid any doubt, regulation 91.385(1) of CASR is also deemed to be met if there is an entry in the authorised aeronautical information (ERSA or NOTAM) for the conduct of manoeuvres or turns contrary to the normal circuit direction.
- o For operations at controlled aerodromes, regulation 91.405(5) of CASR allows ATS to permit or instruct aircraft to engage in conduct that would otherwise result in the contravention of that regulation. The display organiser must receive permission from the relevant ATS unit to conduct the display in that airspace. It is also good practice to have a NOTAM raised for the event in this case.

Appendix H

Significant and non-significant change process for ongoing approvals

H.1 Significant and non-significant change process for ongoing approvals

- H.1.1 When issuing an ongoing approval, CASA expects similar change management processes to those used by Air Transport and Flying Training organisations.
- H.1.2 A key component of change management is a documented process of change and document control procedures, such as version control. Multi-part AC 119-07 and AC 138-03 provides guidance on the management of change for aviation organisations.
- H.1.3 It is expected that a significant change to the exposition would result in a new version (e.g., version 2.0), which would need to be assessed by CASA and require a new approval to be issued. Non-Significant changes still need to be submitted to CASA but would not necessarily require the entire exposition to be submitted. Only the pages detailing the non-significant changes would need to be submitted.
- H.1.4 If an ongoing approval (Legislative Instrument) is required, the exposition must define significant and non-significant changes and include a process for advising CASA of such changes.
- H.1.5 The following list provides examples of significant changes that would be described in the exposition:
- any change to the location at which an air display is conducted
 - any addition of new air display locations
 - any change of key personnel mentioned in the approval
 - any change to a person authorised to carry out the responsibilities of key personnel when the position holder is absent from the position or cannot carry out the responsibilities of the position
 - any change to the formal reporting lines of a managerial or operational position with safety functions and responsibilities that reports directly to any of the key personnel
 - any change to the operator's process for making changes that relate to the safe conduct and management of air displays
 - any change to the kinds of air display events that are listed in the exposition
 - any addition of new display events
 - any changes to the list of pilots operating under the exposition
 - any addition of pilots to the exposition
 - any changes to the types and models of aeroplanes or rotorcraft used in an air display event (but not including ceasing to operate a type or model)
 - any change in relation to any of the following that does not maintain or improve, or is not likely to maintain or improve, aviation safety:
 - o the plans, processes, procedures, programs and systems for the safe conduct and management of an air display
 - o a change to the risk profile that reduces, or is not likely to maintain, the safety of the activity
 - o the qualifications, experience and responsibilities required by the exposition for any of the key personnel
 - o any other aeronautical or aviation safety related services described within the exposition by third parties
 - o a change in the weather minimums listed in the exposition

- o a change in the physical geographical landscape or construction in the vicinity of an already approved display location.

Note: This list of significant changes is not exhaustive. The exposition should describe all changes relevant to your operations.

H.1.6 A non-significant change is any change that is not listed above.

H.1.7 The flowchart at Figure 10 of this Appendix, which is from CASA Multi-part AC 119-07 and 138-03 —Management of change for aviation organisations, will assist air display organisers in describing change management within their exposition.

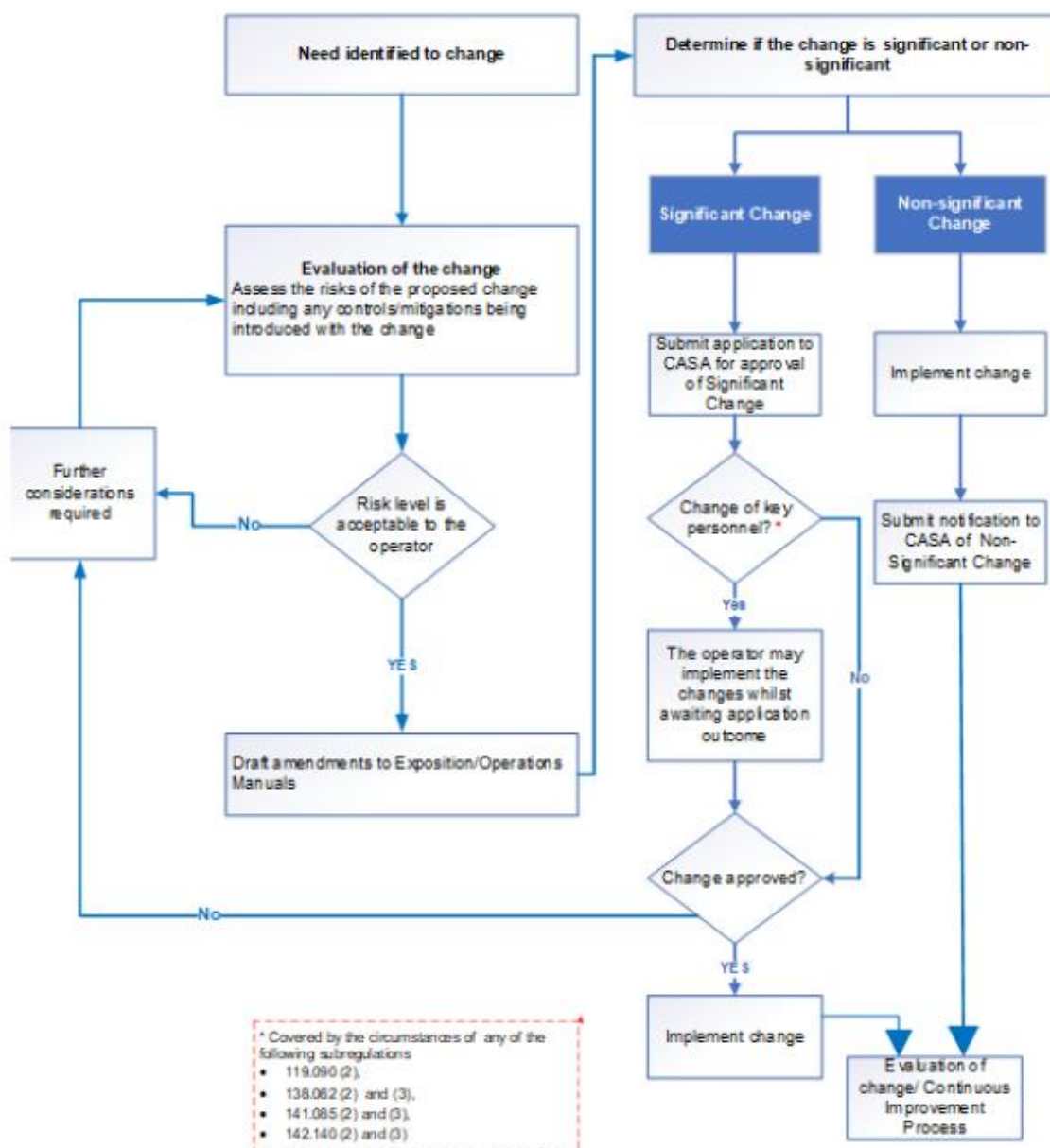


Figure 1: Management of change process

Appendix I

Display pilot and essential crew details sheet

I.1 Display pilot and essential crew details sheet

- I.1.1 Previously, Form 697 was used to issue individual pilot display approvals. This form has been revoked as the effect of subregulation 91.180(2) of CASR is that pilots are no longer required to hold individual approvals to perform at an air display.
- I.1.2 However, the display organiser is still required to review details of each pilot and their display activity to ensure that they are suitable. This Appendix has been created to capture these details as an example of a proforma that can be used by an organiser to record the relevant information to make an appropriate decision on the participation of a pilot and aircraft in a display.

1. Display Pilot Details Full Name: ARN: Contact Number: Email Address: Is the pilot acting as the Display Organiser and/or the Display Coordinator? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes must include details in the risk assessment provided to CASA for the Air Display Application.	5. Medical Details What are the expiry dates? Class 1 or 2 expiry date (DD/MM/YYYY) <div style="border: 1px solid black; width: 150px; height: 20px; margin: 5px auto; text-align: center;">/ /</div>
2. Crew Details Does the aircraft you are operating require multiple crews in accordance with the AFM/COA? (NOTE: Only crew that are required to operate the aircraft as per the AFM/COA are permitted to act as crew members during an Air Display. Attach applicable pages if this is required) <input type="checkbox"/> No - Go to question 4 <input type="checkbox"/> Yes - Go to question 3	6. Display Details What is the name of the event as it would appear in the programme of events? <div style="border: 1px solid black; width: 150px; height: 20px; margin: 5px auto;"></div> What type of display will you be conducting? <input type="checkbox"/> Fly pasts <input type="checkbox"/> Handling display <input type="checkbox"/> Aerobatics <input type="checkbox"/> Formation <input type="checkbox"/> Formation aerobatics <input type="checkbox"/> Wing walking <input type="checkbox"/> Parachuting (Aircraft Component) <input type="checkbox"/> Free or fixed balloon <input type="checkbox"/> Banner towing <input type="checkbox"/> Gliding <input type="checkbox"/> Pylon racing Other
3. What are the crew members details? Second Crew Member Full Name: ARN: What are the crew duties or roles of this person? <div style="border: 1px solid black; width: 150px; height: 20px; margin: 5px auto;"></div> (Attach additional crew pages if required)	<div style="border: 1px solid black; width: 150px; height: 80px; margin: 5px auto;"></div> Attach Display Diagram/Aresti Chart
4. Flight Crew licence, ratings, flight activity endorsements. Do you hold the applicable licence, ratings, or flight activity endorsements to conduct the planned display? Yes <input type="checkbox"/> No <input type="checkbox"/>	

Image 1: Display pilot and essential crew details sheet

<p>7. Display Aircraft Details</p> <p>What is the Display Aircraft type?</p> <div style="border: 1px solid black; height: 25px; width: 100%; margin-bottom: 10px;"></div> <p>Aircraft Registration(s)</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="padding: 5px;">Aircraft registration</th> <th style="padding: 5px;">Aircraft Type</th> <th style="padding: 5px;">Total Flying Hours on Type</th> </tr> </thead> <tbody> <tr><td style="height: 20px;"></td><td></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td><td></td></tr> </tbody> </table> <p>For aircraft that are not in the utility or normal category attach a copy of the Certificate of Airworthiness (CoA) highlighting any limitations or operational restrictions placed on the aircraft by the CoA</p>	Aircraft registration	Aircraft Type	Total Flying Hours on Type													<p>9. What is your recent experience relevant to the proposed display and aircraft?</p> <div style="border: 1px solid black; height: 100px; width: 100%; margin-bottom: 10px;"></div> <p>10. How many displays is the Display Pilot participating in at this event?</p> <div style="border: 1px solid black; height: 25px; width: 100%; margin-bottom: 10px;"></div> <p>11. Minimum weather conditions required for proposed display</p> <p>No display may take place in less than Visual Meteorological conditions (Less than VMC)</p> <p>Cloud Height (feet)</p> <div style="border: 1px solid black; height: 25px; width: 100%; margin-bottom: 10px;"></div> <p>Visibility (meters)</p> <div style="border: 1px solid black; height: 25px; width: 100%; margin-bottom: 10px;"></div>
Aircraft registration	Aircraft Type	Total Flying Hours on Type														
<p>8. Previous Display Experience</p> <p>What is your previous display experience</p> <div style="border: 1px solid black; height: 150px; width: 100%; margin-top: 10px;"></div>																

<p>12. Display Pilot Checklist</p> <p>The display pilot must provide to the Display Organiser the following:</p> <p><input type="checkbox"/> Dimensions</p> <p><input type="checkbox"/> Diagram of display (<u>Aresti</u>)</p> <p><input type="checkbox"/> Vertical Limits</p> <p><input type="checkbox"/> Terrain</p> <p><input type="checkbox"/> Populated Areas</p> <p><input type="checkbox"/> Secondary spectators</p> <p><input type="checkbox"/> Minimum weather conditions and poor Weather plan</p> <p><input type="checkbox"/> Density Altitude considerations</p> <p><input type="checkbox"/> Wind Velocity (e.g., on crowd breeze)</p> <p><input type="checkbox"/> Stop Display Criteria</p>	<p><input type="checkbox"/> Extra crew members justified and acceptable</p> <p><input type="checkbox"/> Crew members hold qualifications for the role.</p>
<p>13. Display Organiser Checklist</p> <p>To be completed in full after the document review by the display organiser. Document copies are to be recorded and kept by the display organiser.</p> <p><input type="checkbox"/> Pilot Crew Details checked</p> <p><input type="checkbox"/> Licence Checked</p> <p><input type="checkbox"/> Medical Checked</p> <p><input type="checkbox"/> Display Type Approved</p> <p><input type="checkbox"/> Pilot is Recent</p> <p><input type="checkbox"/> Diagrams and Plan Acceptable</p> <p><input type="checkbox"/> Display Area Suitable</p> <p><input type="checkbox"/> Display Instructions provided and reviewed?</p> <p><input type="checkbox"/> Checked against Risk assessment and Emergency Response Plan</p> <p><input type="checkbox"/> Relevant COA info for limited and experimental aircraft</p> <p><input type="checkbox"/> Insurance details</p>	<p>14. Declarations</p> <p>Pilot Declarations</p> <p>I am authorised to make this application and hold the role indicated below.</p> <p>All statements in this application are true and correct in every particular and I have read and understood all provisions of current Civil Aviation Legislation which are relevant to this application.</p> <p>I understand CASA will use these details in processing the relevant air display application and that it is my responsibility to ensure the details on this form are correct prior to lodgement.</p> <p>I consent to CASA using and disclosing my personal information in accordance with CASA Privacy Policy including exchanging the information with Commonwealth, <u>State</u> and territory government agencies.</p> <p>I have attached all required documentation specified in the checklists.</p> <p>Display Organiser Signature</p> <div style="border: 1px solid black; height: 30px; width: 100%;"></div> <p>Full Name:</p> <p>Date:</p> <p>Display Pilot Signature</p> <div style="border: 1px solid black; height: 30px; width: 100%;"></div> <p>Date:</p>