



General Information

Introduction

[Civil Aviation Act 1988](#)

The [Civil Aviation Act 1988](#), through the Civil Aviation Regulations (CARs) and Civil Aviation Orders (CAOs), provides the CASA with the power to regulate exhibitions of flying, commonly referred to as Air Displays, Flying Displays or Airshows, that involve civil aircraft, within Australia.

This guide provides guidance on the minimum safety and administrative procedures necessary to run such an event.

The information in this guide occasionally goes beyond statutory requirements, to allow experience gained by past Air Display Organisers to be passed to those new to the organisation of such an event.

[CAR 156](#)
[CAO 29.4](#)

This guide should be read in conjunction with [CAR 156](#) and [CAO 29.4](#), which stipulate the regulatory requirements for the conduct of Air Displays.

Nothing in this guide is intended to conflict with the CARs, CAOs or other legislation which, in case of doubt, must be regarded as overriding.

A list of addresses of organisations referred to in this guide is given at [Appendix A](#).

Throughout this guide, the singular includes the plural.



Legal Requirements

Definitions

Air Display

For the purposes of this guide, an *Air Display* means organised flying, including cross-country events, contests, exhibitions of flying or local flights made for the purpose of carrying passengers for hire or reward and performed at a public gathering.

Public Gathering

For the purposes of this guide, a *Public Gathering* means people assembled at a location on the basis of a general public invitation, with or without subscription or levy.

An Acrobatic Flight

Acrobatic Flight means manoeuvres intentionally performed by an aircraft involving an abrupt change in its attitude, an abnormal attitude or an abnormal variation in speed. Acrobatic manoeuvres include slow roles, aileron rolls, loops, stall turns or the application of more than +3.0 g or less than -1.0 g.

Formation Flight

Aircraft are considered to be flown in formation if they are flown in close proximity to each other and they operate as a single aircraft with regard to navigation, position reporting and control.



Civil Aviation Regulation 156

CAR 156 CAR 156 deals with flying over public gatherings.

CAR 156 requires that any aircraft flying over any regatta, race meeting or public gathering, except aircraft passing over such regatta, race meeting or public gathering in the course of normal navigation, shall:

- Obtain permission, in writing, from CASA
- Make such flight in accordance with any conditions placed on such a permission.

Civil Aviation Order 29.4

CAO 29.4 Section 29.4 of the CAOs deals with the conduct of civil Air Displays. CAO 29.4 states that an Air Display shall not be conducted without the written approval of the Director. This approval is now granted by CASA.

Approval is required for the display location and the program of events.

CAO 29.4 sets out specific conditions that must be met in order to conduct an Air Display.

CAO 29.4 requires an Air Display Organiser to be appointed to plan and conduct the Air Display..



Personnel

Officials and Committees

The responsibilities of personnel and committees are as given below.

Display Organiser

The organising body must appoint one person as the Display Organiser to assume overall responsibility.

Responsibility for particular aspects (such as site survey, air traffic services, provision of emergency services and conduct of flying activities) should only be allocated to people with the appropriate experience and, if applicable, licences.

The Display Organiser, in particular, needs to consider and, where appropriate, make arrangements for the following aspects:

Event Personnel

- The appointment of a Display Coordinator
- The appointment of a Flying Display Committee
- The appointment of officials
- Flight crew

Event Site and Display Management

- Site assessment
- Marking of the display axis
- Aircraft parking
- The siting and control of public enclosures
- Car parking
- Establishing minimum heights



- Confirming maximum speeds
- Stipulating weather minima
- Coordinating pyrotechnics and other ground special effects
- Pre-display briefing
- Document checks and display insurance
- Pilots' display programs (both normal and weather-restricted programs)
- Joy flights.

The responsibility of the Display Organiser is not necessarily be limited to the above items. This list, however, is a good place to start. Each of the above items is dealt with in detail in the section entitled [Site and Display Management](#) (which starts on page 8).

The Display Coordinator

Where the Air Display comprises a significant number of items, the person appointed to be the Display Organiser should have considerable aviation experience if he/she is also assuming the function of Display Coordinator. If the Display Organiser does not have this experience, he/she should appoint a suitably qualified person, preferably with display experience, as the Display Coordinator.

The Display Coordinator is responsible for:

- Flying discipline in general
- The compiling, approval and modification of individual flying routines
- The overall flying program
- The cancellation or modification of the flying program in the event of unsuitable weather or other such conditions.

The Display Coordinator is sometimes referred to as the Ringmaster because he/she controls the actual flying program.

It is strongly recommended that, before being appointed as a Display Coordinator, the Display Coordinator should have had the experience of being an Assistant Display Coordinator or being in a similar subordinate role in at least one Air Display of similar complexity.



The Display Committee

At a larger display, in addition to the Display Coordinator, the Display Organiser may select a small group of experienced people to act as a Display Committee. The Display Committee may be delegated tasks by the Display Organiser, based on the areas of expertise and experience of its members.

Officials

Experienced staff must be nominated as officials and detailed to:

- Supervise the marshalling and parking of aircraft and cars
- Operate any public address system
- Control messengers and any other staff deemed necessary.

It is usually possible to find persons competent to undertake such duties among the membership of a flying club or other suitable aviation organisation.

Generally, only persons experienced in flight-line ground-handling of aircraft should be used in the aircraft movement area.

All officials must be thoroughly briefed on the duties expected of them. They must be provided with some means of easy identification, such as armbands, coloured shirts or the like.

Flight Crew

Each participating flight crew member must hold:

- A valid flight crew licence which entitles the holder (pilot) to fly the type of aircraft which is to be displayed
- A current medical certificate.

CAR 2(7A)

A private pilot may participate in an Air Display providing he/she meets the requirements of CAR 2 (7A) with respect to the rules pertaining to private operations.

Full details of each pilot, including his/her previous experience, must be submitted on the *Application for Approval to Conduct an Air Display* form (see [Appendix B](#)) to CASA Area Office.



No persons other than operating crew may be on board a civil aircraft during the Air Display unless the prior permission of CASA has been obtained.

Regular Public Transport (RPT) aircraft carrying passengers to or from the Air Display site are not normally given approval to conduct a flypast while carrying passengers.

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 pilot in command. This does not, however, 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.



Site and Display Management

General

This section covers the following aspects of site and display management:

- Site assessment
- Marking of display axis
- Parking of aircraft
- Public enclosures and car parking
- Setting of minimum heights
- Weather minima
- Ground special effects safety
- Briefing
- Document checks and insurance
- Pilots' display programs
- Joy flight operations
- Post-display planning.

Site Assessment

While many Air Displays are held at licensed aerodromes and can take advantage of facilities already available, a number are staged at other sites. In assessing any proposed site, the Display Organiser or a delegated official should take into account the following points:

- The suitability of surfaces used by aircraft for take-off, landing, taxiing and parking
- The take-off and landing distances required and available
- Obstructions in the vicinity, with regard to the aircraft types which are expected to take part



- Whether adequate airspace is available to accommodate the planned display activities, and if not, whether the required space can be acquired
- The proximity of congested areas to the display site, particularly if the congested areas include schools or hospitals.

CAR 157

Generally, a congested area is any area in relation to a city, town or populous area. CAR 157 relates to minimum altitude for flight and, with few exceptions, provides that an aircraft is not permitted to operate at a height lower than 1000 ft over such (congested) areas

- The proximity of any prohibited, restricted or danger areas, or areas that may be considered noise sensitive
- The presence of livestock farms or wildlife conservation areas
- The proximity of other aerodromes, known aircraft landing areas or other areas of known aviation activity
- The availability of clear entry and exit routes for the public and emergency service vehicles.

A display site does not have to be at an aerodrome. Sometimes the display site is merely a location for the assembly of spectators, the aircraft departing from a remote location, travelling to the display site, performing their routine and returning to the remote location to land. In this case, the requirements pertaining to the suitability of surfaces for take-off, landing, taxiing and parking, and take-off and landing distances do not apply.

In addition to the points listed above, consideration should also be given to the following factors when selecting a site:

- Can adequate and easily controlled public viewing areas be provided?
- Can safe passenger pick-up points be established for joy ride operations?
- Is there a suitable site for model aircraft flying?
- Can a suitable drop zone be established for parachute operations?
- Can a suitable termination area for helicopters be established?
- Is there a suitable area for an aircraft static display, remote to any active aircraft movement area?
- Can safe and efficient arrangements be made for aircraft refueling?

Consider all these factors carefully when finally selecting a display site.



Marking of the Display Axis

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.

All participants must be thoroughly briefed about the display axis.

Most events are made up of aircraft whose display speeds vary widely. It may be unduly restrictive, from the viewpoint of display presentation, 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 axis 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.

CAO 29.4

CAO 29.4 section 4.2 states, in part, that an aircraft in flight below 1500 ft above ground level (AGL) shall not:

- Track or manoeuvre towards spectators within a horizontal distance of 500 m
- Pass within 200 m horizontal distance from spectators.

These general limitations should be considered when selecting a display axis.

Parking of Aircraft

As a general rule, for ease of control, aircraft taking part in the event should be segregated from both visiting and static aircraft.

Aircraft parks 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.

Aircraft should be parked to allow easy access by fire vehicles and to allow other aircraft to be moved around them.

Parking areas should be out of bounds to spectators when aircraft engines are running or aircraft are taxiing.

In the interests of safety, smoking should not be allowed in aircraft parking areas.



Public Enclosures and Car Parking

Sites for public enclosures and car parks must be carefully selected in relation to the aircraft flight paths and must never be located underneath them.

As a general rule, public enclosures and car parks should be positioned behind the crowd line, which is parallel to the display axis.

When determining the distance between the display axis and the crowd line, consider the speed of the display aircraft and the type of display being conducted (that is, flypast or aerobatic). For aircraft flying in formation, the distances are applicable to the aircraft performing nearest the crowd line.

Pilots should plan their flying sequence(s) in such a manner that they can always regain the display axis without infringing the minimum separation distance from the crowd line.

CAO 29.6

Rotorcraft must not be flown in such proximity to spectators' enclosures, buildings or aircraft on the ground as to cause a possible hazard either from downwash or as a result of control difficulties. Similarly, rotorcraft with underslung loads should only be flown over clear areas and in accordance with CAO 29.6.

Normally, spectators' enclosures and car parks should be confined to one side of the site, thus allowing aircraft maximum freedom to operate on the other side.

Effective barriers and marshalling arrangements are required to keep spectators clear of aircraft manoeuvring areas. When selecting barrier types, take into account the possibility of small children being able to pass under single rail barriers at adult waist height (such as road construction barriers).

Areas where spectators are not permitted must be properly enclosed and sign-posted as such.

Marshallers must be assigned to control crowd movements at all times throughout the event.

A public address system is of great assistance in crowd control and is essential where large numbers are involved. Such a system, when installed, should be audible along the entire length of the crowd line.

No aircraft may be taxied or have its engine(s) operated in any area open to the public. Provision must be made for the movement of both display and non-display (visiting) aircraft.



When establishing public enclosures, consider providing temporary toilet facilities to cater for the large crowds who frequently attend Air Displays.

Rubbish bins should be provided in strategic areas for public use to prevent discarded rubbish being blown at spectators by passing aircraft or interfering with the ground operations of aircraft.

It is important to check with local authorities with regard to the local requirements for the provision of sanitary facilities.

Do not lose sight of your responsibility for spectator safety. This is one of the most important responsibilities placed upon you by the display approval.

Setting Minimum Heights

Where Air Displays are held at aerodromes, CASA will normally authorise the Display Organiser to allow pilots to fly down to the minimum height specified on their Low Level Aerobatic approval.

Where displays are held away from an aerodrome, CASA will impose a minimum height which may be higher than that specified on an individual pilot's Low Level Aerobatic approval.

Irrespective of the above, CASA may specify a minimum height at any location.

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.

Pilots of military display aircraft participating in civil displays should be asked to advise the Display Organiser of their individual height minima.

Weather Minima

Minimum weather conditions should be determined by the Display Organiser in advance, published and strictly observed. This makes the decision to cancel the display in the event of bad weather less subjective, and makes the Display Organiser less likely to be subject to pressure to allow the display to commence in less than favourable conditions.

In any event, **no** display should take place in less than the prescribed Visual Meteorological Conditions (VMC).



The Display Coordinator must consider the operating characteristics of each participating aircraft. This may necessitate their deletion from the flying program in the event of weather conditions for which a participating aircraft is not approved.

Ground Special Effects Safety

The use of explosive devices for simulated groundbursts, smoke and other special effects must be strictly controlled by a competent person appointed by the Display Organiser.

Debris from such effects must not impinge on aircraft or the crowd, and to this end, the scale of any effects must be known before the event.

The affect that smoke emitted by the special effects may have on other display participants must be considered, taking into account the prevailing winds at the time of the display. 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.

Both the Display Organiser, and Display Coordinator must be fully aware of what affect such special effects will have on the display in general.

Display officials and pilots must be made fully aware of the location of such special effects on the airfield, and the Display Organiser must draw attention to the hazardous nature of such devices. Their location and safety radii, if appropriate, must be out of bounds to all staff, participants and spectators except those directly involved with their operation.

Briefing

Regardless of the size of the event, the importance of thorough, formal briefing cannot be over-emphasised. No pilot should take part in a flying display unless he/she has received appropriate briefing.

A written brief on the arrangements of the flying program should be circulated in advance to all participating flight crew, Air Traffic Control, joy flight operators and those in charge of particular functions, such as safety services and marshals.

This is particularly 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 Organiser must notify such participants by telephone or fax of any last minute changes in program sequence or timing.



A list of points that should be covered in the written brief, as a minimum, are given at [Appendix C](#).

A formal verbal briefing should be given on the day of the display and at any rehearsal, and all participants, where possible, must attend. Those participants not able to attend the formal verbal briefing must be given a verbal briefing on all matters covered at the formal briefing.

The briefing should include the following items as a minimum:

- Current and forecast meteorological conditions
- Air traffic briefing
- A time check
- Any changes to the written brief
- Program of events and any changes since the written brief was distributed
- Any changes to procedures advised in the written brief;
- Radio procedures and frequencies
- Runway(s) and taxiway(s) in use, and parking or movement area arrangements
- Circuit patterns, holding areas and holding heights
- Departure and arrival procedures during the display
- Emergency procedures
- Minimum heights and distances that apply to the display
- Procedures in the event of movements by aircraft not participating in the Air Display
- Display axis and crowd line locations.

Additional information regarding briefings is contained in [Appendix C](#).

The briefing should also include a reminder to all participants of the authority of the Display Coordinator to stop the display program at any stage during the proceedings.

Pilots should also be reminded that flying over the crowd, car park or any public enclosure is prohibited and any turns towards these areas must be



completed without infringing the safety buffer between the display axis and the crowd line.

If a NOTAM has been issued for the Air Display, this should be reviewed at the briefing, so all participants are aware of the Air Display airspace boundary, and the need to remain within that boundary. It should be stressed that the issuing of a NOTAM does not remove the responsibility of the pilots-in-command to maintain a thorough lookout for other aircraft.

Finally, any conditions imposed on the display event in the Air Display Approval issued by CASA should be thoroughly briefed.

Document Checks and Insurance

The Display Organiser should ensure that he/she has sighted and, where possible, hold copies of all documents relating to each participating pilot prior to the event.

Such documents may include, but not be limited to:

- Flight Crew Licence
- Aviation Medical certificate
- Proof of aircraft endorsement
- Low Level Aerobatic approval (where necessary)
- Air Operators Certificate, where the participant's role in the display involves a commercial operation (for example, joy flights)
- Approval to conduct a flight over a public gathering, where these have been obtained from CASA by the individual pilots.

Although there is no requirement in 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.

The Department of Defence may require a minimum level of insurance cover if military aircraft are taking part in the display.

It is important to note that the approval of an Air Display by CASA does not confer on the Display Organiser, or any 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.

Pilots' Display Programs

An Air Display is not likely to run smoothly or retain the interest of spectators unless it has been carefully planned.

The Display Organiser is to be personally familiar with each pilot's display routine and ensure that it complies with the safety criteria. Both the full display routine and any bad-weather alternative should be agreed upon in this way prior to the program being issued.

A sample display program has been included in [Appendix D](#), showing the minimum information that should be included in the display program. The composition of a display can vary greatly. Any of the following may be included:

- General aviation light piston-engine aircraft
- General aviation jet aircraft
- Military piston aircraft
- Military jet aircraft
- Gliders
- Balloons
- Parachutists
- Ultralight aircraft
- Model aircraft
- Helicopters.

The combination of any of the above activities needs careful consideration and coordination in terms of facilities, location, program timing, airspace requirements and duration of the display.

To keep the spectators' interest, vary the program and keep it moving. Five minutes is normally adequate for any single display item. When planning the program, consider the sequence of events, to ensure that the minimum amount of time is left free between display items.



Joy Flight Operations

Joy flights may only be conducted by operators who hold an Air Operators Certificate endorsed for passenger-carrying operations. The Air Operators Certificate must be endorsed for the aircraft type they intend to operate.

Joy flights should not be permitted during the Air Display itself.

Aircraft engaged in joy flights must be parked away from aircraft taking part in the flying display and static display aircraft.

Passengers must be escorted in parties between the spectators' enclosure and the aircraft before and after each flight. The route must be planned to ensure the passengers remain well clear of other aircraft.

CAO 20.16.1 In accordance with CAO 20.16.1 subsection 7, a passenger manifest must be maintained for each flight, clearly showing the following details:

- Aircraft registration
- Passenger names
- Date of departure
- Estimated time of departure
- Place of embarkation
- Destination.

Post-display Planning

Mass departure of aircraft and spectators following the completion of the Air Display is to be expected, and needs to be carefully planned and managed.

It will be necessary to maintain crowd control after the completion of the display to avoid having spectators moving around aircraft or onto the movement areas.

Effective pilot briefing and careful marshalling will assist in ensuring an orderly flow of departures of aircraft after the display.

Post-display activities such as fire-fighting demonstrations and drawing of raffles etc, can be used to spread the departure of spectators and avoid a situation where a good outing is spoiled by a slow and uncomfortable departure.



Liaison with Authorities and Services

Authorities to Be Notified

The following authorities and services constitute the minimum that should be notified:

- Notification and approval from CASA

Notification to Airservices Australia

- Notification to aerodrome operators and owners
- Police and local authorities
- Emergency and first aid services.

Notification and Approval from CASA

CAO 29.4

In order for CASA to assess your application and issue the appropriate approvals etc, a written application to conduct an Air Display, along with a detailed program of events and aerodrome diagram must reach CASA Area Office **not less than 28 days** before the proposed event, in accordance with CAO 29.4.

A sample application form is given in [Appendix B](#). Use of this form will ensure that all the required information is supplied.

Addresses of CASA Area offices are located in [Appendix A](#).

The information supplied in the application form submitted 28 days before the date of the event will enable CASA to ensure that:

- The proposed event is notified to Airservices Australia, and airspace and traffic procedures are coordinated for the event
- The activity is notified to other airspace users through the NOTAM system, where this is appropriate
- Adequate time is available for the consideration, preparation and distribution of any permissions, approvals or exemptions.



The scale of CASA attendance at the event, if any, will depend on the nature of the event, scale and location of the display.

Where a Flying Operations Inspector (FOI) attends the display, he/she will be required to ensure that the regulatory requirements are being complied with. The FOI is not responsible for pilot briefing, although he/she will attend the briefing to ensure all pertinent information is provided. Should the FOI observe a breach of safety regulations, or become aware of a hazardous situation or activities outside the scope of the display approval, he/she will initiate action with the Display Organiser to correct the situation and may, if necessary, suspend operations.

It should be appreciated that, irrespective of the scale of CASA attendance, the Display Organiser is not absolved from the responsibility to ensure that all concerned comply with the CARs, CAOs, the display approval and any special conditions imposed, and to ensure that the public are protected.

When all arrangements have been finalised, and the display approval has been issued, CASA issues a NOTAM advising, as appropriate, the following details:

- Airspace status — that is, control zone if ATC is provided — or danger area otherwise
- Vertical and lateral dimension of the display airspace
- Time period of airspace promulgated
- Any special frequency arrangements
- Any other operational requirements.

Notification to Airservices Australia

In general, you will not be required to contact or seek the permission of Airservices Australia in order to conduct your Air Display because CASA does this as part of the process of issuing the Airshow Approval. However, it would be prudent to check with the local Airservices Australia representatives for any local requirements.

If you are in any doubt regarding this, please discuss it with the CASA FOI responsible for processing your application.



Notification to and Permission from the Aerodrome Owners and Operators

If you are planning to conduct your Air Display on an aerodrome owned and operated by the Federal Airports Corporation (FAC), you should seek the permission of the Airport Manager at the earliest stage of planning.

Application to CASA should not be made until you have satisfied the requirements of the FAC and received their approval to conduct the event.

Likewise, if the Air Display is to be conducted on an aerodrome that is privately owned or owned by the local council, Department of Defence or other such body, you must obtain their permission to conduct the event prior to making application to CASA.

A copy of such permission should form an attachment to your application to CASA.

Police and Local Authorities

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 as well as providing emergency services. In some instances, approval from the police may be required.

Provide local authorities having control of various public services which a Display Organiser may wish to use, with early advice of the intention to hold the display so that any subsequent approach for assistance will not be unexpected. In any case, such local authorities may wish to be aware of the additional air activity which is to take place, in anticipation of any queries or complaints which may arise.

Emergency and First Aid Services

Suitable arrangements must be made to have first aid facilities available for both spectators and participants. Severe sunburn and heat exhaustion are common occurrences at Air Displays. Voluntary first aid organisations such as St. John Ambulance Australia or the Red Cross may be able to assist with this service.

Local emergency services must be advised of the proposed display. In many cases, fire brigade and ambulance officials may decide to station emergency vehicles at the event.



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 guidance of all persons concerned with the running of the event. These instructions should include emergency contact numbers where appropriate.

A suitable, reliable means of contacting emergency services should be available to the Display Organiser and the Display Coordinator at all times.



Special Program Events

Program Events

This section covers regulations and other details pertaining to the following special events:

- Ultralight aircraft displays
- Balloon displays
- Parachuting displays
- Model aircraft displays
- Glider displays
- Banner towing displays
- Kite flying.

Ultralight Aircraft Displays

Hang gliders, ultralights, gyroplanes and parasails may be included in the program of an Air Display.

The CAOs governing the operation of the above machines are:

CAO 95.8, 95.10,
95.55, 95.12,
95.14

• Hang gliders	CAO 95.8
• Ultralights	CAO 95.10 and CAO 95.55
• Gyroplanes	CAO 95.12
• Parasails	CAO 95.14.

Full details of the planned routine must be included with the display application. Ultralight aircraft must be identified by their manufacturer, trade name and model. Ultralight pilots must provide their Australian Ultralight Federation pilot's certificate number.

Operators of gyrocraft must be identified by their Australian Sport Rotocraft Association (ASRA) registration number and their ASRA pilot's certificate number.



Balloon Displays

CAR 260
CAO 95.54

Permission may be granted for both fixed (CAR 260) and manned free balloons (CAO 95.54) to operate.

It should be noted that the minimum heights for aircraft at the display are related 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. Thus, a poorly placed tethered balloon could force other aircraft to operate at greater heights than would otherwise be necessary.

Because of the inflation and deflation process, manned free balloon flights can be a time-consuming operation. Perhaps they should be considered only as a 'fill-in' during a lengthy break when no other operations are taking place, or alternately, as the first event on the program.

Parachute Displays

In general, the requirements for a parachute display, including the minimum distances from spectators and aircraft to the centre of the dropping zone, are set out in the Australian Parachuting Federation (APF) operational regulations. These requirements may depend on the parachutist's certificate category and must be sanctioned by a licensed Parachute Display Organiser.

Pilots of parachuting aircraft should allow sufficient time for take-off, dropping of wind drift indicators from 2000 ft, and climb to exit altitude. If the parachute descents are to be made from 5000 ft or above, it should be possible to stage another event in the time between the dropping of the wind drift indicators and the climb to the exit altitude.

The pilot of the drop aircraft should be allocated a climb pattern downwind of the aerodrome and then be advised by radio when it is clear to commence the drop run.

Any dramatic or sudden changes to surface wind speed and direction, following the dropping of the wind drift indicator, should be communicated to the parachuting aircraft. The rule that no propellers are to be turning while a parachute descent is under way needs little amplification.



Model Aircraft Displays

Model aircraft demonstrations are generally spectacular, especially demonstrations by radio-controlled models, and may be held on the movement area as part of the main program or independently of the program in an area remote from the movement area.

Radio-controlled model demonstrations must not take place in the vicinity of the aerodrome while other aircraft movements are in progress. The reason for this is that interference to the frequency used by these models from outside sources, such as radio transmitters, may cause loss of control of the models. 'Control line' controlled model flying may be permitted outside the movement area at any time or on the movement area when there is no other aircraft activity in the vicinity.

CAO 95.21

The model aircraft Display Organiser is required by CAO 95.21 to provide the local CASA Area Office with details of the proposed model display, independently of the Display Organiser. The model aircraft Display Organiser is still required to attend the pre-display briefing.

During the Display Organiser's pre-display briefing, aeromodellers are to be instructed not to fly their models over or within 30 m of spectators or parked aircraft in accordance with CAO 95.21.

Glider Displays

Gliders may be incorporated in a display program. Careful consideration should be given to the launching method and selection of the launch area. Unless proper management is exercised and personnel experienced in operating gliders to a tight schedule are available, the airfield may become cluttered with vehicles, tow ropes and aircraft.

If you use a winch to launch the gliders, you will have to be very careful about cable laying and cable drift during launch. You will have to plan the display to allow time for the cable layout so that the movement area is not obstructed during the powered aircraft operations. You will also need to consider the wind during launch. There must be no risk of the cable drifting onto the crowd when released or in the event of a cable break.

If you cannot guarantee this on the day, winch-launched glider operations must be cancelled.



Where possible, gliders should be launched by tug. This permits gliders to be held on tow in conditions of poor thermal activity and the glider display can be closely coordinated with other program items.

Winch-launch glider operations depend entirely on thermal activity for sustained flight and are much more difficult to coordinate within a program. To allow for an unpredictable flight profile, a winch-launched glider display should be allocated a block time.

CAO 95.4 CAO 95.4 covers the conditions for gliders. The minimum height for aerobatic demonstrations in gliders is 1000 ft AGL, unless the pilot is approved to conduct aerobatics at a lower height. However, aerobatics below 2000 ft AGL at a government or licensed aerodrome requires prior approval from CASA.

Banner Towing

CAR 149 Specific permission is required from CASA under CAR 149 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.

Most aerial work organisations licensed for banner towing would have the necessary approvals.

If intrusions by persons and equipment onto the runway strip are required for an aerial pick-up of a banner the aerodrome would have to be closed for half an hour. A ground launch of the banner is a much simpler procedure and does not need the aerodrome to be closed.

Specify the type of launch when including banner towing as part of the display program.

Kite Flying

CAR 260 To fly kites at an aerodrome, you will require an exemption against CAR 260 from CASA. You will need to keep the kites away from any possible approach path to a runway in case you get a non-radio aircraft arriving unexpectedly. Also, you can only fly kites when all other manned aircraft are on the ground.



Sports Aviation Bodies

All Sports Aviation Associations or Federations in Australia are governed by a dedicated sports aviation administration relevant to the type of activity. For example, the gliding is governed by the Gliding Federation of Australia and ultralight flying is governed by the Australian Ultralight Federation. A full list of these bodies is contained in [Appendix A](#).

Where an activity is to be included in the program of the Air Display, and that activity is governed by a Sports Aviation Association or the like, written confirmation from the relevant body that the participant is qualified and suitable to participate in the display should be included with the submission to CASA.



Appendix A. Useful Addresses and Telephone Numbers

Civil Aviation Safety Authority

All CASA Area Offices can be contacted by dialling 131757

New South Wales
Sydney Airline Operations
Area Office Sydney
PO Box 409
MASCOT, NSW 1460
Building 235
Cnr Qantas Drive and Robey Street
MASCOT, NSW 2020
Phone: 02 9336 3137
Fax: 02 9669 3111

Sydney Basin
Area Office Bankstown
PO Box CP57
CONDELL PARK, NSW 2200
Building 628
Cnr Airport Avenue and Gypsy Street
BANKSTOWN AIRPORT, NSW 2200
Phone: 02 9780 3039
Fax: 02 9780 3045

NSW Country
Area Office Tamworth
PO Box 895
TAMWORTH, NSW 2340
457 Rentell Street
TAMWORTH, NSW 2340
Phone: 02 6755 2245
Fax: 02 6755 2240

NSW Country
Area Office Canberra
GPO Box 2005
CANBERRA, ACT 2601
Cnr Nomad Drive and Rayner Road
Canberra Airport
PIALLIGO, ACT 2609
Phone: 02 6217 1416
Fax: 02 6217 1319

Victoria Melbourne Airline Office
(previously Victoria/Tasmania Area
Office Melbourne)
PO Box 558
Collins Street West
MELBOURNE, VIC 3000
505 Little Collins Street
MELBOURNE, VIC 3000
Phone: 03 9927 5345
Fax: 03 9927 5372

Victoria/Tasmania
Area Office Moorabbin
PO Box 20
CHELTENHAM, VIC 3189
19 Second Avenue
MOORABBIN AIRPORT, VIC 3194
Phone: 03 9518 2729
Fax: 03 9518 2793



South Australia

Central Area Office Adelaide

PO Box 126 PBC
EXPORT PARK, SA 5950
4 Kel Barclay Avenue
ADELAIDE AIRPORT, SA 5950
Phone: 08 8422 2904
Fax: 08 8422 2900

Western Australia

Area Office Perth

PO Box 1082
CLOVERDALE, WA 6985
130 Fauntleroy Avenue
PERTH AIRPORT, WA 6105
Phone: 08 9366 2828
Fax: 08 9366 2891

Northern Territory & Kimberly

Area Office Darwin

PO Box 41196
CASUARINA, NT 0811
Reservations House
3 Cecil Cook Avenue
Darwin Airport
MARRARA, NT 0812
Phone: 08 8943 2999
Fax: 08 8943 2986

Airservices Australia

PO Box 367
CANBERRA CITY, ACT 2601
Ph: 02 6268 4111
Fax: 02 6268 5683

South Queensland

Area Office Brisbane

39 Navigator Place
HENDRA, QLD 4011
Phone: 07 3632 4066
Fax: 07 3632 4060

North Queensland
Area Office Townsville

PO Box 7740
GARBUTT, QLD 4814
1 Coral Sea Drive
TOWNSVILLE AIRPORT, QLD 4810
Phone: 07 4750 2659
Fax: 07 4750 2699

North Queensland
Area Office Cairns

PO Box 280N
NORTH CAIRNS, QLD 4870
Building 78
Mick Borzi Drive
CAIRNS INTERNATIONAL AIRPORT
QLD 4870
Phone: 07 4042 3603
Fax: 07 4042 3600

Regulatory Service Division
Aviation Regulatory Services

PO Box 836
FORTITUDE VALLEY, QLD 4006
Phone: 136773
Fax: 07 3842 2580



Other Organisations

Gliding Federation of Australia

Building 130 Wirraway Rd
ESSENDON AIRPORT, VIC 3041
Phone: 03-9379 7411
Fax: 03 9379 5519

Australian Ballooning Federation

PO Box 402
EMERALD, VIC 3782
37 Boundary Rd East
EMERALD, VIC 3782
Phone: 03 5968 6533
Fax: 03 5968 6599

Recreational Aviation Australia (previously Australian Ultralight Federation)

PO Box 1265
FYSHWICK, ACT 2609
59 Woolongong Street
FYSHWICK, ACT 2609
Phone: 02 6280 4700
Fax: 02 6280 4775

Australian Parachute Federation (previously Australian Parachuting Safety Council)

PO Box 144
DEAKIN WEST, ACT 2600
37 Geils Court
DEAKIN, ACT 2600
Phone: 02 6281 6662
Fax: 02 6285 3989

Australian Sports Rotorcraft Association

Tim McClure
330 Mica Street
BROKEN HILL, NSW 2880
Phone/Fax: 08 8087 5909

Aircraft Owners and Pilots Association

PO Box 26
GEORGES HALL, NSW 2198
Hanger 600, Prentice Street
BANKSTOWN AIRPORT, NSW 2200
Phone: 02 9791 9099
Fax: 02 9791 9355

Australian Commercial Parachute Association

PO Box 6
EASTWOOD, NSW 2122
Phone: 02 9878 3147

Ultralight Pilots Association

PO Box W2
WANNIASSA, ACT 2903
Phone: 02 6231 5221



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Appendix B. Forms

This annex contains copies of the:

- Application for Approval to Conduct an Air Display (form no. 696)
- Display Pilot Details Sheet (form no. 697).



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Application for Approval to Conduct an Air Display

SECTION A: APPLICANT DETAILS

Full Name of Applicant(s)				
Address				
Full Name of Person Nominated as Display Organiser				
Address				
Telephone No. Work	Home	Mobile	Fax	E-mail
Full Name of Person Nominated as Display Coordinator				
Address				
Telephone No. Work	Home	Mobile	Fax	E-mail

SECTION B: DISPLAY DETAILS

Location	Site Details	
Date(s) of Display	Start Time of Display	Finish Time of Display
Date(s) of Practice Day (if any)	Start Time of Practice	Finish Time of Practice
Date, Time and Location of Pre-Flight Briefing	Maximum Height of Display	Maximum Radius of Display
Number of Spectators Expected		

SECTION C: PARTICIPANTS

Types of Aviation Activity		✓	✓
Aerobatics	<input type="checkbox"/>	Pylon Racing	<input type="checkbox"/>
Helicopter	<input type="checkbox"/>	Gliding	<input type="checkbox"/>
Helicopter Joy Flights	<input type="checkbox"/>	Fixed Balloon	<input type="checkbox"/>
Ultralight Aircraft	<input type="checkbox"/>	Free Balloon	<input type="checkbox"/>
Parachuting	<input type="checkbox"/>	Kite	<input type="checkbox"/>
Banner Towing	<input type="checkbox"/>	Model Aircraft	<input type="checkbox"/>
Military Aircraft	<input type="checkbox"/>		
Military Types Expected to Take Part in the Display			
Name(s) of Charter (Joy Flight) Operator(s)		AOC Number	Aircraft Types
RPT Flight Numbers	Airline	Arrival Time	Departure Time

SECTION D: EMERGENCY SERVICES**Police:**

Name of Station	Availability (delete one) Display Site / On Call
Contact Name	Contact Phone

Fire Service:

Name of Station	Availability (delete one) Display Site / On Call
Contact Name	Contact Phone

Ambulance:

Name of Station	Availability (delete one) Display Site / On Call
Contact Name	Contact Phone

SECTION E: ATTACHMENTS

The following documents, as applicable, should be included with this application as attachments: (✓ those attached)

- Full Air Display Program
- Diagram(s) of the Display Location Clearly Showing:
 - Display Axis
 - Aircraft Holding Points
 - Manoeuvring Areas
 - Display Aircraft Parking
 - Static Display Areas
 - Joy Flight Embarkation Points
 - Spectator Viewing Areas
 - Model Aircraft Areas
 - Parachute Drop Zone
 - Helipads
 - Banner Pick-up/Drop Area
 - Refuelling Area
 - Location of Emergency Services
- Copy of any Permission from Aerodrome Owner(s)
- Display Pilot Details Sheet (one for each display pilot)
- Details of any Fireworks or Ground Effects

SECTION F: SIGNATURES OF THE APPLICANTS

Signature	Signature
Name	Name
Position	Position
Date	Date

The Federal Government TimeSaver initiative aims to assess the time taken to complete Government Forms. Please indicate the approximate time taken to complete this form.

Hrs Mins



Display Pilot Details Sheet

Use a separate sheet for each display pilot.

Pilot's Surname: _____

First Names: _____

ARN: _____ **Date of Birth:** _____

Address: _____

_____ **P/code:** _____

Telephone: (____) _____

Flight Crew Licence Type: ATPL CPL PPL (circle one)

Medical Certificate Details: Class 1 Expiry ____/____/____
Class 2 Expiry ____/____/____

Display Aircraft Type: _____ **Registration:** VH-_____

Total Flying Hours: _____ **Hours on Type:** _____

Previous Display Experience: _____

Proposed Display Details: _____

Minimum Altitude: _____ feet **Maximum Altitude:** _____ feet

Low Level Acrobatic Flight Approval Number: _____

Date Issued: ____/____/____ **Minimum Altitude Permitted:** _____ feet

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Appendix C. Points for Inclusion in Written Brief

Points for Inclusion in the Written Brief

The contents of the written brief appropriate for any event will vary with the scope and complexity of the event itself.

The following list is a minimum.

- ATC aspects, including:
 - Flight paths
 - Avoidance of noise sensitive areas
 - Holding points
 - 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 and refuelling arrangements
- Arrangements for joy flights and visiting aircraft
- Emergency arrangements
- Details of place and time where the formal pre-display briefing will be conducted, at the event.



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

- The need for the pilot-in-command to ensure that the aircraft is operated in accordance with its certificate of airworthiness or permit to fly
- Only manoeuvres that are known and have been practiced, including bad weather displays, are to be flown
- Aircraft positioning at all times is to be such that, in the event of an engine failure or other airborne emergency necessitating a forced landing, such a forced landing will be outside of the crowd area
- No unauthorised persons are to be carried on the aircraft.



Appendix D. Sample Display Program

Schedule 1. Program of Events (Example)

Aircraft Permitted to Fly Over Public Gathering.

Instrument No PFFO/440/97

Time	Activity/Aircraft	Personnel
1130-1200	Ultralight Display Chinock Sapphire Thruster	J Pilot R Rabbit C Yeager E Flynn
1225-1235	<i>Country Air Arrival and Departure ZF160</i>	
1240-1315	Official Opening	
1315-1340	Dragon Fly Aerobatic Display	D Wasp
1340-1350	<i>Country Air Arrival and Departure ZF 161</i>	
1350-1400	Parachute Display	Skydive Nowhere Else
1400-1410	Gyrocopter Handling Display	J Rotorhead
1410-1420	Storch Handling Display	S Lowturn
1420-1440	Sukhoi Formation Aerobatic Yak Formation	A Rusclosky A Closeying
1440-1500	Rescue Display PN68	H Ero
1500-1515	Spitfire Aerobatic Display	A Agedagpilot
1515-1530	Stampe Aerobatic Display	R Tread
1530-1545	Trojan Aerobatic Display	D Dellken
1545-1600	Yak Aerobatic Display	A Closeying
1600-1615	RAAF Roulettes	RAAF
1620-1640	<i>Country Air Arrival and Departure ZF 162</i>	
1640-1650	Constellation Fly Past on Departure	Q Oldbored

Note: W Overego is approved to conduct a Handling Display in the Trojan as reserve display provided he attends the display briefing.



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Appendix E. Display Participant Signature Sheet

This appendix contains a copy of:

- Participant Signature Sheet (form no. 695).



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Participant Signature Sheet

I, the undersigned, acknowledge that I have read the CASA approval for the

..... Air Display
and that I will operate my aircraft in accordance with the terms of that approval.

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