

# ***HANG GLIDING FEDERATION***

*of*

## ***AUSTRALIA***



## ***DISPLAY MANUAL***

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## **1. Status of this Manual**

This Display Manual has been approved by the Civil Aviation Safety Authority. It details the requirements and procedures for the conduct of air displays by members of Hang Gliding Federation of Australia (HGFA). This Manual is to be used in conjunction with the HGFA Operations Manual and associated documentation.

In the event of conflict between the provisions of this Manual and the HGFA Operations Manual, the HGFA Operations Manual shall take precedence unless written approval is given by the HGFA Operations Manager.

This Manual shall not be waived or altered without express permission of the HGFA Operations Manager.

In altering or waiving provisions of this Manual the HGFA Operations Manager shall seek advice from senior members of the HGFA with experience in the conduct of air displays and officers of the Civil Aviation Safety Authority.

## **2. Definitions, Responsibilities and Procedures**

### **2.1. Air Display**

An air display as referred to in this Manual is a non-recreational flight or flights involving one or more HGFA aircraft being flown within 600 metres of a populous area or at a public gathering.

All displays shall be conducted in accordance with the Civil Aviation Orders and the HGFA Operations Manual unless any necessary exemptions have been obtained from the Civil Aviation Safety Authority.

All exemption documentation shall be kept as part of normal record keeping.

*Note: Display organisers should be aware that many Air Shows require special exemptions and application may need to be lodged at least 28 days prior to the display date.*

### **2.2. Display Organisation**

Any display involving HGFA aircraft must be organised by a Display Organiser Endorsement (DOE) holder.

The display organiser is responsible for the following:

- a. Determining procedures and flight plans to ensure the display can be conducted with due regard for safety; ensuring that all proposed operations comply with the requirements of applicable Civil Aviation Orders, the HGFA Operations Manual and this Manual;
- b. Ensuring that all necessary exemptions to Civil Aviation Orders are obtained as required;
- c. Determining appropriate landing and take off area or areas;
- d. Ensuring that adequate numbers of crowd control personnel are provided ;
- e. Ensuring that crowd control personnel have suitable equipment at their disposal to allow them to perform their tasks effectively;
- f. Selecting appropriate pilots to conduct the display;
- g. Ensuring that all pilots are suitably endorsed in accordance with this Manual;
- h. Selecting ground crew to be used;
- i. Ensuring that all equipment used is certified in accordance with this Manual;
- j. Establishing appropriate emergency procedures;
- k. Maintaining all necessary records as outlined in this Manual and in the HGFA Operations manual; and
- l. Producing reports as required by this Manual, the HGFA Operations Manager or the HGFA Executive Committee.

### **2.3. Display Supervision**

Displays must be conducted under the supervision of a DOE holder, or under the supervision of a Display Pilot Endorsement (DPE) holder delegated by the DOE holder to conduct the display.

The display supervisor is responsible for the following:

- a. Overseeing all aspects of display safety;
- b. Ensuring that the display is conducted in a safe and professional manner;
- c. Ensuring that take off and landing area boundaries are clearly defined and are supervised to ensure that members of the public do not enter the area;
- d. Placement of suitable wind direction indicators; and
- e. Ensuring that all display participants are fully briefed and understand all aspects of the planned flight or flights.

This briefing must include, but is not limited to:

- Take off area obstructions
- Landing area obstructions
- Pilot call signs or identifiers
- Communication systems
- Flight plan/s and flight choreography
- Emergency procedures
- Any unique requirements associated with the display

### **2.4. Operational Limitations**

HGFA Aircraft conducting a display shall not be flown at a height lower than 100 feet within a horizontal distance of 25 metres from members of the public.

In addition, aircraft shall not track or manoeuvre toward spectators at a height lower than 100 feet:

- a. within a horizontal distance of 25 metres from members of the public if the aircraft is a hang glider or a paraglider; or
- b. within a horizontal distance of 50 metres from members of the public if the aircraft is a weightshift microlight.

### **2.5. Ground Crew**

All ground crew must hold a current HGFA Pilot Certificate for an aircraft of the type to be used in the display, and must be:

- c. A person appointed by the DOE holder; and
- d. Have communication systems that comply with this Manual.

## **2.6. Crowd Control**

Crowd control is the direct responsibility of the display supervisor. However, he or she may appoint crowd control officers to assist in the carrying out of this task.

Any such crowd control officers must:

- a. Be fully briefed as to their duties by the display supervisor;
- b. Be in communication with other personnel involved in the conduct of the display; and
- c. Be aware of established emergency procedures.

## **2.7. Launch and Landing Areas**

A launch or landing area is:

- a. A clearly defined area that is free from obstructions and hazards that is large enough to launch and land an aircraft of the type to be used in the display without endangering the pilot or bystanders; and
- b. An area that is supervised to ensure that appropriate separation is maintained from members of the public.

## **2.8. Communications**

- a. All display staff and participants must be in contact with the display organiser during the display phase.
- b. UHF radios are acceptable for communication and a simple system of hand signals must be determined for use in case of radio failure.
- c. If airspace procedures require communication with other aircraft or Air Traffic Services, VHF air band radio will be required.

## **2.9. Notification of Intent to Conduct a Display**

Before a display is conducted, the display organiser is required to notify the HGFA Operations Manager.

Notification shall include the following details:

- a. The name of Display Organiser Endorsement holder responsible for the conduct of the display.
- b. The name of the display supervisor.
- c. The proposed date and time of the display.
- d. The location of the display.

For the purposes of notification, multiple flights on any given day or consecutive days at the same location shall be considered as a single display.

## **2.10. Records to be Kept**

Each DOE holder shall keep a log of all displays conducted. The log shall contain a minimum of the following information:

- a. The date, time and number of flights.
- b. The precise location of the take off and landing area.
- c. The identity and HGFA number of all participating pilots, crowd control officers and other staff.
- d. Details of any incident or accident occurring (as defined in Section 5.5.1 of the HGFA Operations Manual).
- e. Any CASA exemption documentation required to organise the display.

### **2.11. Incident and Accident Reports**

All incidents or accidents shall be reported in accordance with Section 5.5 of the HGFA Operations Manual.

Any serious incident or accident shall be reported to the HGFA Operations Manager within two hours by telephone or facsimile communication.

Less serious incidents shall be reported to the HGFA Operations Manager within twenty-four hours by telephone or facsimile communication.

*Note: Accidents or incidents occurring at displays are of much greater significance to the HGFA as they occur in public view and will therefore must be treated with the highest priority.*

### **2.12. Compliance with Requirements**

It is the responsibility of the display supervisor to ensure that all display participants comply with operational regulations and requirements. Any breach of regulations shall be recorded in accordance with Section 2.10 of this Manual.

No limitation is placed on pilots in regard to aerobatics or aerial manoeuvres other than those placarded on the aircraft used in the display.

*Note: Any unusual manoeuvres that are to be performed during a display must be practised in advance in an area other than that to be used for the display. Lack of practice cannot be used as grounds to defend any disciplinary action arising from an incident occurring at a display.*

### **2.13. Equipment Certification and Maintenance**

All equipment shall be certified in accordance with HGFA Operations Manual. Any equipment that is non standard and not include in the Operations Manual is not to be used in any display unless previous permission has been sought from the HGFA Operations Manager.

Any additional equipment such as flags, pyrotechnics, smoke and streamer displays must be approved by the HGFA Operations Manager prior to any display approval.

Operation of an aircraft outside its certification requirements shall be considered a serious breach of regulations and could lead to disciplinary action.

### **2.14. Fuel**

Refuelling and fuel storage will be carried out in accordance with Section 6.3 of the HGFA Operations Manual.

### **2.15. Propellers**

Clearance from propellers is to be maintained at all times as specified in the HGFA Operations Manual Section 6.3. This must be ensured by defining the engine run-up, launch and landing areas and supervising the area to ensure that members of the public are not permitted entry.

### **2.16. Carriage and Use of Pyrotechnics**

Pyrotechnic devices used for displays must be of a type approved by CASA for carriage aboard an aircraft.

Where a pyrotechnic device is to be carried on an aircraft and deployed during a display flight, the display supervisor shall ensure compliance with provisions for the carriage and use of pyrotechnics.

The pilot conducting the display must be familiar with the safe handling, ignition methods and in-flight carriage of pyrotechnics.

The assembly for carriage of pyrotechnics attached to an aircraft must be solidly mounted to the aircraft. Pyrotechnics must be secured at sufficient distance from the pilot, fuel, wing, suspension systems, engine and propeller to present no danger to pilot or aircraft during take-off, flight or landing.



## **2.17. Towing of Flags, Banners or Streamers**

For the purpose of this subsection, a flag is defined as a flag, banner, streamer or any similar equipment.

Where a flag is to be towed by an aircraft during a display flight, the display supervisor shall ensure compliance with provisions for the use of the flag.

The pilot conducting the display must be familiar with the deployment and towing of flags.

Where the flag is to be deployed from a container in flight, the container must be robust and constructed to ensure that the flag and associated weight are securely retained. The container attachment device and closing mechanism must be constructed in a manner which prevents inadvertent detachment of the container or release of its contents.

A flag attachment point release (such as a three ring release or similar device) must be incorporated in the flag assembly for use in an emergency, and must be protected from inadvertent activation.

Materials used to attach the flag weight and flag deployment assembly, including the leading edge of the flag, hardware or webbing, shall have a minimum tensile strength of ten times the total suspended weight.

Where the aircraft conducting the display is motorised, flag carriage shall be configured in a manner which minimises the possibility of the flag being drawn into the aircraft's propeller.

The packing of the flag and weight shall be such that the flag weight deploys before the flag, in order to prevent entanglement between the flag and weight, and to allow the flag to unfurl in an orderly manner.

## **2.18. Night Flights**

Night flights may only be conducted under clear night conditions and in accordance with the following conditions:

- a. Daylight inspection of the proposed flight path must be made, and preferably a practice flight should be conducted.
- b. Take off and landing areas must be well illuminated.
- c. Cloud base must be at least 1000 ft above the proposed flight or flights.
- d. Standard VMC criteria will apply to all flights.
- e. Prevailing wind in excess of 15 knots shall lead to the immediate cancellation of the display.
- f. A suitable beacon or light must be affixed to the pilot or the aircraft.

## **2.19. Stadium and Confined Spaces**

Flights over a stadium or confined area may only be conducted under the following conditions:

- a. In wind not exceeding 15 knots;
- b. In wind in excess of 10 knots flights may not be made below the height the stadium roof;
- c. In winds less than 10 knots the decision as to the suitability of flights into the stadium or confined space must be made by the display supervisor; and
- d. In all cases alternative landing areas that are relatively free of terrain induced turbulence are to be available and used if required for safety reasons.

## **2.20. Airservices Notification**

Any flight to be conducted in controlled airspace must be approved by Airservices Australia. written application and approval must be made prior to the event. The relevant Air Traffic Services unit must also be notified either as required by the written approval or as follows:

- a. Two days prior to the display the Senior Air Traffic Controller shall be sent details of the event via facsimile communication.  
Display details should include: scheduled start and finish times; location; maximum height of flight/s; and an emergency contact telephone number.
- b. Immediately prior to the event clearance must be gained from the relevant Flight Service Unit, again stating start and finish times. This clearance may be gained using VHF air band radio or mobile phone with prior arrangement.

### **3. Endorsement Requirements**

#### **3.1. Display Organiser Endorsement (DOE)**

#### **3.2. Requirements for Appointment**

An applicant for the issue of a Display Organiser Endorsement shall satisfy the following minimum requirements:

- a. Hold a valid HGFA Level 2 Instructor Certificate or Chief Flying Instructor Certificate and have a minimum of two years experience as an operator of an HGFA approved training facility; or
- b. Hold a valid HGFA Advanced Pilot Certificate or Microlight Pilot Certificate and have gained extensive flying experience over a period of no less than five years; and
- c. Have demonstrated a thorough understanding of unique airspace restrictions which may apply to display operations;
- d. Have demonstrated an ability to liaise with officers of the Civil Aviation Safety Authority;
- e. Have participated in at least three air displays in the previous two year period;
- f. Be capable of operating in a manner so as not to bring the HGFA into disrepute; and
- g. Lodge an application to the HGFA Operations Manager accompanied by the prescribed application fee.

#### **3.3. Privileges & Responsibilities**

The DOE holder shall:

- a. Be authorised to organise and be responsible for displays approved by the HGFA Operations Manager or his delegate;
- b. Determine pilots to be used in a display and has the right to refuse permission to any pilot he or she feels does not have an adequate amount of skill or expertise or the attitude necessary for a display pilot; and
- c. Be directly responsible to the HGFA Operations Manager and must maintain clear and accurate records of all activities, negotiations with Civil Aviation Safety Authority officers and event coordinators leading up to, during and after the display.

#### **3.4. Issue and Renewal**

- a. The issue of a Display Organiser Endorsement may only be authorised by the HGFA Operations Manager.
- b. A DOE holder must organise at least two displays per year to maintain currency.
- c. A DOE may be renewed by the HGFA Operations Manager on receipt of an appropriate renewal application and the prescribed fee.
- d. Unless suspended cancelled or varied, a Display Organiser Endorsement is valid for a period of two years from the date of issue.

- e. Before renewing a DOE the HGFA Operations Manager must ensure the applicant for renewal has the level of current competency necessary to perform the tasks as required for the original issue of the DOE.

### **3.5. Suspension, Cancellation or Variation of a Display Organiser Endorsement**

- a. The HGFA Operations Manager may suspend a DOE pending HGFA Disciplinary Action. Any such action will be made in writing.
- b. Any breach of operational regulations or requirements of this Manual or unprofessional behaviour in the organisation or conduct of a display may be considered grounds for suspension of a DOE and initiation of disciplinary action in accordance with Section 7.2.1 of the HGFA Operations Manual.

**Note:** *DOE holders are advised that all breaches of regulations and unprofessional behaviour are treated as serious matters by the HGFA. They are further advised that should disciplinary action lead to suspension, cancellation or suspension of a DOE, the full privileges of the suspended, cancelled or varied endorsement are unlikely to be restored before the HGFA is fully convinced that the applicant will conduct all future displays both legally and professionally.*

- c. The following occurrences may be considered grounds for initiation of disciplinary action. This list should not be considered to be exhaustive.
  - Breach of any regulation or provision of this Manual.
  - Conducting displays in inappropriate weather or in an inappropriate manner.
  - Use of under-qualified pilots.
  - Use of pilots without current HGFA membership.
  - Incompetent organisation such as selection of unsuitable take off and landing Areas.
  - Failure to inform the HGFA Operations Manager of the impending display.
  - Failure to keep correct log books, incident reports etc.

### **3.6. Display Pilot Endorsement (DPE)**

#### **3.7. Requirements for Appointment**

Applicants for the issue of a Display Pilot Endorsement shall satisfy the following minimum requirements:

- a. Hold a current HGFA Advanced Pilot Certificate or a Microlight Pilot Certificate;
- b. Have completed a minimum of 100 hours in-flight experience and 200 flights in the type of aircraft being used for the display;
- c. Have completed a minimum of 30 hours in-flight experience in the preceding twelve month period in the type of aircraft being used for the display;
- d. Has satisfactorily passed a Flight Accuracy Examination (FAE);
- e. Demonstrate a thorough knowledge of airspace requirements;
- f. Hold a current VHF Radio Endorsement;
- g. Demonstrate a professional attitude toward all personal flying operations; and
- h. Lodge an application to the HGFA Operations Manager accompanied by the prescribed application fee.

#### **3.8. Flight Accuracy Examination (FAE)**

- a. A Flight Accuracy Examination may be conducted and directly supervised by a DOE holder or the HGFA Operations Manager.
- b. The DPE applicant must complete a minimum of three flights. These flights must be completed in a variety of conditions, including flight and landings in confined areas similar to those which may be encountered during a display.
- c. The applicant must demonstrate a high degree of competency and accuracy:
  - during the launch, flight, approach and landing phases of the flights;
  - when flying in strong wind;
  - when flying in light wind;
  - when flying in turbulence; and
  - when flying in small and confined areas.

#### **3.9. Privileges**

Under the supervision of a DOE holder the DPE holder may:

- Conduct displays in aircraft of the type of aircraft for which the Endorsement is issued;
- Make decisions regarding flight path;
- Approve a landing or take off area as suitable for prevailing conditions; and
- Make emergency decisions as to flight path approach and conditions.

**3.10. Issue And Renewal (DPE)**

- a. The issue of a Display Pilot Endorsement may only be authorised by the HGFA Operations Manager.
- b. A DPE may be renewed by the HGFA Operations Manager on receipt of an appropriate renewal application and the prescribed fee.
- c. Unless suspended cancelled or varied, a Display Pilot Endorsement is valid for a period of two years from the date of issue.
- d. Before renewing a DPE the HGFA Operations Manager must ensure the applicant for renewal has the level of current competency necessary to perform the tasks as required for the original issue of the DPE.