



# **GROUND HANDLING AT AERODROMES**

## **Hang Gliding & Paragliding**

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# 1 Introduction

## 1.1.1 Legal

This Manual is approved by the Civil Aviation Safety Authority (CASA), and specifies procedures, standards and guidelines under which the ground handling of hang gliders, and paragliders may be legally conducted in Australia at aerodromes.

Under no circumstances should the reader, or anyone directly or indirectly associated with the reader, use this Manual as the sole reference on which to base ground handling operations of any kind.

Ground handling should not be attempted without first obtaining instruction in the techniques of ground handling; and without teaming with experienced pilots as part of the learning/practice process.

## 1.1.2 Background to Ground Handling at Aerodromes

Ground handling is where a pilot attaches themselves to a hang glider or a paraglider and manoeuvres this equipment without intending to become airborne. To help ensure that the pilot doesn't become airborne, this may be conducted either on flat or gently sloping ground. Hang glider pilots may practice wing control while running into the wind. Paraglider pilots may practice canopy deployment (either forward or reverse) and wing control while running into the wind.

Ground handling is an essential skill for hang glider and paraglider pilots. It is one of the first skills set to be taught when hang glider and paraglider pilots start their flight training. Good ground handling skills help ensure competent and safe launching and landing skills (whether off a slope or via ground towing/aero-towing).

Having gained their flight qualifications, pilots may subsequently practice ground handling to refresh their equipment handling skills, ground test new equipment or learn new handling and launch techniques.

Ground handling is best done on an even (non-undulating) surface with a clear wind. For this reason, aerodromes have been considered ideal for this activity. For small country aerodromes, the runway and runway reserves have been utilized – due to the run length available and the opportunity to find areas for clear wind.

As part of their basic training, all hang glider and paraglider pilots are made aware of their obligations when operating at or in the vicinity of aerodromes. Ground handling at aerodromes carries with it the risk of conflict between hang glider/paraglider pilots and general aviation (whether taxiing, taking off or inbound). Failure to clear a runway may result in an inbound aircraft having to abort a landing and go around, or cause an aircraft to delay take-off. Failure to clear a taxiway may result in a potentially dangerous on-the-ground interaction.

Paragliders and hang gliders operate at aerodromes with the understanding that their ground handling activities do not conflict with any general aviation operations.

In years past, maintaining a constant lookout for nearby general aviation activity has been a standard effective practice. With the advent of compulsory carriage and operation of airband

VHF radios in CTAF areas, airband VHF radio usage has become another way to be alerted to nearby general aviation activity.

### 1.1.3 General Guidelines

Due to the potential for personal injury and conflict with general aviation, great care must be taken at all times when ground handling at aerodromes. Ground handling at an aerodrome should only be undertaken after express permission has been obtained from the entity managing that aerodrome.

Hang glider pilots, paraglider pilots and general aviation pilots rely heavily on a clear understanding on how they are to interact in an aerodrome situation. Responsibility must not be taken lightly. Failure to adhere to the guidelines in this manual may result in an incident or an accident with injury or death to the hang glider pilot, paraglider pilot or general aviation pilot. Competent knowledge (through prior instruction and practice) is essential. All forms of ground handling require:

- **AIRMANSHIP** - safe procedures must be adhered to throughout all operations. This diminishes ambiguity and delegates responsibilities.
- **KNOWLEDGE** - hang gliding and paragliding equipment is potentially dangerous, especially in windy conditions. Ignorance of standard general aviation operating procedures at aerodromes adds to any pre-existing hazard. For the trainee pilot, a sound understanding of the equipment and procedures to be used is imperative prior to attempting ground handling. Any pilot should be aware of all considerations before entering an aerodrome to ground handle.
- **EXPERIENCE** - it is essential that information is gained from an appropriately endorsed HGFA instructor. This experience is best maintained through regular practice under appropriate conditions.

### 1.1.4 Preliminary Recommendations

Criteria for safe ground handling at aerodromes;

- **Flying equipment:** The flying equipment (wing and harness) must be in a fit structural state to enable ground handling. (Note: Given that flight isn't intended, the equipment doesn't need to be airworthy in terms of porosity and/or trim).
- **Safety Helmet:** A safety helmet in good repair should be worn whenever the pilot is attached to their equipment.
- **Supervision Appropriate to Experience:** Pilots engaged in ground handling should be supervised at a level appropriate to their skill set. An appropriately endorsed HGFA instructor should supervise unlicensed pilots. Licensed pilots may also benefit from instructional & non-instructional advice.
- **Appropriate Weather Conditions:** Ground level visibility should be as per current Visual Flight Rules (VFR) criteria. It should not be raining. Wind strength should be within the scope of the pilot's experience and competence in ground handling.

- Freedom from mechanical turbulence: The area for ground handling should be chosen with due regard to the possibility of mechanical turbulence (rotor) from nearby features such as hangars, sheds, buildings and trees. Ideally an area free of such turbulence should be selected.
- Visual Awareness of General Aviation: When operating in an area where general aviation may be taxiing, taking off or inbound, a constant lookout for such activities must be maintained.
- Airband VHF Radio Watch: In addition to visual awareness, when operating on or near a runway, a constant airband VHF radio watch on the aerodrome's designated frequency must be maintained to monitor for inbound general aviation.

## 2 Operational Requirements

### 2.1 Pilot Qualifications for Ground Handling at Aerodromes

No person shall ground handle a hang glider or paraglider at an aerodrome unless:

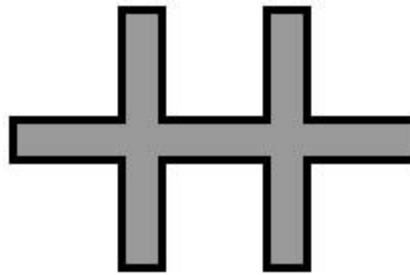
- a) they hold an HGFA certificate for the aircraft being utilised; or
- b) they are undergoing training under the direct supervision of an appropriately endorsed HGFA Instructor for the purpose of gaining HGFA Certification; and
- c) they either hold an airband VHF radio endorsement or are being directly supervised by a person who does; and
- d) all operations comply with the requirements of this manual

### 2.2 Duty Pilot

A nominal duty pilot shall be present at all ground handling operations at aerodromes. Where a pilot is ground handling unaccompanied, they will be their own duty pilot. Where ground handling is being conducted as part of flying school activities, the supervising instructor will be the duty pilot. Where a group of licensed pilots are ground handling, one of their number will be the duty pilot.

The duty pilot's responsibilities are:

- a) to establish and co-ordinate ground handling procedures, including the determination of an appropriate area and communication channels;
- b) to ensure that all participants are advised and aware of all procedures and requirements regarding ground handling at aerodromes and endeavour to have all persons involved adhere to these procedures;
- c) to ensure procedures are in place to ensure the safety of any persons not associated with the ground handling activities (including bystanders and general aviation);
- d) to coordinate effectively with duty pilots or officers from other flying organisations, if they are operating from the same site, to ensure that all mixed operations are carried out safely and with due regard for other airspace users;
- e) ensure that a gliding operations signal is in place;



**Note:** A "gliding operations signal" is in the form of a white double cross placed flat on the ground adjacent to the primary wind indicator at the airfield. This signal is usually a minimum of five metres in length and two and a half metres in width, in the shape illustrated.

- f) ensure that the appropriate airband VHF radio frequency is monitored; and any incoming aircraft notified of the ground handling activities (including advice when the runway is clear to allow a safe landing)

Considerations for establishing ground handling procedures include:

- level of pilot skill
- surface winds
- wind gradient
- winds aloft
- runway direction
- areas of turbulence
- separation between aircraft
- obstacles and hazards
- the operations of other site users

## 3 Equipment

### 3.1 Hang Gliders and Paragliders

Any such equipment being used for ground handling at aerodromes should be fit for purpose. Such equipment doesn't necessarily have to be airworthy, but (if that is the case), all steps need to be taken to ensure that inadvertent aviation will not take place during ground handling.

The major components of the flight equipment (i.e. wings and harnesses) should either be certified by a recognised certifying body or manufactured by a recognised manufacturer who also manufactures certified products. Homemade wings and harnesses are not to be brought onto an aerodrome.

Person's ground handling are not to attach themselves to a hang glider or a paraglider by any other means than a properly attached and fully buckled harness. (Note: The hang glider or paraglider can be ground handled without a harness provided the pilot is only holding on to the equipment and has the ability to separate themselves from the equipment simply by releasing their grip.)

## 3.2 Airband VHF Airband Radio

Only a duly certified (legal in Australia) airband VHF radio is to be used. This radio must be in a serviceable condition at all times (including a maintained power supply).

- a) Where a person is delegated to maintain a radio watch but is not using any flying equipment, a handheld airband VHF radio is deemed sufficient. For ease of operation, a handpiece speaker microphone may be used also.
- b) Where a person is delegated to maintain a radio watch and is using flying equipment (e.g. also partaking actively in ground handling), the airband radio equipment shall be set up to allow clear reception of messages and an easy ability to transmit while they are using their flying equipment. (This may involve wiring speakers, microphones and press-to-talk buttons into harnesses, helmets etc..)

## 3.3 Safety Equipment

Person's ground handling at an aerodrome must wear a safety helmet. They must also have ready access to a telephone (either mobile or landline). A first aid kit is recommended.

# 4 Procedures

## 4.1 General Considerations

### 4.1.1 Site Considerations

Sites used for ground handling must have an open area free of obstacles and hazards at any point where it is anticipated that pilots and equipment may go (e.g. being blown downwind in a high wind situation).

Ground handling areas at aerodromes should be located as far away as possible from any areas of regular traffic (taxiways, roads etc.). Where the runway and runway reserve is being used for ground handling, alternate areas (e.g. the side reserves of the runway) should be readily accessible to allow persons engaged in ground handling to clear the runway quickly to allow take-offs and landings by general aviation.

### 4.1.2 Weather Conditions

Where pilots are ground handling in light winds (e.g. practicing a launch run in a hang glider or a forward deployment in a paraglider), a long run path is required. This may require access to a runway or runway reserve (with due consideration to other users). Such activities generally commence at the downwind end of the training area.

As the wind strengthens, the required run path length is reduced. This may allow alternative areas of the aerodrome (such as side paddocks) to be used. Where this is possible, it is preferable to using the runway and runway reserve.

In high winds, ground handling activities are best commenced at the upwind end of the training area. A reasonably long downwind run path is desirable in the event of a pilot being overpowered by their equipment and blown downwind.

### 4.1.3 Training Considerations

Persons either undertaking or instructing/supervising ground handling should remain mindful of conditions and the experience/competence of the hang glider/paraglider pilots. At no time should a pilot commence ground handling without a full appreciation of aspects of the site and weather conditions.

## 4.2 Ground Handling Procedures

It is assumed that persons undertaking ground handling of hang gliders or paragliders will either be trained in or will be receiving supervised training in the various ground handling techniques currently in practice. Therefore it is not in the scope of this manual to define any such techniques.

However it is doubly important at an aerodrome that persons ground handling hang gliders and paragliders guard against instances of out of control equipment endangering other users.

Persons are discouraged from undertaking ground handling entirely alone at an aerodrome. In the event of an accident, having another person nearby to assist/call emergency services is desirable.

### 4.2.1 Hang Gliders

In windy and/or gusty conditions, it is recommended that two experienced “wire men” are on hand to assist in keeping the wing level and pointed into the wind.

### 4.2.2 Paragliders

In windy and/or gusty conditions, it is recommended that an experienced paraglider pilot is on hand to act as an anchor and to help douse a canopy if required.

## 5 Communications

### 5.1 Verbal

Pilots/instructors intending to communicate verbally should ensure that they are in clear earshot of with whom they wish to talk. Communications should be short and precise. (e.g. “**Inbound aircraft – clear the runway.**”)

### 5.2 Visual

Visual signals are useful if verbal signals are difficult to hear (e.g. with background general aviation noise). Visual signals are limited to arm and hand signals (as the ground handling persons and their supervisors will be standing). These should be distinctive and clearly expressive (e.g. both arms



extended at shoulder width, palms facing down with a downward arc of the arms would be a signal to douse all paraglider canopies).

## 5.3 Radio

Given the physical proximity of the person's ground handling with each other, or with their supervisors, communication between these persons is normally sufficiently covered either verbally or visually.

Generally only an airband VHF radio is required for ground handling at aerodromes. The manner of any such radio communication should be consistent with the requirements and conventions imparted during the airband VHF radio endorsement process.

When using an airband VHF radio, the following guidelines should be followed:

1. Only a suitably endorsed person may operate an airband VHF radio.
2. Only the designated frequency for the aerodrome is to be used.
3. Use of the airband VHF radio should be confined to communication with general aviation traffic.
4. Care must be taken to ensure that the radio is not "locked on".
5. The manner of any such radio communication should be consistent with the requirements and conventions imparted during the airband VHF radio endorsement process.

## 6 Emergency Procedures

General emergency procedures (call for assistance, render First Aid) are to be followed in the event of an accident resulting in personal injury.

Where any accident/incident has the potential to affect aviation traffic at or in the vicinity of the aerodrome, a descriptive warning is to be broadcast via the designated airband VHF radio channel.

Persons attempting to provide any form of assistance in the event of an emergency should do what they can to keep themselves out of danger.

### 6.1 Hang Glider

The most likely specific hang glider related emergency scenario related to ground handling would be a loss of control of the wing due to high winds.

In such a case, persons want to assist should approach the equipment from the upwind side (to prevent it being blown onto them) and grasp a single secure point as far out toward the windward wing tip as possible.

Ideally (if the wing is still upright and intact), the wing should be turned so that it is facing away from the wing with the upper surface facing the wind and resting on the rear part of the keel.

If the wing is broken, persons seeking to assist should beware of sharp spar stumps and entanglement by loose wires.

## 6.2 Paraglider

The most likely specific paraglider related emergency scenario related to ground handling would be a loss of control of the wing due to high winds. This often results in the pilot being dragged (sometimes after first being thrown).

In such a case, persons want to assist should seek to depower the wing. They can grasp a wing tip to allow the glider to stream downwind (if they have approached the glider from upwind). Alternately they can grasp the glider by the middle of the leading edge, allowing it to stream downwind either side of them (if they have approached the glider from downwind).

Depowering the wing is preferably to grasping and holding the pilot. Grasping and holding the pilot may injure them. It may also serve to power up the wing even more (due to the extra weight) causing a violent wing reaction with an added associated injury potential.

## 6.3 General Aviation

General aviation operations have their own emergency procedures. In the event of an aerodrome on-field emergency, it is appropriate that hang glider and paraglider pilots and instructors make themselves available to assist, but seek direction from general aviation personnel first.

An inbound aircraft in an emergency situation will generally broadcast “Pan Pan Pan” or “Mayday Mayday Mayday” on the aerodrome’s designated airband VHF radio frequency. The persons engaged in ground handling will also be monitoring this frequency thus will also hear this message. Upon hearing such a message, all ground handling activity is to cease immediately and the runway and runway reserves cleared of all associated equipment as soon as possible. Pilots are to divest themselves of their harnesses. Paragliders are to be bundled or folded and placed into bags. Hang gliders are to be collapsed if there is time.

If a crash occurs, the crash site is only to be approached under direction from general aviation personnel (if they are present). If no aviation personnel are present, the basic rules of first aid are to be followed:

1. Check for any ongoing danger for the rescuer of the victim(s) (do not attempt to move any victims unless leaving them where they are will endanger their life further)
2. Attempt to elicit a response from any victims
3. Send for help (call emergency services 000)
4. Ensure that airways are preserved
5. Check whether the victim is breathing
6. If not, apply Cardio Pulmonary Resuscitation (CPR) as required
7. If able to and if required, utilise a portable defibrillator
8. Tend to any injuries as able and as required

If an emergency helicopter is called in, ensure that all flying equipment is away from any areas likely to be affected by rotor downdraft.