



2.0 AIRFIELD OPERATIONS

The smooth running of the airfield, the efficient use of aircraft and equipment and above all, the avoidance of accidents depend upon an efficient organisation on every flying day.

Organisation and operational requirements are governed by: -

- The Law.
- BGA Operational Regulations.
- Club Operational Regulations (see Introduction).
- Health and Safety Executive.
- Insurance and duty of care - to which references are made in the text.

2.1 Delegation Of Responsibilities

The Law : Air Navigation Order, 1995

BGA Op. Reg 7.2 states:-

The CFI shall have overall responsibility for all matters concerning gliding operations from the club site and no flying shall take place without his authority. His decision in flying matters is final. He may appoint Rated deputies to carry out his instructions in his absence, but he remains responsible for all flying matters.

A diagrammatic representation of a typical airfield management chain is shown in the diagram below.

2.2 Duty Instructor

Whenever flying training takes place, an instructor with a minimum of Assistant Rating must be present. Basic instructors may only operate under the supervision of an assistant or higher rated instructor.

The Duty Instructor is in charge and will delegate responsibilities to Full, Assistant and Basic instructors, winch and / or tug

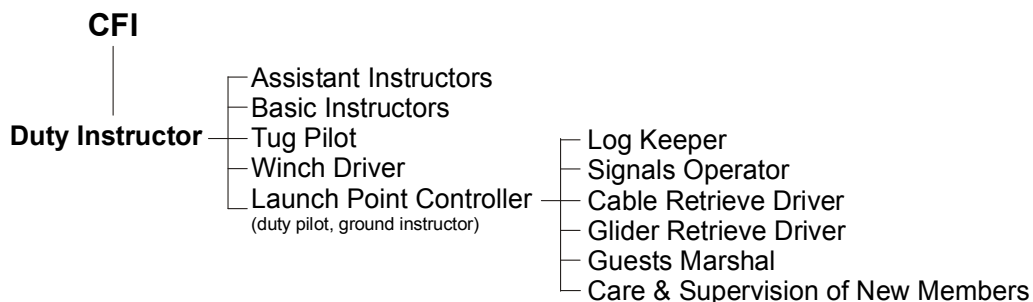
pilots and the launch point controller (LPC) or duty pilot (DP) who will further allocate the remaining duties, as listed.

2.3 Before Flying

The Duty Instructor should ensure that the following tasks are undertaken before flying begins:-

- Check suitability of weather for safe flying
- Checking NOTAMS, Temporary Navigation Warnings (TNWs) and Aeronautical Information Circulars (AICs) for relevant information.
- Inspection of airfield for condition, obstructions and to identify any operational problems for the day.
- Undertaking communications, eg. to inform local airfields or Air Traffic Controllers, as required by Letters of Agreement.
- Unpacking the hangar(s).
- Rigging, de-rigging club aircraft as required.
- Daily Inspection of all aircraft and equipment.
- Obtaining a weather forecast.
- Setting up the launchpoint and launch equipment
- Checking and setting up any emergency equipment.
- Provide clear instructions to LPC on minimum criteria for launching for the day's conditions at that airfield (aircraft in circuit, ground obstructions etc.).

At some sites a formal briefing to everyone involved on the proposed operation for the day may be necessary





2.4 After Flying

At the end of the day's flying, the duty instructor is responsible for checking to ensure that every glider is accounted for. If not, then emergency procedures should be initiated (see Case C, Section 5.1). He should also take responsibility for putting away and checking aircraft and equipment.

2.5 Hangar Packing / Unpacking

Many clubs have a rule to ensure that the supervision of packing or unpacking the hangar(s) is restricted to club approved persons. The penalties of allowing mistakes to happen, inflicting "hangar rash" or worse, on aircraft and equipment, justify the need for care.

Only one person should be in charge and that person should be both responsible and accountable to the club. A wide variety of techniques is employed at different clubs but all require the exercise of skill and care. All too frequently, aircraft are damaged when these principles are disregarded.

2.6 Daily Inspections

All aircraft, winches, ground and emergency equipment require daily inspection by a suitably trained and qualified person, approved by the club. Details of these requirements are provided in the BGA Instructors' Manual, the BGA Winch Operators' Manual, the BGA Glider Daily Inspection Record and the flight manuals for each aircraft.

All defects or problems should be reported.

2.7 Parachutes

Under BGA Operational Regulations (O.R.6.12) parachutes are only mandatory for cloud flying. The parachute is a vital piece of emergency equipment and should always be kept in full working condition. To ensure that parachutes can be relied upon to work in an emergency, the following precautions should be observed:-

- Parachutes should be checked and repacked periodically according to the manufacturer's recommendation.
- The parachute should be kept dry and clean at all times.
- Never put a parachute down on the ground.

- Never allow a parachute to become contaminated with fuel, oil or acid.
- Always store in a dry, clean place. A heated cupboard is advisable, especially during the winter months.
- Parachutes should be checked as part of the glider's D.I.
- If the parachute has become damp or contaminated, or if the release pins under the flap are bent or have been partly withdrawn, the parachute should be declared unserviceable and sent for servicing and re-packing, straightaway. See R.P. 16.

2.8 Glider Towing and Handling

Members need to learn the necessary skills to enable them safely to handle gliders on the ground. Teamwork and clear communication are required, together with a clear understanding of the risks involved.

Unlike powered aircraft, gliders are incapable of moving themselves on the ground. Manoeuvring, parking and positioning gliders on the airfield or in the hangar is accomplished either by manhandling or by towing behind a vehicle.

Whichever method is used, there are a number of principles that need to be observed, both for the safety of the glider and for those moving it.

2.9 General Glider Handling

A number of general points should be observed at all times:-

- Whenever the glider is being moved, someone must hold on to one wingtip, unless appropriate reverse towing gear is used.
- When changing the holding of wings from one person to another, the person handing over calls "YOUR WING" and the receiver of the other wing replies "MY WING". This is a clear, concise handover and must be used whether on the field or in the hangar.
- Glider canopies are easily damaged and are expensive to repair. Never leave the canopy open when the glider is unattended. Always close and lock the canopy.
- Avoid reaching through the clear vision panel of the canopy to close airbrakes or to release the cable.
- Never reach through the clear vision panel of the canopy when the glider is moving.
- Never lift the canopy by the edge of the clear vision panel.
- If the canopy is stuck or will not open, summon qualified assistance.





- Manhandling the glider is the preferred method for short distances or downhill. The correct method for handling the glider is as follows:-
- It is always preferable to move the glider backwards.
- If a glider has a tail-skid, it must be lifted clear of the ground, using the handle provided (NOT the tailplane or the elevator!). If the glider has a tail dolly or removable tail wheel, it should be attached.
- Always push on the strongest part of the wing which is the leading edge. (No glider should be pulled or pushed by the trailing edge of the wing, rudder or canopy).
- Whenever the glider is being moved by hand, someone must always hold on to one wingtip. This is :-
 - (i) to control the direction by steering the glider.
 - (ii) to ensure that the glider cannot be blown over by a gust of wind.
- In strong winds, someone should be seated in the glider to prevent it from lifting off and to hold the controls steady.
- When moving a glider downwind, always ensure that the ailerons and rudder are held, either by placing restricting locks in place or by someone seated securely in the cockpit holding the controls or by someone walking behind the control surface and holding it firmly to prevent it from slamming against stops or hinges when caught by the wind.

2.10 Towing

Towing is the preferred method when the glider needs to be moved quickly or for greater distances than can easily be accomplished by manhandling. Towing involves hooking the glider to a vehicle and pulling it in a forward direction while being stabilised and steered by hand.

Safe towing requires the following points to be observed:-

- The rope used should not be less than one wing's length and should preferably be a wingspan in length. This is to ensure that if the glider is turned unintentionally while on tow, the wing will not hit the towing vehicle.
- Always attach the rope to the belly hook of the glider. This will ensure that if the glider is groundlooped, the back release will operate detaching the glider from the towrope and avoiding further damage. It also makes the glider easier to steer by the wingtip holder.
- A third member of the crew should always walk in front of the glider especially where there is a downslope or a tailwind. He can stop the glider from over-running the tow vehicle, release the towrope if necessary and can communicate between the wingtip holder and the tow driver.

- The driver of the tow vehicle and the wing holder must be in constant communication with each other so that in an emergency, the driver can stop immediately if required. It is not always possible to be in verbal communication, but visual communication is essential. The tow driver should keep a constant watch on the wingtip holder and respond to previously agreed signals.
- If the tow vehicle is a car, the windows should be open and the radio turned off, so that the driver is aware and able to hear commands such as STOP!

2.11 Parking Gliders

Gliders should always be parked so that they are secure and stable and cannot be blown over and damaged by a strong gust of wind. The built-in stability of a glider will cause it always to weathercock into wind. Once facing into wind, the wings will generate lift and if the wind is strong enough, the glider will take off on its own or will simply blow over. To avoid that happening, take the following precautions:-

- Gliders should always be parked with one wing into wind, with the airflow from slightly behind the trailing edge.
- The into-wind wing should be held firmly on the ground by using pickets, tyres or some form of ballast that cannot damage the wingtip.
- Always place tyres or moveable ballast so that it moves with the wing. Do not place tyres partly on the ground and partly on the wing. If the wingtip moves, the tyres will be displaced, the wing will rise and the glider may blow over.
- Prevent the glider from weathercocking by placing tyre or chock under the nose skid and by placing tyres or chocks on the downwind side of the tailskid or by picketing the tail.
- Remove tail dollies or detachable tailwheels.
- Lock airbrakes in the "Closed" position to prevent ingress of water and to reduce drag.
- Prevent the rudder from slamming against its stops or hinges, either by placing a "rudder lock" in position or by moving the rudder to its full travel on the downwind side and carefully placing a tyre or ballast against the rudder on the upwind side.
- Close and lock canopies.
- To provide additional stability when parking in strong winds or when strong gusts are anticipated, place a tall trestle or park a vehicle (suitably cushioned and protected) under the high wing.

Note. Some glassfibre gliders are very tail-heavy and will not weathercock. Those gliders may be parked safely by placing the downwind wing on the ground and leaving the into wind wing up. That





parking configuration has the added benefit of avoiding the need to place tyres or ballast on highly polished, expensive gel coat. But parking "wing up into wind" is not recommended for all glassfibre gliders, since many (e.g. Puchacz, Ka21) are not tail-heavy and need to be parked in the standard manner, i.e. in the same way as wooden gliders.

If in doubt or if threatened by sudden gusts or by squally weather conditions either stay with the glider or allocate someone to stay with each aircraft.

2.12 The Launch Point: General Hazards and Safety Precautions

The launch point is the most hazardous area of the gliding field with a number of risks. Safety precautions are of paramount importance and the following should be observed at all times:-

- Always follow the instructions of the Launch Point Controller (LPC).
- Stay behind the glider to be launched unless specifically authorised to go forward by the LPC.
- Do not obstruct the LPC's line of sight and signals communication.
- Do not walk in front of a glider once a cable or rope has been attached.
- Be aware when handling ropes or cables. They might move unexpectedly. Never touch the second cable when a glider is being launched on the first cable. There is always a risk of the second cable becoming entangled with the first and becoming "live". (See Winch Operators' manual).
- Noise should be kept to a minimum at the launch point to stop interference with the launch signalling process.

2.13 Launch Point Procedures

The requirements for cable launching (winch, auto-tow and reverse pulley systems) and aerotowing are considered separately and the special procedures for operating aerotowing and cable launching concurrently are dealt with as a separate section.

2.14 Cable Launch Procedures

Launching is a team operation and the following tasks should be allocated:-

- Launch point controller or launch marshal in control of launching.
- Log keeper recording details of all launches and landings.
- Wingtip holder.

- Signals operator relaying instructions to the winch or car driver.
- The winch or car driver operating under control from the launch point.
- Cable retrieve vehicle driver.

The Winch Launch Sequence

The tasks involved are illustrated by a typical sequence of events, as follows:-

- The Launch Point Controller (LPC) or someone delegated by the LPC removes the cables from the retrieve vehicle when it arrives. He must make sure that the second cable is well clear of the first and that the parachute attached to the second cable is well clear of aircraft, people or ground obstructions. The down-wind cable is normally used first. (See BGA Winch Operators' Manual, page 8). The cable retrieve driver then returns to the winch when the route is clear and waits in a safe area until the next launches are completed.
- The LPC selects the appropriate strop and weak link for the glider to be launched. A chart giving the appropriate weak links for each glider should be available at the launch point. Alternatively, each glider should carry a sticker in the vicinity of the belly hook and on the instrument panel, indicating the correct weak-link strength and colour coding. Finally, it is the pilot's responsibility to know the appropriate weak link and to check that the correct link has been attached.
- The pilot must be in position, with his glider suitably lined up at the head of the launch queue, forward of any launch point control vehicles, with his pre-flight checks completed and ready to launch.
- The LPC (or someone delegated by the LPC) takes the cable to the glider and waits for the pilot's instruction to attach the cable. By accepting the cable, the pilot indicates that he is ready to be launched.
- The pilot indicates that he is ready to launch by asking for the cable.

Note. When individual launch strops are used for different glider types, these should not be attached to the glider before they have been connected to the cable. It is important that the pilot is always in control of the connection to the winch and that may not be possible if the strop is already attached to the glider. There is serious risk of an inadvertent launch if the glider is connected to the winch without the pilot's instructions.

- The LPC asks the pilot to open the cable release hook with the word "Open" and when the ring is in place, he asks the pilot to close the release hook with the word "Close". The pilot will repeat the instructions to affirm.
- The LPC checks the security of the cable attachment by pulling on the strop, forward of the weak link assembly. This checks the ring in the release mechanism and also checks the security of the intervening linkages. He





then lets go of the cable, calls "Cable on and secure" and stands clear.

- The LPC then checks for any potential conflicts with the launch.
- On receiving the "Take up slack" signal, the winch operator initiates the launch procedure.

Note. If any potential problem is identified, then the launch should be stopped. Whoever spots the problem should shout "STOP" and hold one hand above the head as a visual signal. The Signaller will then relay the STOP signal to the winch, using the prime signalling system, backed up by a verbal "STOP" command. It is the responsibility of everyone at the launch point to call for a STOP if a potential threat to the safety of the launch is identified.

- If a STOP signal is given, or the pilot wishes to abort the launch, the pilot should release the cable immediately.

Note. At some clubs, local custom may involve variations to the above sequence of actions. Pilots visiting other clubs should check on local procedures.

2.15 Aerotow Launch Procedures

The following tasks must be allocated:-

- Launch point controller or launch marshal in control of launching.
- Log keeper recording details of all launches and landings.
- Wingtip holder.
- Signals operator passing instructions direct to the tug pilot, either by manual signals or by radio.
- The tug pilot.

Note. If necessary, the first four of these tasks may be undertaken by the same person.

The Aerotow Launch Sequence

The tasks involved are illustrated by a typical sequence of events, as follows:-

- The gliders are arranged in a launch queue or in parallel launch queues, adequately separated. The next glider to be launched is moved to a forward position with the pilot ready to launch, having completed his pre-flight checks.
- The tug pilot lands with towrope attached and taxis into position at the head of the launch queue. NB. Where the manoeuvring area is restricted, the tug pilot will need to turn after landing and taxi downwind to the launch point. In certain circumstances it may be necessary to drop the towrope before landing and to re-attach it for each launch.
- The Launch Point Controller (LPC) or a member of the launch crew collects the glider end of the towrope, checks the towrope for

knots and condition generally, then takes the towrope to the glider to be launched. (If knots or damage are discovered and cannot immediately be removed, the towrope is detached from the tug and replaced with a serviceable towrope).

- The LPC (or helper) waits for the pilot's instruction to attach the towrope.
- The wingtip holder lifts the appropriate wing (preferably the downwind wing) of the glider. The LPC (or helper) asks the pilot to open the cable release hook with the word "Open" and when the ring is in place, he asks the pilot to close the release hook with the word "Close". The pilot will repeat the instructions to affirm.
- The LPC (or helper) checks the security of the tow rope attachment by pulling on the towrope. He then calls "On and secure" to the pilot, lets go of the towrope and stands clear.
- The LPC then checks for any potential conflicts with the launch.
- The LPC then signals to the tug to take up slack at the same time calling out to the pilot "Taking up slack".
- The tug pilot moves steadily forward. When the slack is removed from the towrope, the LPC signals "All-Out" to the tug pilot.
- The wingtip holder runs with the wingtip, keeping the wings level and the glider straight until the pilot establishes sufficient aileron control to hold the wings level. If there is any degree of crosswind, it is usual for the upwind wing to be held. However, for some gliders (those with poor directional control and liable to weathercock into wind), it is preferable to hold the downwind wing. The pilot may specify which wing he prefers to be held.

Note. During the "Take up Slack" phase the LPC will constantly be checking for problems on the ground or in the air and will STOP the launch if a problem is identified or if anyone else at the launchpoint gives a "STOP" signal. If a STOP signal is given, the glider pilot will release the towrope immediately. At some clubs, local custom may involve variations to the above sequence of actions. Pilots visiting other clubs should check on local procedures.

2.16 Procedure for Concurrent Cable Launching and Aerotowing.

A mixed launch operation is only feasible if there is sufficient space available to enable each system to operate on a separate area of the airfield and where an operating system can be developed to avoid any conflict between the two launch systems. Vital factors necessary to avoid conflict are: -

- There must be no confusion between the aerotow and the winch launch signals.
- The two launchpoints should be within view of one another

