

GROUND HANDLING

Introduction

These procedures describe the safe methods of moving gliders in and out of the hangars, moving them about the airfield and parking them on the airfield.

Moving gliders by hand

Take care not to damage gliders with the metal fittings in your clothing such as zips, belt buckles and metal watch straps. To new members it may seem surprising how heavy gliders can be to move around. Any glider should be moved by at least two people, one to hold the wing and another to pull or push on the fuselage. While moving the glider, the person on the wing can steer it in the direction of travel and the other can provide the motive force. On softer ground, it may be necessary for the two people to push the glider backwards, each person pushing on the wing about three metres from each of the wing-roots. Only one person is needed on the wing tip, except under extremely windy conditions when two might be needed at the same wing-tip. **Never drag a glider forwards or backwards by its wing-tips.** For similar reasons, do not try to turn a glider without raising the tail off the ground so that the glider can pivot on its main wheel. Do not lift the tails of gliders by the tail-plane; they are not designed to take the loads.

Some gliders have tail-dollies that should always be used before moving them. If it is ever necessary to move or tow one of these gliders with no tail dolly fitted, never attempt to turn the glider by pulling on the wing tip while it is moving. Stop the tow before turning the glider and balance it on the main wheel as above.

Some gliders, such as the K13, have small handles on the fuselage, just forward of the tail-plane and these are meant to be used to push the glider forward or backward. Some parts of gliders are not strong enough for pushing or pulling. These parts are the trailing edges of the wings, tail-plane, rudder and the canopy. Do not manhandle gliders using any parts that are covered in fabric; these are fragile.

Canopies

Never leave a canopy open or even unlocked unless you are actively monitoring it while getting in or out or while stowing gear. The wind it can blow an unlocked canopy open or shut and so break it.

Canopies may be opened to make pulling easier by pulling on strong parts of the fuselage at the front of the cockpit area or on the seat straps. However care should be taken not to allow a canopy to fall shut. This may break any hand in the way or may break the canopy.

Canopies are remarkably expensive (a K13 canopy costs about £2000) and they are particularly fragile in cold weather. Allowing a canopy to drop a small distance or even trying to close it over a strap can cause it to crack. Canopies should always be closed when the aircraft has stopped, and no glider should be abandoned with its canopy unlocked or open. Do not tow any glider with the canopy unlocked. The rattling of the canopy could cause it to break.

Take care whenever reaching through the DV panel. (K13s all have external canopy handles.) Do not reach inside through the clear-vision panel if the glider is moving, for example to pull the release knob. The stress on the cut-out for the panel may cause the canopy to crack if there were a sudden movement of the glider while an arm was inserted. Jackets with bulky sleeves may also put unnecessary stress on the aperture.

Moving gliders in and out of the hangar

Each year a substantial amount of damage is done by mis-handling gliders in the hangar. Extra care must be taken in the hangar not to strike a parked glider with the one that is to be moved. If you strike another glider, inform the duty instructor or the CFI and note it in the DI book. In the case of a privately owned glider, contact the owner by phone. You will not be reprimanded. It is far more important that any damage is reported in case a damaged glider is flown, and so that repairs can be started immediately.

Do not lift a glider's wing in the hangar without first checking that the other wing and tail are well clear other gliders.

All Lasham's club gliders can pass in and out of the main hangar, provided that the main wheel runs along the centre-line between the doors. However within the hangar, space is always restricted and it is very easy to strike another glider while looking at another part of the glider. It is recommended that three people should always move gliders within the hangar: one watching each wing-tip and one watching the fin and tail-plane. Only one person should be holding a wing-tip. Responsibility should be accepted by called "My wing". Anybody should shout "Stop" if a problem is developing.

Packing the hangar efficiently requires some experience. If a few gliders are put away poorly, it is often necessary to empty the hangar to reposition these, so that the rest of the gliders can then be put away.

Tail dollies

If there is a tail dolly, use it, even if it means looking for it in the hangar, trailer or the bus.

It is risky to lean on the nose to raise the tail of a glider because it may bang down as the glider is turned, putting unnecessary strain on the tail-plane fitting. Zips on clothing often scratch the gel coat, so if you have push down on the nose take great care.

Always ensure that the tail dolly is seated correctly on the tail before doing up the catches, this will avoid forcing the catches and risking breaking them, or damaging the gel or both.

Always take the tail dolly off when the glider is parked either on the airfield or in the hangar to avoid the glider moving in the wind. It is important to also do this in the hangar to avoid damage when the hangar doors are opened on a windy day. Always remove the tail dolly immediately on joining the launch-queue as launching a glider with the tail dolly attached is hazardous. Before getting into any glider, check to ensure the tail-dolly has been removed. The weight of the tail-dolly will seriously affect the stability of the glider in flight.

Always replace tail dollies and any other tow out gear in the correct place either in the hangar or in the trailers at the end of the day or after use. That way the next person will be able to find them, and you will not take them home in your car!

Towing a glider with a buggy or car

To tow a glider any distance by buggy or car, a tow rope more than half the wing-span of the glider should be attached to the aerotow hook on the glider, and if towed by car, the driver should have all the windows open so that he can hear any calls from the other tow crew. Switch off the radio. During a long monotonous tow, people have a tendency to day-dream and forget their responsibilities. Stay alert.

It is the responsibility of all concerned to keep a good look-out to avoid obstructions on the ground such as other cars and gliders. All people should also be vigilant for landing aircraft. If an aircraft is on finals, the car should stop and allow the aircraft to choose its landing area. A moving obstruction makes it more difficult for the pilot.

The wing-holder should aim to steer the glider's main wheel between the vehicle tracks so that the rope is always pulling the glider forward rather than exerting a strong sideways load. (This can happen if the car is travelling too quickly). Always release well before an obstruction and manhandle the glider the final few yards.

Lasham airfield is flat but it is not level. There are slopes which are initially hard to recognise. On a hard surface especially with a tail-wind and a down-slope, it is very easy for a glider to collide with the vehicle in front. There should always be someone walking by the glider's nose in order to look out for obstructions such as tyres and potholes and to stop the glider from colliding with the towing vehicle. The person on the nose can also quickly open the canopy and release the tow-rope should a problem appear. A person on the wing would have to stop steering to get to the release. Do not tow out gliders on short ropes with a tail dolly but without a nose walker. Ropes should be at least three quarters of the span of the glider in length

When the grass areas are wet, particularly in winter, tow out on the hard taxiways to avoid making ruts in the grass. Do not run along the grass just beside the perimeter track as this will create a particularly persistent rut.

If you cannot use the perimeter track, keep the glider to one side of the grass areas to avoid obstructing the landing area and continue parallel to perimeter track. When you reach a point more or less 90 degrees from your destination, be it the launch-point, trailer or hangar, cross to it. A diagonal track across the landing area will occupy too much valuable space. While crossing the landing area to your destination, watch out for aerial traffic. If in doubt, wait.

If you have to tow your glider past other parked aircraft or vehicles, ensure that you pass them slowly and if you cannot see your way clear then get the car to stop and manoeuvre the glider by hand. Get the wing-holder to move to the wing nearest the obstruction in order to make sure that there will be no risk of contact. The glider can pick up speed quickly when it moves onto a hard surface after the grass. Be especially careful as you approach other gliders at the launch point.

Strong winds

The minimum number of people needed to tow a glider is three but when it is windy more may be needed

If moving a glider downwind in strong winds, there is great risk that the glider will be blown into the towing vehicle. In such circumstances it may be better to manhandle the glider. However if landing at the hangar it is safer to fly just past the hangar and then push it back to the hangar downwind, than to tow-it into wind after landing.

When there is no wind, it does not matter which wing is being held. However if the conditions are breezy, then the wing-tip holder should hold the into-wind wing. This is because the weight of this person can be used to hold down to wing, should the wind try to lift it. On the other wing, the wing-tip holder cannot bring the same force to bear and so there is a risk the glider will blow over onto the wing-tip holder. Keep the into-wind wing low and ensure that the into-wind wing is held at all times if the glider is turned. When changing direction while towing, be ready to swap wing tip holders so that the upwind tip is always the one being held, and keep the upwind tip low, don't let the wind get under it

In strong winds, gliders should be towed with someone sitting in the front seat and strapped in. Otherwise a tail-down position can contribute to a glider being blown off the ground. The airbrakes should be held fully open. The rudder pedals should be braced to stop the rudder banging against its stops.

In very strong winds, gliders must not be parked but should be returned to the hangar. Do not abandon gliders (any glider) by the hangar without parking them properly – it might be a sheltered corner when you leave it, but a small change in wind direction can have it gusting round the corners

One-man towing-out gear

Some gliders have “one-man tow-out gear” by which a driver can tow a glider without any external assistance. This is usually the realm of private owners who want more independence but many of the ground rules still follow. The glider should not be towed quickly; the idling speed of the car’s engine should suffice. Without any other assistants, it is the driver’s responsibility to watch out for obstructions ahead, for landing aircraft and to ensure that the wing-tip dolly also stays on the ground. Even greater care should be taken when passing other parked traffic. If you aren’t sure whether you can clear an obstruction, then ask someone near by or get out of the car to check the clearance.

While waiting for a launch

While waiting at the launch point, do not leave a glider unattended in a strong breeze or even stronger winds. The canopy should be closed unless the pilots are getting in or out. In very strong winds at least one pilot should sit in the cockpit, strapped in with the airbrakes held open and the canopy closed. In extremely strong winds do not even turn the glider into wind until the take-off checks have been completed and the launch is imminent.

Do not sit on the wing of any glider.

Never step over wings or fuselages, always make the effort to walk round.

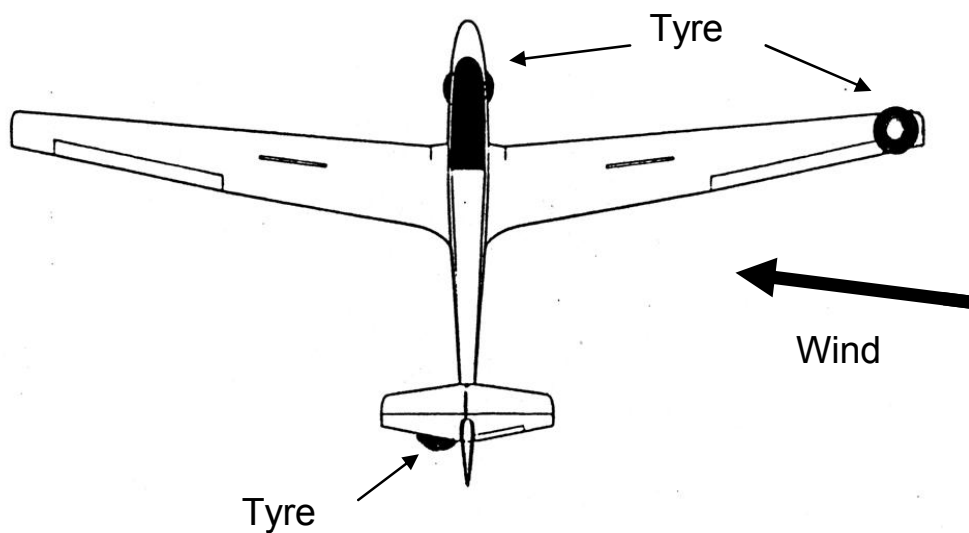
Parking gliders

Before parking a glider ensure that:

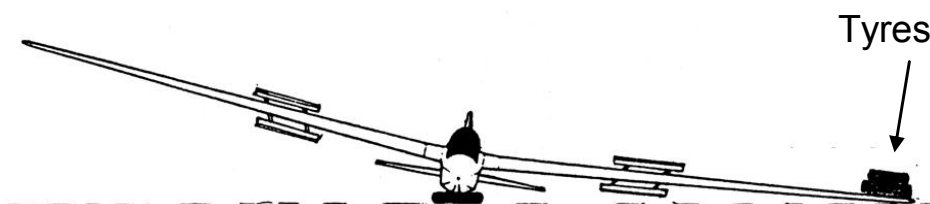
- No sudden deterioration of the weather will occur
- The parking location will not hinder flying operations
- Someone has accepted responsibility for returning the glider to the hangar

To park a glider with wings that are relatively light per unit surface area, such as a K13 or Ka8, turn it across the wind and put the into-wind wing on the ground. The wind should blow slightly from behind the trailing edge. This is to ensure that if there is a slight shift in the wind, it does not come from in front of the leading edge. For K13’s and Ka8’s a tyre should then be placed on the part of the wing tip that is reinforced by plywood, but take care not to put tyres over the fabric areas. In stronger winds more tyres should be placed on the wing-tip and a tyre under the nose and another on the lee side of the tail to prevent weather-cocking. The tyre at the nose is to stop the tail of the glider being lifted over the tyre at the back. Gliders should never be left pointing directly into wind. Close and lock the canopy and close the DV panel. If heavy showers are expected, take the parachutes out of the glider.

PARKING A K13



The tyres at the front and back are to prevent weather-cocking



Airbrakes fully open
The whole tyre on the wing-tip

Gliders made from composites have wings that are generally heavier per unit surface area. Consequently they are less likely to move in a breeze. Many pilots parking these gliders in light winds will place the down-wind wing on the ground and will not put a tyre on the wing. However in strong winds all gliders should be anchored as mentioned above if parked.

In very strong winds, such as from a passing squall, it may be necessary for two pilots to sit in the glider, strapped in, while someone holds down a wing-tip of the parked glider.

If you are parking your glider on the main runway, do not leave it for long. There are times when a jet movement is due when many gliders must be moved in a hurry.

Putting gliders away

The pilot in charge of a flight is responsible for a glider until it is handed over to someone else. If a glider is no longer wanted by someone, it must be put away. The person taking charge of it is responsible for putting it away, even if he/she does not then fly it.

Ensure that no parachutes are left in gliders overnight. The only correct place to store the club's parachutes in the parachute-store in the club-house. Batteries should be put on charge daily.

The batteries for the DG1000s should not be taken out but instead the leads should be should be plugged into the glider.