Welcome to:

Shalbourne Gliding

Introduction for New Members



"Welcome to Shalbourne!

I hope that you enjoy learning to glide as much as I did. You have joined the select band of those who know the magic of flying like a bird on invisible air currents, seeing our beautiful countryside from high above and racing at speeds that a car couldn't keep up with – all with no engine. Pure magic!
We all remember the first day we arrived at a gliding club – we had no idea what went on, or how, and so this booklet and the induction briefing are to explain the basics to get you going. You will quickly learn the ropes, and soon you'll find you're a fully-fledged club member – and in this case, we mean it literally – when you fly the nest on your first solo flight."

Phil Morgan, Chief Flying Instructor

Introduction

We are glad you have just joined Shalbourne Gliding. This short guide gives an introduction to the Club, its members, and what to do as far as ground operations are concerned. Please note that it does not replace the various manuals and procedures in place in the Club – you will discover these as you learn to fly - but is an overview to make things simpler in your first days at the club.

Your flight training will be covered in detail by your instructors, but gliding is much more than flying and to become an accomplished glider pilot you need to be familiar with all aspects of the club.

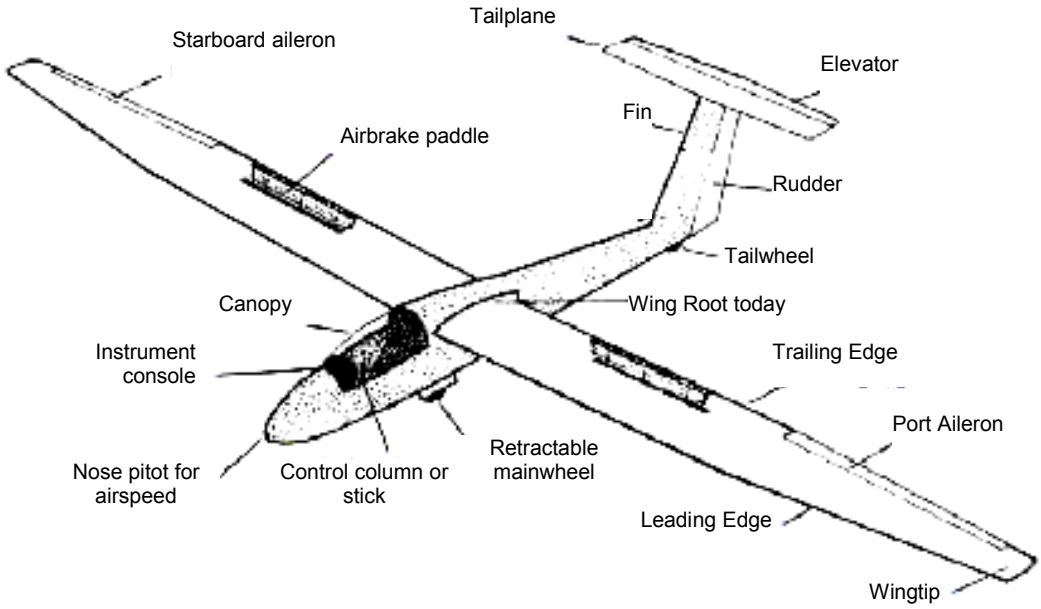
Gliding is the ultimate free flying experience. It is a truly diverse sport that can be enjoyed at all levels: from the thriving club scene, to aerobatics, to the international racing competitions, currently dominated by British pilots (with five World Champions).

The gliders you will fly use the same air currents as soaring birds, but have also been designed with the kind of aerodynamic efficiency that enables top speeds of up to 170 mph. Distances of over 600 miles have been covered in one day in the UK and heights of almost 40,000 feet have been achieved. Gliding gives you the freedom to explore the world from a birds eye view and discover the many moods of the sky.

Gliding is also a sport for all ages - from those who go solo on their 16th birthday through their club cadet schemes to those who are looking for something challenging in their retirement; there is no upper age limit.

Before we start the induction, let us check that we can name the various parts of a glider with their function.

Briefing 1 - Naming of parts and use of controls



Now, let's get started! First what do you need to know about the site.

. . . FIRST FOR YOUR COMFORT

The airfield at Shalbourne is like most airfields. It has its own weather system that defies the best attempts of the weather forecaster to predict. Wind strength in towns is always multiplied by three. The type of clothing you may need on the field depends on the day, it is wise to bring warm and waterproof clothing even on warm looking days. Always pack a pair of wellies. In the summer bring sunglasses and a hat of some sorts. Watch out for sunburn and stinging insects especially when the horseflies are about. Food is usually available at weekends and for gliding courses but you are on your own on any other days. Bring something hot to drink in winter and plenty of cool fluids in summer.

1. Airfield Introduction - Site layout and safety

These instructions refer to the map below.

1. When you enter the airfield via the Main Gate, stop and look right. You may see either a red chequered caravan, or a winch. If you see neither then go to step four.

2. If you see the caravan, turn right and drive down the right-hand side of the airfield keeping close to the road. Park your car in the area marked on the map and ask

for the Duty Pilot. If the caravan is on the opposite side of the field DO NOT CROSS - wait for someone to come and escort you.

3. If you see the winch, turn right and drive down the right-hand side of the airfield. Park your car in the area marked on the map. Flash your headlamps, or wave to attract attention but STAY CLOSE TO YOUR CAR, a club member will come over and give you further instructions. This may take a few minutes if a glider is being launched.

4. If you see neither the winch nor the caravan, turn left at the gate and proceed up the hill keeping to the left (West side) of the field. The hangar and clubhouse will be found at the top of the hill. When you get there, ask for the Duty Pilot.

If you are in any doubt please call the airfield mobile 'phone 07884 220573 or Clubhouse: 01264 731204

Safety Notes:

> Depending on wind, the direction of takeoff and landing may be from the top (North), or bottom (South) end of the airfield.

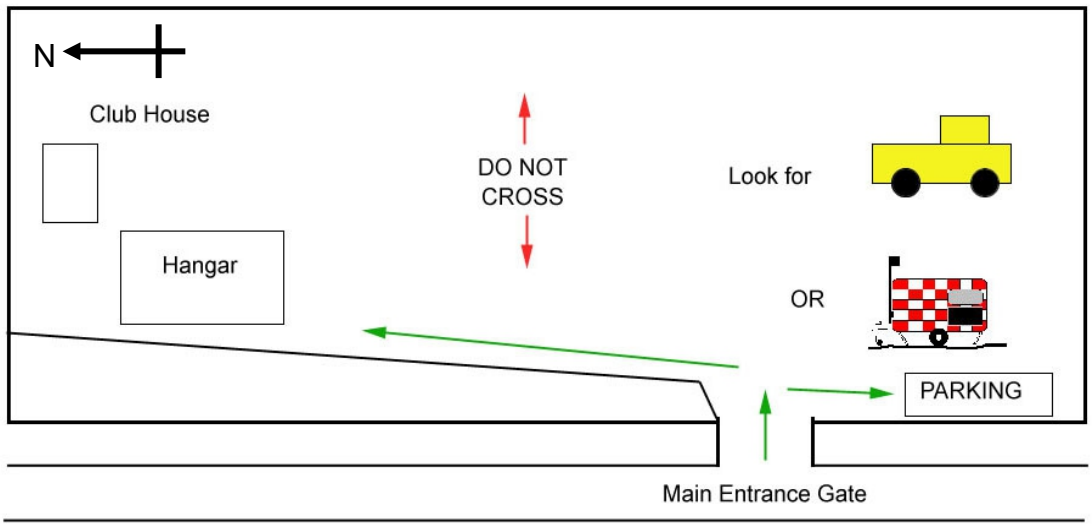
> Gliders are launched using a steel cable nearly a mile long. When the glider reaches the top of the launch, it drops the cable. As the cable falls to earth it can drift to either side. The moving cable is dangerous, so keep well clear of it.

> Please do not cross the field at any time unescorted. Even when nothing appears to be going on, a launch can start at any time without warning.

> If you see a glider landing please stop until it has come to rest.

> Please be aware that even when the airfield is deserted it is always technically active and aircraft can land from any direction, silently and without warning. SO, KEEP A GOOD LOOKOUT.

If in doubt, follow the instructions on the yellow sign at the gate and proceed around the south end of the airfield and up the east side.



Tip : you are encouraged to come as early as you can. Firstly you will learn a lot from helping to set-up the field and secondly you will be in the first ones to fly!

Now it is time to meet some key members in Shalbourne Soaring Society. The Club is run by a committee in charge of specific functions. Of course, all the members have their say through various forums and mechanisms.

Who's who:

SSS Committee	
ROLE	**NAME**
Secretary	Nigel Burt
Chairman	Jonathan Garner
CFI	Phil Morgan
Deputy CFI	Pete Smith
Treasurer	Steve Barber
PR	Stephen Ottner
Aircraft Officer	Jim Clark
Airfield Officer	Colin Baines
Equipment Officer	TBA
Safety Officer	Pete Smith

Your instructors are:

Ken Porter, Richard Dann, Pete Smith, Jim Clark, Stephen Ottner, Carol Pike, KenReid, Liz Sparrow, Tim Robson, Colin Baines, Chris Bessent, Bob Boyd, Peter Ellison and Phil Morgan who is the Chief Flying Instructor. He has responsibility for the overall supervision for all aspects of flying and ground operations. Beyond the safety aspect, the CFI encourages all flying members to improve their skills and achievements and maintain high standards of instruction in the club.

2. Ground Handling

2.1. Ground Handling

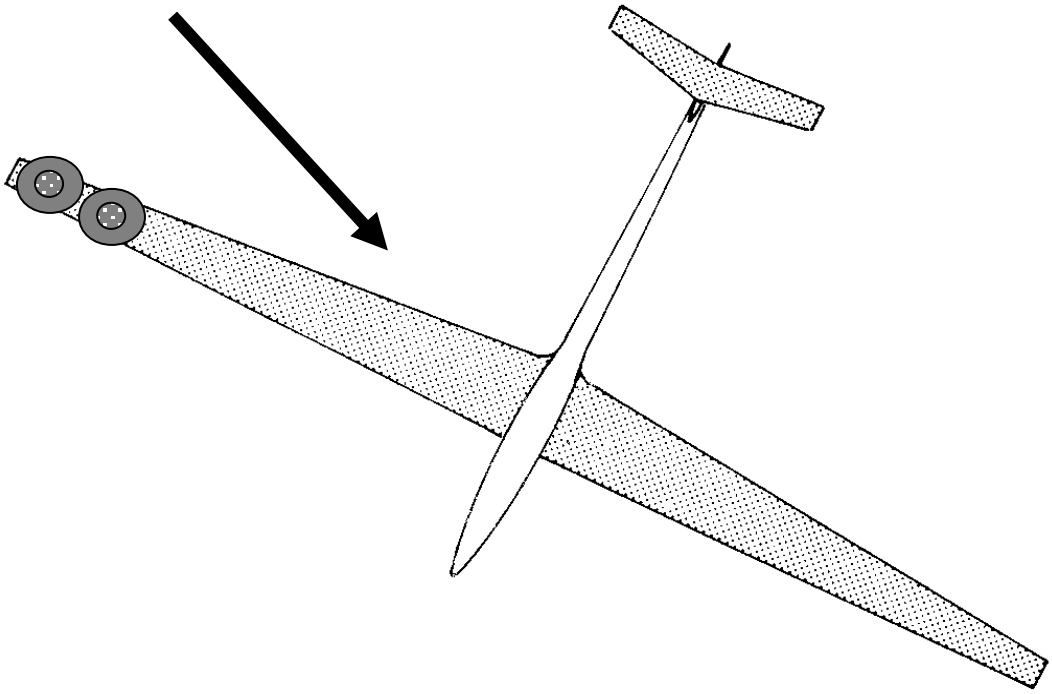
When ground handling gliders, it is essential that loads are not applied to any part of the airframe that is likely to suffer damage.

The tail plane and the trailing edges of the wings are particularly vulnerable. The leading edge and tip of the glider wing are strong; the trailing edge is easily damaged, so never handle the glider by the trailing edge. If in doubt, ask an Instructor, senior club pilot or the owner for advice.

2.2. Parking Gliders:

Gliders must be parked securely at all times on the airfield. Always use sufficient tyres to picket the wingtip and ensure that gliders cannot roll or swing. Take account of the prevailing weather conditions, wind strength, direction, gusts etc, and if necessary use extra tyres under the nose and by the tail. The responsibility for moving an aircraft along the launch queue rests with the pilot who is to fly it next. When not in use, aircraft must be parked well clear of the launch point, aligning them crosswind (ie. wing into wind) and securely picketed using sufficient tyres as the weather conditions dictate.

Briefing 3 – Parking a glider



In light winds, gliders should be parked facing into wind, but in heavier or gusty winds turn the glider so that the wind blows over the trailing edge of the wing, as indicated by the arrow in the illustration. (Allowing the wind to blow over the leading edge could cause the wing to 'fly')

- Light gliders with high wings (i.e. k13, k8) should have their into wind wing down (to reduce the chance of the wind getting under the wing and flipping the glider over onto its back).
- Heavier glass gliders with low wings should have the downwind wing down, to reduce the chance of the wind causing the glider to suddenly flip from right wing down to left wing down (or vice-versa).

Whichever wing is placed on the ground, weigh it down with one or more tyres.

- Usually private owners won't appreciate a tyre on their wing – ask first!
- Tyres should be placed completely on the wing tip, if a tyre is partly on the wing and partly on the ground it will rub the surface of the wing as the wind moves it.
- In strong wind more than one tyre may be required. In this case they should be placed side-by-side on the wing, rather than stacked one on top of the other. This reduces the odds of the stack blowing over and either damaging the wing, or lightening the wing sufficiently for the wind to flip the glider.
- In very strong wind it may be necessary to (carefully!) jam a tyre under the nose of the glider to reduce the odds of a gust lifting the tail plane and flipping the glider over its nose. The rear wheel / skid should also be chocked with a tyre to prevent it from being pushed sideways.
- **Canopies**: great care should be taken when opening and closing canopies especially if you have to reach through the little window (DV Panel in glider speak). Never use this window as a handle to lift as it will surely break the canopy. Canopies should always be left closed and locked.

Finally:-

Tail dollies should be removed when the glider is parked. This will stop the wind from rotating the glider, potentially causing damage to it and other gliders.

2.3. Towing Gliders:

We always use three people to tow a glider on the ground, one driving the tow vehicle, one holding the glider wing tip, and one in front of the nose to prevent the glider over-running into the car. The person on the wing tip is in charge as he can steer the glider. All club gliders have dedicated tow out gear so that they can be towed by one person in a vehicle. Care must be taken to select an appropriate gear and safe towing speed. Do not attempt to tow gliders without being shown how to do so.

2.4 Using Weak Links:



The weak link is essential to protect the glider from excessive loads if the winch jerks the cable or if the pilot pulls the gliders up too steeply during the launch. Weak links are colour coded depending on their strength i.e. a weak link is designed to break when the design strength applied to it is reached. Therefore, depending on its weight, each glider will require a different type of links and you will soon become familiar with which glider takes which link e.g.:

- K8 Blue link (max 1320 lbs)
- K13 Brown link (max 1870 lbs) – below



Brown link – link goes at 'winch end' of assembly

Glider end:



3. *Log Keeping*:

Flight recording (log-keeping) is a legal requirement, as well as being essential for the collection of flying fees and compilation of Club statistics. So it is important that the log-keeper has sufficient experience and knowledge to perform the task effectively.

a. Remember to enter the day and date on each sheet.

b. The surname and initials of each pilot must be printed clearly.

c. Take off and landing times must be recorded in the appropriate columns: use the clock in the Launch Control Caravan to ensure continuity.

4. Launching & Cable Retrieve:

4.1. Launch procedure:

Whilst you are waiting your turn to fly you should familiarise yourself with the operation of the launch point. Three people are required to launch a glider. One to run the wing tip, one to attach the cable and one on the log to signal to the winch (O.K. so it's five if you include the pilot and winch driver. Just testing.)

The tip runner holds the wing tip level until the glider is going fast enough for the pilot to control the wing with the stick. In cross winds it is helpful if the "into" wind wing is held slightly low.

The cable 'attacher' (Launch Marshal) is responsible for controlling the launch, from the time the pilot accepts the cable until the glider is in the air. Once both cables have been used a retrieve vehicle drives to the winch to pull out the cables ready for the next launch. When you will have more time, you can find a more detailed procedure in appendix 2.

4.2. Retrieving Cable:

The launch cables must be pulled out from the winch to the launch point in a straight line, the retrieve vehicle aiming for and stopping upwind of the glider to launch.

5. Q & A

How long can a glider fly?

There are two answers to this. The longest flight that has been officially verified is 1 401 miles (2 256 km) although there has been a recent claim of a 1,925 mile flight (3,080 km) in South America. The longest in terms of time is several days set in Poland – but because of the obvious safety issues, there are no longer duration records. In the UK, the 1000 km mark has been achieved in 1995 and in recent years the soaring conditions have been very good.

How high can a glider fly?

The UK height record is just over 39 500 ft (achieved in Scotland) and the world record is 50 721ft set by the late adventurer Steve Fossett. Just for comparison, a 747 will fly at around 30 000 ft and Concorde used to fly up to 60 000 ft

What is the fastest glider?

Gliders normally fly in the 40-80 mph (64-130 km/h) speed range. Maximum speeds are up to 200 mph. The fastest flight on record was on a 500km out-and-return flight in Argentina which managed an average speed of 191 mph (308 km/h) – in comparison the fastest F1 race was at an average speed of 247km/h over 305km distance.

What keeps a glider up in the air?

A glider unlike a power plane relies on the force of gravity to propel it forward through the air. To maintain flight a glider must continually fly "downhill". But this slope is very shallow – the best gliders will fly for over 12 miles for 1000 ft height loss.
If a glider tries to fly level, it will lose airspeed and eventually stall. Therefore a glider will always be descending relative to the air which it is flying (most modern gliders will descend at a rate of 150 feet per minute or less. This is referred to as the *sink rate*.)
So back to the question, how can a glider fly for hours? The answer is in the up-draughts that exist in the atmosphere (glider pilots talk of *lift* or *thermals*). If we can find air that's going up at more than 150ft/min – then overall we will be climbing. The art of gliding is to locate these up-currents and stay in them as long as possible!

How do thermals form?

When the sun's energy strikes the earth, different surfaces will heat up at different rates. This differential heating means that adjacent areas of air may vary in temperature by several degrees. As the temperature of air increases, it becomes less dense and will want to rise. If there is enough energy the parcel of air will rise and this is known as the thermal.

Can you see thermals?

No, thermals are invisible. Finding thermals comes with experience and this is why the more experienced pilots get the longer their flights tend to be. Soaring requires you to look carefully at the environment, the nature and colour of the fields, the wind direction, the slope of the ground, etc. to search for thermals triggers. Soaring birds and other circling gliders are the best clue and few experiences are more exciting than sharing a thermal with a buzzard. Towns and power stations can also be good thermal sources. Guess why…

Are there any Scholarships available for gliding?

There are several scholarships available. Some tend to be offered only for a limited period to commemorate an event for instance the 100th Year of Flying so you have to be quick applying for them. The best is to visit regularly the British Gliding Association website http://www.gliding.co.uk or ask your instructor for the latest information. However, even if you don't win a scholarship, Shalbourne charges reduced rates for membership and launches for the under-21s in full time education.

How do I stop an operation in progress e.g. launching? In what circumstances would you do that? Who can do that?

Raise both arms and shout "STOP". Anybody can do that (you do not need to be an instructor or an accomplished pilot) if they have safety concerns. An example would be a glider is about to be launched whilst another one is about to land. If there is an imminent danger, e.g. the possibility of the landing and launching gliders paths converging, the glider should not be launched. Do not assume that if you have detected a problem everybody will be aware – speak up! Safety always prevails and no one will blame you for being cautious.

And finally
You can find the latest British Gliding Association Laws and Rules for glider pilots at:
http://www.gliding.co.uk/forms/lawsandrules.pdf