

# Ground Rules

*This briefing document is based on an original article by Russell Rarity and Alastair Coutts, who wrote it after visiting Portmoak to attend a course. Their article was published in **Portmoak Press**, Volume 2K, Issue 12, July 2003.*

Caveat: please get an instructor or other experienced member to give you a practical demonstration before your first attempt at any of the tasks mentioned.

So you want to go gliding! When I was learning to drive a car I used to turn up at the Driving School, meet the instructor and jump straight into that rather embarrassing BSM-badged Metro before leap-frogging away down the road in a variable direction and at a variable speed. A colleague tells me the same sort of thing happened when he did his PPL in Australia – there was that nice Cessna sitting on the hard-standing just waiting for him to weave it towards the runway. Unfortunately the same cannot be said for gliders so, assuming that you want to go gliding and spend as much time soaring as possible, here are a few tips on how to maximise your time aloft. You will notice as you read that there is absolutely no mention of the intricacies of glider flying, because this tells you how you can get them (and therefore you) into the air as much as possible. This is all to do with groundwork and airfield tasks, without which the K21 and its like stay firmly on terra firma! Take the time to read this through, because you will realise that it does indeed make sense and will get you onto that winch cable as much as possible – and that is the whole point of your being there. Some tasks are less than exciting, but they all add up to getting you airborne fast and often.

## ***The start of the day***

Club gliders, like expensive cars, get garaged overnight. What's more, the functioning airfield gets put away at the end of each day and returns to virgin field. The first job is to get it all put back again, so you can go gliding! Although the course info says that the day starts at 0900 it takes about 45 minutes to get the first glider in the air, so it pays to get to the airfield rather earlier. If everyone is there by about 0815 then you will probably be in the air just after 9, and will have snatched the best part of an hour's extra airtime – over the week almost the equivalent of an extra day! However on the first day you should turn up at 0845, so that you can have your inaugural instructor's briefing (with or without tea/coffee and one of the club's famous breakfast rolls) and be shown the tasks that follow!

Getting the field and gliders ready:

- Get the hangar keys and open up the old hangar (where the towing vehicles are) and the main hangar (where the gliders are). Replace the hangar keys when you've done this! If you keep the keys in your pocket and lose them on the airfield you will not be popular.

- Disconnect the launch caravan from the battery charger and check fuel, oil and water in the 'mobile' (truck). Finally check there is a towrope for later glider use! Push the caravan out of the hangar and over to the edge of the airfield. Make sure that there is a 'flying log' and 'flying sheet' in the caravan – it's more than likely to be in the clubhouse after the previous day's flying.
- Get the correct parachutes and put them in the glider(s) that you will be using: carefully remove them from their bags (don't put them on the ground), put one in each seat and the carry-bags in the right wing-root.
- Install and connect the glider batteries: they are glider-specific so you will need to work out which glider you will be using. You will need to be shown how to do this, as it is a bit fiddly and you have to secure the batteries 'by feel' (especially in the K21).

*You can do all this on your own – but it helps if there are more hands about!*

- Getting the gliders out needs three people. Fully open the doors for the aircraft you want. When moving a glider on the ground there should always be someone at the wing-tip to steer the aircraft.
- Pull the glider out forwards, bringing the wings level as you do so. Don't pull on the canopy – it will crack or break, and render the glider unable to fly. Similarly never push on the control surfaces. Because of the risk of damage it is normally the most senior person that takes the wing tip and is in charge of the process. Pull the glider straight out onto the slab positioned for it, and turn it there, ready for towing. Close the hangar doors.
- Assist the instructor in the Daily Inspection (DI) and the positive control checks.
- Assist in putting the launch caravan into position. Top-up fuel, oil and water in the other 'mobile' (down at the workshop).
- Pull out the first set of launch cables (see later for how to do that).

## ***Routine launch point operations***

### Towing gliders (including retrieving):

You are going to do a lot of this – both at the start of the day and every time you retrieve a landed glider. There is one golden rule: never drive faster than walking pace when towing a glider and never tow it without a wingman and a brakeman. One person takes the wing and a second walks in front of a wing-root, to prevent the glider overrunning into the towing vehicle. Driving the retrieve means driving at idle in first gear. Do not slip the clutch while towing. Keep an eye on what the glider is up to on the end of its tow-rope and remember that the 'mobiles' can get through gaps that not even the glider's tail can, let alone its wings.

There are a few other points:

- When going to retrieve, drive on the road wherever possible – even if it means you are not making a beeline for the glider.
- **Keep a continual watch for other landing gliders.**

- Back up to your chosen glider with your nose pointing in the way you want to set off. You can always turn the glider round to point in the same direction. They spin on a sixpence when one person pushes down on the nose (for K21s) and the wingman pivots the glider on its main wheel (this tip is also useful when lining up the glider towards the winch for a launch).
- Take up the slack on the tow-rope gently – try to get the tow started without a jolt.
- **Tow at idling speed** – keep your feet off the accelerator and the clutch.
- Keep out of the landing area and out of the area in front and to the sides of the launch caravan – if you don't you will impede other launches.
- Remember – you are small and the glider is wide. Avoid going close to obstacles, as you will miss them but the glider won't.
- To release the glider, reverse slightly to let the tow-rope slacken, and then get someone to release the cable from the glider. Do this by opening the canopy and pulling the yellow release knob. Do NOT attempt to pull the release by sticking your hand into the DV panel. Canopies get broken this way, and you won't be very popular, as the glider can't fly with a broken canopy!
- Tidy up the towing cable as soon as possible – don't drag it over wet or muddy ground, or beside glider wingtips that the rope might catch on – and park the vehicle next to the launch caravan on the far side.
- For extra brownie points: avoid puddles, boggy bits and very rough ground – you can drive over them, but the two behind will have to walk through them! You might also want to offer the instructor the honour of driving – otherwise s/he does a lot of walking over the day.
- When the retrieve distance is small, it's not worthwhile using the truck but better just to push the glider backward towards the line.

#### Towing out the launch cables:

This is the least popular job, but arguably the most important – without cables you can't launch! Check with the instructor which mobile is to be used. In the morning the winch driver will get the winch out and put it in the correct place at the end of the field. If necessary he will also run the cables, but if there's enough crew at the launch point it's better to do it yourselves. It saves quite a lot of time if you don't have to wait for the winch driver to get back to the winch after the cables are delivered. However, don't get stuck doing this job – you are there primarily to fly.

So, just in case you're doing it:

- Back the truck up to the winch drums so that the cables can be hooked on. Try to get in-line so that you don't run the cables out unevenly to begin with, and pick the point that you're going to aim for: the on-line gliders or something directly in line with them and the winch. If in doubt, ask the winch-driver.
- Gently move off, heading directly towards the gliders waiting for the cables. There will be a jerk or two as the drums begin to unwind.
- Gently accelerate to a maximum of 15 to 20 mph (too fast and you'll get shouted at by the winch man, but too slow wastes time). Get into 2<sup>nd</sup> gear as soon as you have enough speed to do it smoothly, and don't change after that. (It is almost impossible to change gear once

you have a significant proportion of the cable dragging behind you.)

- **Keep in a straight line heading directly for the gliders** – any significant arc in the cables and you may force the winch man to rewind the cables. This is very embarrassing!
- You will need more power as the cables run out – but don't be tempted to change gear as at best you will jerk the cables and may cause a loop at the winch end, and more likely you will stall. Just keep a steady power on and don't let it fade.
- Do not slow down or stop midway unless you have to – depending on how far from the winch you are, you will find it very difficult to get going again and will chew large holes in the airfield and in the clutch! However, **you must keep a good lookout** for landing aircraft, or for anyone crossing the cable line ahead or behind you, and stop (as smoothly as possible) if you think it necessary.
- Drive straight up to the gliders and stop within a few feet of them – stopping is easy, if timed correctly, as the cables will slow you down as soon as you take your foot off the accelerator so you can use them as your brake. Stopping short means that you have to move the gliders – there is no way that you will be able to get the drums turning again without doing serious damage to airfield and your clutch. 2<sup>nd</sup> opportunity for serious embarrassment!
- Reverse a foot to take the tension off the cables, **make certain they are released**, and then get out of the way. Watch the gliders – they are very close and the mobile's turning circle is not fantastic! Avoid reversing over the cables if you can, especially the strops as they can get damaged and subsequently cause a 'cable break' on launch.

#### The launch van (and launching tasks):

This is the driest job! You are there to assist the launch, record flight details and keep an eye on aircraft movement on the airfield. The caravan's callsign is "Portmoak Base" or just "Base".

#### *Setting-up at the beginning of the day:*

- Open up the caravan, turn the master switch to "on" and line up the signal lamp with the winch – use the gunsight. Remember to tighten the nuts afterwards.
- Do a radio check with the winch, and a signal light check – remember to tell any gliders that you are going to do it and make sure that nobody is anywhere near the cables, just in case they go 'live' by accident.
- Check again that you have a 'flight log' and a 'flying list' (the latter is for flying order for non-course members). You should have already done this at the beginning!

#### *Assisting the launch:*

- Get the details of the glider about to be launched and its occupants, with any other relevant details (like "5 hour flight attempt", "Cable break/power failure practice").
- When the cable is being attached to the glider, radio the winch with the following message:  
"Winch – Base: glider type, no. of people on board (for 2-seaters), cable identification"  
*examples:* "Winch – Base: K21, two-up, north cable",

or “Winch – Base: Junior, south cable”,  
or “Winch – Base: K21, solo, remaining cable”, etc.

- Remember to take your finger off the ‘transmit’ button afterwards – otherwise s/he won’t be able to reply. Talk slowly and clearly.
- Wait for acknowledgement from the winch.
- Wait for the wingman to signal “take up slack”: s/he is in charge of the launch – by accepting the cable the pilot(s) have declared that they are ready.
- Check that nobody is touching the other cable (if present). Only then: press “take up slack” button and keep it pressed.
- Watch for the wingman to signal “all out”.
- Press and hold the “all out” button, and watch the glider go along the launch.
- Release the “all out” button only when the glider is about 150 feet up – it’s only then that the winch can see it well – and keep an eye on the glider until it is released from the cable.
- Enter the launch time on the flight log and, if there is an unintentional cable break, log it (as the pilot won’t get charged for the winch launch).
- Don’t let anybody go near the other cable until the winch has reeled in the cable and the winch light has stopped flashing. It is possible for the second cable to be picked up by the first if they overlap at any point.
- Do not start a launch unless you know that it is safe to do so.
- **At all times be on the lookout for hazards and look and listen for “Stop” commands – you are the only one that can signal the winch to do that.**
- **Do not give a Stop signal after the glider is airborne.** At this point the pilot and the winch driver have the best chance of controlling the situation, and a sudden cutting of the power may make things worse.

#### Cable and launching business:

It’s important, before you do anything with a cable, to **check that the orange flashing beacon on the winch is off**. If it isn’t then the cables are live – which means they are probably the most dangerous things on the airfield and should not be approached. Having said that, you’ll need to handle them when they are safe:

- When the cables arrive take them off the mobile and ensure that they are laid out in such a way as to ensure that they don’t get crossed or tangled on launch.
- If there is a crosswind, the downwind cable should be used first (to minimise the risk of the first cable blowing across the second).
- Ensure that the correctly coloured strop for the glider to be launched is attached to the cable (e.g. black for the K21; blue for the Junior). If in doubt, ask the pilot.
- Lay out the cable end so that there are no knots or kinks – do a quick visual inspection to check for damage. Make sure that the cable is as straight in front of the glider as possible, not pulling to one side.
- Wait to be told to attach the cable (only the pilot can tell you, as it means that s/he is ready to go), and show the strop to the pilot first.
- Attach the cable and give it a pull to check it’s firmly attached. Tell the pilot **“cable on and secure”**.

- Then move to the wing tip and level the wings.
- If there is a crosswind, the downwind wing should be held. (The glider tends to weathercock into a crosswind, and holding the downwind tip helps to prevent this.)
- Check that there is no hazard, especially above and behind. Look especially for gliders about to land. Shout “**All clear above and behind**” if that's the case.
- Say and signal “**take up slack**”. (Do not abbreviate this; the fact that the three commands “take up slack”, “all out” and “stop” have 3, 2 and 1 word(s), is not accidental. It all helps to make them immediately understood and impossible to confuse with one another.)
- Keep on signalling until the cable goes taut.
- Say and signal “**all out**”.
- Run with the wingtip, keeping it level, until the glider has accelerated enough for the control surfaces to start to work (normally less than 10 paces). Let go as soon as the tip flies out of your hand.
- At any time, if you think there is a significant hazard, you must shout and signal “**STOP**”.

**Note:** Before the first flight by each glider each day, the cable release mechanism is tested. This involves checking the “back release”, by attaching the cable normally and then pulling it straight backwards, towards the tail of the glider – it must release from the hook. The “release under tension” is also checked, by attaching the cable normally and then pulling the release whilst someone pulls hard on the cable. Some pilots may ask for a “free drop” as well, but this is not required.

#### Other duties in the launch caravan – and opportunities for ‘delegation of tasks’!

- Keep an eye on aircraft landing – identify them and log their ‘time down’. Remember that you and other club glider users are charged for airtime by the minute.
- Keep one ear on the radio – any messages beginning “Base” are for you!
- Make sure that gliders are being retrieved appropriately, giving priority to club gliders.
- Make sure that cables are available.
- Make sure that the launch area doesn’t get too cluttered or obstructed by parked gliders that aren’t waiting for a launch.
- Keep an eye on the flight list, but don’t interfere with squabbles unless you absolutely know who’s in the right!
- Generally ensure that the airfield is active in a safe fashion. Encourage and ask others to help – after all if they don’t you have the theoretical power to not help with their launch.

The launch van is the best place to learn how the airfield actually functions and you will pick up all sorts of useful tips and hints from others, including tips on flying.

#### Other useful things to do:

- Help your fellow course members by doing things like helping with straps – loosening them before they get in and generally assisting. The straps can be difficult to get positioned right if you are not used to them. It’s important to get the lap strap really tight before tightening

the shoulder straps.

- Help with drying wings and control surfaces (but take great care with the canopy as the Perspex scratches easily). On K21s: avoid wiping down the rear fuselage as you may drive water into the (tiny) static vents on either side of it (slightly behind the total energy tube), and render the ASI unserviceable.
- Generally be 'useful' without interfering or getting in the way. Remember that for every Chief there have to be a number of Indians, but you might find that there are contestants for the title of Chief of Chiefs and nobody wants to be an Indian!

### ***At the end of the day:***

Everything needs to get put away:

- Putting the gliders away is exactly the same as getting them out, only in reverse. Remember 'chutes and batteries.
- Once all gliders are back in the hangar, lock the main hangar door. Check that all the individual padlocks are in place.
- The launch caravan needs to be put on charge: into the old hangar, master switch to "off", charger plugged in and power switched on.
- The day's flight log should be taken into the clubhouse.
- The mobiles need to be put away (in the old hangar, except for the one based down at the workshop).
- Remember to let the winch know on the radio when you've finished launching for the day. He probably won't appreciate being left to guess that you no longer require his services!
- If you finish with one or both cables still out, then you must ask the winch driver to reel them in, one at a time, making quite sure no-one is anywhere near them. Confirm what is to be done by radio, then give a "take up slack" signal, followed by "all out" once the cable starts to move.
- Make sure that your own personal pilot's log is up-to-date.

You've had a good day both in the air and on the ground, gliders have been launched and retrieved efficiently and safely and you will have been appreciated as an active member of the gliding community. What's more, you will have enjoyed every minute and met many people who have a common purpose – flying gliders. And that's what you are there to do.

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