

BGA MGIR Notes
Steve Williams – (Updated April 2006)

BGA MGIR rating has three stages to it:

- Stage 1 – Glider and engine handling, upper air exercises, circuits, approaches and landings
- Stage 2 – Stage 1 exercises plus map appreciation and glider navigation
- Stage 3 – Stage 1 and 2 exercises plus simulated aerotow breaks, field selection and landing simulation and final glide simulation.

Basic Instructing

Exercises:

- Effects of controls
- Adverse yaw
- Turning
- Stalling – remember to do your HASSLL checks
- Spinning (this is not allowed in the SGC Falke)

Gliding exercises are best done after climbing to a desired altitude then bringing the engine back to say 1100/1200 rpm and reducing the speed to a normal gliding speed (say 50kts). **Manage the carb heat** (best to leave set it to hot while doing these exercises). You can turn the engine off altogether but this will entail a number of restarts of the engine in a short period of time, which is not desirable.

Circuit Practice

This is one of the big benefits of the motor glider. The ability to do repeat circuits allows the student to benefit from the previous circuit and correct his mistakes.

Try to decide the likely direction of your circuit before take off and sit the student on the inside of a proposed circuit with an unobstructed view of the field. His view of the field will then be similar to that from a conventional glider.

The zigzag circuit used in conventional gliders can be used but is not always necessary with a motor glider as you can fly consecutive circuits to demonstrate too high, too close, too far etc. Use your judgement as to what is required for a particular student.

Treat the circuit as an exercise through to completion of the final turn (which should be at a suitable height and a suitable distance back from the intended touch down point. Immediately after starting the approach instigate the go-round. This will be less disruptive to the field operations and you will soon be back up at circuit height to start the process again.

Fly the circuit with about 1100 rpm on the engine and the carb heat set to hot while on this low power setting.

Safety in the circuit is important. Use the radio to inform other pilots of your intentions (Parham traffic G-ZU down wind right hand for 22 for go-around). If you get into a conflicting position with another glider in the circuit then use the engine and give them room – remember you can!

Field Selection

Pre-brief on the basic criteria for field selection and the current status of the fields (crops being cut, field condition etc.). Include the decision process:

- By 2000ft – be in an area considering fields and terrain
- By 1500ft – pick 2 or 3 potential fields
- By 1000/1200ft – make your final field selection
- By 800ft position the glider well upwind and to one side of the landing field (high key area)

Remind your student that the altimeter is set to the airfield and the ground below may be much higher or lower so do not rely on your altimeter reading (remember around Lasham is approximately 500ft higher than Parham)

Set out the considerations when selecting a field (WiSSSO):

- Wind direction
- Size
- Slope
- Stock
- Obstructions (trees, power lines, electric fences etc.)

Get the student to fly around their chosen field to see it from different angles.

Beware of their perception of field length. Pilots often initially under estimate the size of field required. Slope is also a major consideration. On steep slopes, landing uphill but downwind with sufficient additional speed added is acceptable (e.g. to the south of the Downs at Parham). Into wind but down hill can be fraught with danger.

A common problem is the student only looking at the fields in front. Remind them that it might be worth doing a 360 degree turn as the best field opportunities may well be behind them.

Use this exercise to show your student some of the favourite landing out fields (e.g. Polo Fields or along the base of the Downs).

Field Landing Exercise

This is a major test of airmanship for the INSTRUCTOR! You must:

- Ensure that you are in fine pitch before you start this exercise.

- Manage the engine, particularly the carb heat. Ensure that you have a reasonable amount of fuel (e.g. 1/4 of a tank) as manoeuvring and turbulence close to the ground can cause the fuel to slosh about and this is not a good time for your engine to cough! (If you are running the engine for a long time at low revs it is worth giving the throttle a quick burst from time to time).
- Beware of the 500 ft rule. The 500ft rule states that an aircraft must not fly closer than 500ft to any person, vessel, vehicle or structure. Allow your student to go as low as possible to make it as realistic as possible but be alert particularly for farm workers, walkers, fishermen and people on horses.
- Remember that the 500ft rule also applies on your climb out so plan this in your mind and if you risk breaking the rule then abort the exercise and climb out early.
- Always keep a good look out at all times.

During the exercise:

- Allow the student to pick a field and if it is suitable for a trial circuit and approach then ask them to continue.
- Set the throttle to about 1100rpm and apply carb heat.
- Cramping the circuit is a common problem. Let the student get it wrong, don't prompt them. Pilots at this level of experience should be able to see their mistakes and they should get the next one right.
- Take over part way down the approach
- Discuss what worked and what did not work as you fly towards the next area in which to try a field landing.

Unless you are in a particularly remote location, don't do multiple field approaches into the same field or in the same area (we do not want to get complaints from the locals).

Trying to Soar Away from Your Chosen Field

This is a demonstration.

1. Circle over your chosen field at about 500ft (or lower if the location permits).
2. Allow your self to drift away from the field, still at the same height into an area of crop
3. Point out that to reach the chosen field would now stretch the glide to a point where you would risk being low and slow with the high risk of a spin when manoeuvring.
4. Pick the nearest suitable crop field and positively set up an approach into this.

It is much better for the pilot to land in a crop (possible damage to aircraft) than to try to stretch the glide into his chosen field and risk a spin (likely serious injury to pilot or worse).

Final Glide Exercise

The purpose of this exercise is to establish the thinking process that the student should go through to ensure that they complete a final glide safely or alternatively arrive safely in a field.

- Start the exercise 6 or 7 km from the airfield (e.g. NW of Pulborough).
- Altitude about 1000ft above airfield elevation, and set the throttle to 1500 rpm, which roughly simulates an Astir.

As you set off down track the student should:

- Monitor progress (visual sight to destination)
- Pick fields along the route (pick one or two fields ahead and remember the one behind which you might need to turn back to if the glide gets too marginal.
- Don't fly over the land able fields. Fly over the woods next to them. This will allow you to manoeuvre into a position to land in one of these fields if you have to. Landing in the field directly below you is difficult and dangerous when at low altitude.
- The student should declare if the final glide becomes too marginal and take the appropriate action (commence an approach into one of the fields chosen on route).

Pilots are often driven with tunnel vision, which only sees the airfield. This is very dangerous. By setting up a final glide, which is so marginal that it will probably fail, we can ensure that they are aware of what to do when it goes wrong!

Failed Launch Simulation

The motor glider can be used to show a student possible fields that could be used in an emergency during a low aero tow failure and to simulate a launch failure.

This is easily demonstrated when taking off to the south at Parham. Taking off to the north, the straight ahead option goes directly towards farm buildings and other property and should not be used. A simulated cable break can be demonstrated part way round the left turn over the sewage works.

Keep a good look out for returning tugs and gliders joining the circuit during this exercise. The instructor's airmanship and engine management are critical when manoeuvring at low level.

NAVEX

Set a task for the student and allow them to work through on their map and mark up the route, headings etc. By giving them plenty of notice they will spend as much time as possible going over their map (which is a good thing).

Pick a route that might be useful to them later e.g. in the direction they would go for their Silver distance flight. They probably have not seen that part of the countryside before.

Let them fly to the first turn point and towards the second. When the second is in sight it is probably a good idea to ask them to divert. Don't pick something big and obvious. They should work out how to get there without being able to see it. (e.g. having flown PAR-PTS-POP then divert to MIM). Masts are difficult to see.

Beware of airspace. In the area to the SW of Lasham it is easy to get uncomfortably close to Southampton airspace.

Get them to identify towns and features at regular intervals. Get them to challenge their assumptions and to correlate their decisions with at least two features (e.g. a major road, river or railway).

Beware of students getting confused when flying in a southerly direction. This is quite common. They visualise in the orientation of their map – get them to turn it upside down!

Management of the Flight

Things to remember:

- **LOOK OUT, LOOK OUT, LOOK OUT.** Beware; your student may be concentrating hard on his field landing and neglect to keep a good look out.
- Try to make it as realistic (glider-wise) as possible.
- **You** are responsible for the safety of the aircraft in flight.
- **You** are responsible for all engine management and fuel.
- **You** are responsible for the weight and balance of the aircraft.
- **Always** use fine pitch when close to the ground.
- Remember the 500ft rule – you are P1 and it is your licence that is at risk.
- Manage the flight to avoid annoyance to the local population.
- Vary the prop speed to simulate different gliders (K13, K21, Astir etc.).
- Use radio calls to keep other pilots informed if you are planning to do anything that is not usual on a gliding field (e.g. a go-around).