



STRATFORD ON AVON GLIDING CLUB

FLIGHT TRAINING PLAN

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1 - Introduction

Notes:

Gliding is a wonderful sport, and Stratford on Avon Gliding Club (SOAGC) is an excellent place to learn.

We know that you will enjoy your tuition at Stratford and we are confident that through this Training Plan you will make good progress towards solo status and beyond.

Enjoy your flight training.

2 - Safety First

We aim to have fun, that's why we all enjoy flying. Gliding is both fun and safe providing that we all follow the rules and guidance laid down, at all times. As soon as you arrive at the Club start thinking about safety:-

- Follow the rules as you learn them – we start with airfield safety itself.
- If you don't understand something ask – never feel afraid to ask why. If you aren't sure about a briefing, ask for it again.
- If you see something you think isn't right, then say so – immediately and if necessary, loudly.

3 - Before You Get to the Club

Health

You don't need to be superfit to learn to glide. We have pilots in SOAGC from 15 to over 80 years of age.

What you do need to be is well. Do not come flying if:-

- You have a bad head cold – the pressure change during launching could damage your ears (check if your ears “pop” when you swallow, if they do they are working normally).
- If you have had a heavy night and are suffering from a hangover.
- If you have taken alcohol. The permissible level is none.
- If you are in a foul mood.
- If you have a bad stomach or period pains.

SOAGC caters for many special physical needs – one of our two seat gliders is equipped for flying by hand only. However, we can only adapt our instruction to suit you if you tell us what you need. It is therefore vital that we know if you have any problems with:-

- Eyesight – peripheral vision might inhibit flight safety.
- Eyesight – we need to know if you are colour blind – glider controls are colour coded.

Notes:

- Movement limitations – we need to know that you can reach and operate all controls.
- Hearing – if you are hard of hearing we will adapt our briefing and instructional processes with you.

Finally, ensure that you bring food and alcohol free drink to the airfield with you. Your ability to fly will be impaired if you become light headed because you are hungry or thirsty.

Clothing

What you wear in a gliding club can also influence the rate at which your training progresses. It is important to be comfortable if you are going to concentrate properly.

In the Winter months:-

- Wear stout warm, water proof light boots – not great big walking boots or wellies which will restrict the movement of your feet and the feel that you have for rudder controls.
- Wear several thin layers of clothing to retain warmth. Ensure that you don't have very bulky, quilted clothing as you may find getting into the glider a tight squeeze. This is especially true for larger people.
- Gloves, not mittens.
- A warm hat is essential – but not one with a peak of any kind.
- Bring sun glasses. In the Winter the sun can be very bright and you will find it lower in the sky so that landings can often be made towards a setting sun.

In the Summer months:-

- Wear light clothing. It is up to you whether you wish to opt for shorts and tee shirts but if you do you should take care to apply sun block. Airfields and glider cockpits are a great place to get sunburn. Long sleeves and light, long trousers are a safer bet.
- Wear a sun hat to protect against sunstroke. Under no circumstances will you be allowed to wear a baseball cap or other peaked hat. These restrict upward vision.

Preparing for your Lesson

You can improve the rate at which you progress by reminding yourself what you did in the last lessons. Read about these exercises and the supporting theory in your textbook. Perhaps read about other topics in your current Training Plan stage which you have not yet tackled at the airfield.

4 - Training Plan Purpose and Scope

Learning to fly a glider is not in itself a particularly difficult task. Anyone able to drive a motor car is likely to be capable of learning to fly. However, there is a lot more to gliding than simply being able to control the aeroplane. This means at Stratford we will teach you to be able to:-

- Be fully conversant with all aspects of airfield and operational safety.
- Fly the aeroplane – and handle it safely on the ground.
- Understand the theory of flight itself.
- Understand the basics of how a glider is built and what it is capable of doing.
- Know the Rules of the Air (the Highway Code of the sky).
- Understand basic navigation.
- Understand weather with respect to gliding.
- Operate all ground vehicles and equipment.
- Recognise when to fly and when not to fly.

5 - Training Plan Format

Responsibilities

There are two parties responsible for your flight training – SOAGC and you.

The Club will provide you with all the practical instruction you need. We will also give you the supporting theory both through flight and classroom briefings. However, it is important to recognise that airfields are not ideal places for briefings on detailed theory. In this respect it is essential that you obtain a standard gliding textbook, or two, and that you read these as you progress through your own training programme. It is important to recognise that the SOAGC Training Plan document itself is not a gliding textbook. It is purely a syllabus.

Your instructor can recommend a gliding text book.

Instruction

SOAGC has a large number of BGA (British Gliding Association) trained staff instructors. Many of these instructors will be at the airfield every weekend but it is important to note that they operate within a duty rota which is designed to identify which instructors are responsible for flight training and airfield operation on each specific date.

It is normal for the Duty Instructor to carry out the majority of flight training on any day. As the instructional rota normally operates on a 3 to 4 week cycle and ab initio (early) students try to attend weekly, it is clearly impossible to fly with the same instructor throughout your flight training programme. It is quite natural that you will prefer to fly with certain instructors that you feel you get on with particularly well, but you must work within the rota system. This Training Plan is used by all SOAGC instructors to ensure consistent tuition.

Stage 5 Exercises – Post Solo

Ref.	Exercise	Exercise Purpose	Exercise Details
S5:1	Navigation	Basic navigation.	This is a detailed briefing or evening course to explain map reading, course setting, and use of compass and GPS.
S5:2	Gross Wind Landing 2	Student learns cross wind landing using wing low method.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Select crosswind approach line. • Approach at normal speed. • Maintain approach line on track with landing line by lowering into wind wing. Effectively a gentle side slip. • This exercise is optional.
S5:3	Sideslip	Student learns to steepen approach with sideslip.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Select high approach into clear area. • At normal approach speed lower left or right wing and apply opposite rudder, some up elevator will be required to prevent speed rising. • Before flare out return to straight flight for landing.
S5:4	Field Landing 1	Student learns to land into confined area.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Mark out a small area on airfield. • Practice approaches in to this simulated field.
S5:5	Field Landing 2	Field landing practice in motorglider.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • This is a specific short course with its own syllabus.
S5:6	WULFAR	Student learns Wulfar	This is a briefing only.
S5:7	Type Conversion	Student type conversions.	Detailed flight briefing required for each new type to be flown.
S5:8	Radio	Student learns to use radio.	This is a separate specialised course with its own syllabus.
S5:9	Flaps	Student learns to use flaps.	See type conversion S5:7.
S5:10	Bronze C	Student takes Bronze C.	This is a course of lectures followed by examination papers.

Ref.	Exercise	Exercise Purpose	Exercise Details
S4:18	Spin from Straight & Level	Student learns to enter and recover from spin from level flight.	<p>Flying demonstration and student practice to include:-</p> <ul style="list-style-type: none"> From straight and level flight at 45 kts, raise the nose to the point of the stall, finally applying and holding full up elevator. Then apply full left or right rudder to induce spin. After 180 degrees of rotation apply full rudder opposite to spin direction and then move the stick forward until spin stops and glider is diving. Return to straight and level flight using all controls normally.
S4:19	Spin from Turn	Student learns to enter spin from turn.	<p>Flying demonstration and student practice to include:-</p> <ul style="list-style-type: none"> Fly glider in a 20 degree banked turn. Gradually slow glider to the point of stall by easing stick back – the nose should not rise above the horizon. As glider slows apply in turn rudder to simulate over rudder in a flat final approach turn. As nose and in turn wing drop, try to raise nose with up elevator and hold off bank with opposite aileron. Glider will spin. Recover from spin as per S4:18.
S4:20	Spin from Cable Break	Demonstration of spin from simulated cable break	<p>Instructor demonstration:-</p> <ul style="list-style-type: none"> Dive glider to 85 kts then pull up into simulated launch attitude. At 60 kts push stick forward to simulate cable break recovery. As nose drops below horizon, before speed has increased, turn hard left or right and allow glider to spin. Recover from spin as per S4:18.
S4:21	Spin from Stall Recovery	Demonstration of spin from dive from stall recovery.	<p>Instructor demonstration:-</p> <ul style="list-style-type: none"> Stall glider steeply. Allow nose to drop well below horizon, before speed increases turn hard left or right and allow glider to spin. Recover from spin as per S4:18.
S4:22	Out of Position	Student learns to react to poor circuit position / sink	<ul style="list-style-type: none"> No demo, but instructor sets up the task
S4:23	Winch	Student taught to drive winch	<ul style="list-style-type: none"> Winchmaster responsibility

Briefings

Briefings are the heart of the Training Plan. You will only be able to perform an exercise well if you understand what you are supposed to do, and why. If at any time you do not understand what you are about to do, then ask for the briefing to be repeated.

There are several sorts of briefing:-

- The Daily Briefing – this will be given by the Duty Instructor at the beginning of each flying day. It is designed to highlight the airfield operational layout for the day, highlight any safety issues, assign operational duties to club members and determine any special needs. Everyone has to attend this briefing.
- Flight Briefing – before any flight your instructor will explain what exercises are to be attempted. A clear explanation of the anticipated use of controls will be included together with an explanation of the impact on the gliders attitudes and speeds. This briefing will often include flight theory as well as a clear explanation of the flying aspects.
- Flight De-Briefing – after each flight the instructor will give detailed feedback on your performance. Sometimes this will follow up a point made in the air when the instructor will have indicated that a fuller discussion will follow on the ground to save wasting valuable air time. The instructor will indicate whether you have completed the exercise(s) flown to a satisfactory standard, or whether they will need to be refown. Sometimes you may wish to reply them yourself even if the instructor is happy. This is perfectly acceptable. At the de-brief, the instructor will want to update both your Logbook and Training Card with the exercises flown.
- Formal Briefing – during a flying course, or as part of a series of evening lectures, an instructor will give a formal lecture upon a particular topic. Every effort should be made to attend these briefings to supplement your background reading.
- Cross Country Briefing – a specialised briefing for pilots choosing to fly cross country. This includes the setting of a task and a weather briefing. Non cross country or solo pilots are welcome to attend.

Exercises

All exercises which the student will handle will first be demonstrated by the instructor. This means that you will not be surprised by the effects of the controls when you fly the exercise and that you will know precisely what is expected of you.

There are a few exercises which you will not be expected to fly but which will be demonstrated by the instructor to help your general understanding.

All exercises will be carried out within a strict safety routine with clear height and speed guidelines. During flight the instructor will make clear who is doing the flying by stating "I have control" or "You have control". With the latter you

should respond with “I have control” and when handing back control you should state “You have control” to the instructor.

Progress

The SOAGC Training Plan is categorised into several learning stages. This allows both you and the several instructors you will fly with to know exactly how far you have progressed within your Training Plan. This will prevent any wasted flying time with an instructor who has not flown with you recently and who needs to find out how much you know before progressing further. It will also help you to develop a sense of achievement as you progress through a clearly staged process.

Although there are some indications given with regard to the number of flights needed for each stage in the Training Plan these are to be regarded purely as the minimum. There is really no such thing as an average student and we all progress at different rates. Some students will reach solo flight after perhaps only 50 dual flights, others will take several times this many. You will progress at the rate which suits you.

The only factor which affects everyone's rate of progress is the frequency with which you attend. If you possibly can you should try to fly each week, especially in the early stages. If you only attend every 3 or 4 weeks then progress will be slow.

Training Plan Stages

There are four pre-solo training stages.

Each stage will include a series of exercises. Each exercise will be demonstrated by the instructor before you attempt the same manoeuvre. You will be asked to repeat the exercise until the instructor feels a good standard has been achieved. Some exercises will be repeated over several weeks. Don't worry perfection isn't expected.

As well as exercises you will be given some theory whilst on the airfield. Don't forget to back this up by reading a textbook.

At the end of each training stage the instructor will ask a series of questions to make sure you have understood the basics. This is likely to be backed up by a flight to test some sample exercises from the stage. This isn't designed to be a tough test, it is to make sure that everything has been properly covered. If you feel you need to do more on any stage, say so.

An instructor must sign off your Training Card to indicate that you have completed a stage before you move to the next group of exercises.

Ref.	Exercise	Exercise Purpose	Exercise Details
S4:12	Stall – Gentle Turn	Student learns to stall from gentle turn giving wing drop.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> Fly glider at 45 kts in 20 degree banked turn. Reduce speed by raising elevator until glider stalls. As glider stalls inside wing is likely to drop, but recover by moving stick forward as per straight stall, gaining flying speed, then return to level flight using controls normally.
S4:13	Stall - Steep Turn	Student learns to stall from steep turn.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> As S4:13 but from 45 degree banked turn at 55 kts.
S4:14	Stall by bank angle.	Student learns stalling speed increases with angle of bank.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> Glider will be circled at bank angles with 10 degree increments from 10 degrees to 50 degrees. At each bank angle the stick will be pulled back until the pre-stall buffet is felt and the speed noted at this point.
S4:15	High speed stall.	Student learns a stall is governed by angle of bank by experiencing high speed stall.	Flying demonstration only:- <ul style="list-style-type: none"> Instructor will fly glider at 50 kts. Pull stick hard back to stall glider at 50 kts. Recover as per straight stall noting speed remains high.
S4:16	Extreme Attitudes	Student will gain experience recovering from extreme attitudes preparatory to spinning routines.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> Instructor will dive and bank glider in various positions for student to gain experience of extreme attitudes. Student will practice.
S4:17	Spiral Dive	Student learns to identify spiral dive preparatory to spinning exercises.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> Bank glider to 30 degrees of bank and allow nose to drop. Increase roll to 40 degrees of bank by which time pulling back will be needed to limit speed to 60 kts. To recover, level wings with aileron and rudder and pull out of dive using controls normally to return to normal gliding attitude.

Ref.	Exercise	Exercise Purpose	Exercise Details
S4:6	Power Failure 2	Student learns to cope with high level power failure.	Flying demonstration and student practice to include: <ul style="list-style-type: none"> Take off normally climb to 600 feet plus when winch will reduce power. Lower nose to approach speed, pulling release twice, assess situation. Land ahead if possible, or S turn, 360 degree turn or shortened circuit.
S4:7	Further Controls	Student learns effects of controls at differing airspeeds.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> Fly glider at 50, 40 and 35 (stall point) kts, noting. Aileron effectiveness and adverse yaw decrease with speed to nil. Elevator effectiveness decreases with speed to nil. Rudder response changes with decrease in speed from high yaw / low roll to reduced yaw with high roll.
S4:8	HASSLL	Pre-aerobatic checks.	Brief student with regard to HASSLL checks and when to use.
S4:9	Straight Stall	Student reminded of straight stall.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> Fly glider from 45 kts down to 30–35 kts. Note effects – noise, control responses, vario reading, ASI cross check. Recover by moving stick forward – then fly off normally using all controls to return to normal gliding attitude.
S4:10	Steep Stall	Student learns steep stall from climb.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> Repeat S4:9 but approaching stall by diving to 70 kts then raising nose in simulated cable launch until glider stalls. Recover as S4:9.
S4:11	Mush Stall	Student reminded of mush stall.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> Repeat S4:9 but using mush approach – i.e. approach stall by slowly raising elevator and reducing airspeed.

Stage 1 – The Basics

In the primary stage you will be taught:-

- Airfield operation and safety.
- Glider ground handling and parking.
- Tractor retrieve of gliders and Land Rover retrieve of launching cables.
- Cockpit layout, control functions and instrument functions and related theory.
- Preparing a glider for flight and pre-flight checks.
- Basic airmanship and lookout, and the Rules of the Air.
- The basic effects of controls.
- The need to co-ordinate control movements, especially the relationship between aileron and rudder.
- Speed control through aircraft attitude.
- Trimming .
- Flying Straight and the Scan Cycle
- Gentle Turns
- Slip and skid.
- Turning onto a given heading.
- Basic stalling and related effects.
- The theory of flight – lift and drag and their influence. How control surfaces work.

This stage will take at least 12 flights to achieve basic proficiency.

Stage 2 – Launching and Landing

In Stage 2 you will be taught:-

- How to take off and climb safely in the launch.
- How to handle a crosswind at launch.
- The secondary effect of controls.
- Medium rate turns.
- Turn reversals – switching from a medium turn to the same rate of turn in the opposite direction.
- Use of the airbrakes to obtain approach control leading to an accurate landing.
- Approach control including wind gradient (the strength of the oncoming wind decreases as you descend as the lower air layers slow up due to friction with the ground), and selection of the right approach speed for a given wind strength.
- Landing.
- Use of the wheelbrake.
- Basic gliding meteorology.

This stage will take at least 12 flights to achieve satisfactory proficiency.

Stage 3 – Planning and Thinking Ahead

In Stage 3 you will be taught:-

- Steep turn control.
- Climbing turns.
- Circuit theory and planning – with extensive demonstration and discussion.
- Crosswind landings. The crabbing approach (the wing down approach is left for Stage 5).
- Pre-landing checks.
- Thermalling techniques.
- Launch point operation and signalling.

This stage will take at least 12 flights to achieve satisfactory proficiency.

Stage 4 – Advanced Glider Handling and Emergencies.

In Stage 4 you will be taught:-

- Handling the aircraft under negative “G” – this will also include an assessment of your own reaction to this situation.
- How to cope with launch failures from any height . This will include both cable breaks and the failure of winch power which require different types of response.
- Further effects of controls at differing airspeeds.
- Pre-aerobic checks – these are technically required for basic stalling exercises but are covered here in detail rather than at Stage 1.
- Stall reinforcement exercises:-
 - Straight stalls.
 - Steep stalls and stalling in a climb.
 - Mush stalls.
- Stalling in a gentle turn and stalling in a steep turn – wing drop.
- The change of stalling speed with angle of bank.
- High speed stalling – demonstration by the instructor only.
- Controlling the aircraft in unusual or extreme attitudes.
- Spiral dives.
- Spinning:-
 - From straight and level flight.
 - From a turn.
 - From a cable break
 - From the recovery from a stall.
- Winch driving

This stage will take at least 15 flights to achieve satisfactory proficiency.

Stage 4 Exercises

Ref.	Exercise	Exercise Purpose	Exercise Details
S4:1	Negative G	Check student reaction to negative G	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Dive glider to 80 kts, then pull up to simulate launch climb. • At 55 kts push stick forward to place glider in sustained negative G. • Recover to normal flight with up elevator.
S4:2	Low CB	Student learns to cope with low cable break.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Take off normally, climb to 50 – 100 feet and release cable. • Lower nose to gain approach speed, pull release twice, opening airbrakes only above 50 feet and with caution. Land ahead.
S4:3	Med CB	Student learns to cope with medium height cable break.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Take off normally, climb to 300 – 500 feet and release cable. • Lower nose to gain approach speed, pull release twice. • Assess situation, land ahead if possible, or turn downwind for S turn, 360 degree turn or shortened circuit.
S4:4	High CB	Student learns to cope with high level cable break.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Take off normally, climb to 600 feet plus, and release cable. • Lower nose to gain approach speed, pull release twice. • Assess situation, land ahead if possible, or turn downwind for S turn, 360 degree turn or shortened circuit.
S4:5	Power Failure 1	Student learns to cope with low level power failure.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Take off normally, climb to 100 feet when winch will reduce power to nil. • Pull cable release twice, lower nose to gain approach speed. Land ahead

Ref.	Exercise	Exercise Purpose	Exercise Details
S3:5	Thermal Techniques	Student learns about thermal generators, and practices techniques of thermal centering. Emphasise excellent airmanship needed in thermals.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Fly glider at 45 kts towards predicted thermal – not easy! • Identify sensation of upward movement – identify if one wing rises and turn toward this direction. • Show tightening of turns into strongest lift. • Discuss thermalling techniques and methods of identifying likely sources. • Discuss airmanship – all gliders circle same way, lookout.
S3:6	Launch Point Operation	Student learns to hook glider to cable, weak link types and all launch signalling.	Briefing and demonstration to cover:- <ul style="list-style-type: none"> • Weak link selection and glider hook on. • Signals by bat. • Use of radio and signal lights. • Flight logging.

These first four stages give a complete minimum Training Plan of around 50 launches. Only the exceptional student who has attended on a weekly basis and has perhaps boosted the learning rate by taking a course week of instruction is likely to achieve this result.

There are two post solo training stages.

Stage 5 – On Daily Checks

In Stage 5 you will be taught:-

- Basic navigation.
- Where to fly and where not to fly.
- Calculating a course and turning accurately onto a compass heading.
- Use of GPS.
- Crosswind landings using the wing down approach.
- Sideslipping to steepen the approach.
- Landing into small and confined areas.
- Field landing tests (using a motorglider).
- Pre-landing checks after cross country.
- Type conversions.
- Use of radio (a specialist course in itself and not covered in this syllabus).
- Use of flaps.
- The Bronze lecture programme.

During this phase the student pilot is required to fly at least once with an instructor at the beginning of each day's flying. It is during these flights that the above exercises are normally carried out.

This stage takes 50 solo flights. At the end of this period you should have passed the Bronze examinations and achieved all exercises satisfactorily. This will permit the pilot to begin cross country flying.

Stage 6 – Advanced Flying

A Stage 6 pilot has completed all mandatory flight training exercises and provided that he / she is in regular flying practice (at least every three weeks) will require no further check flights.

It should be noted that all pilots are required to fly at least annually with an instructor. An annual flight test will usually take 2 or 3 launches as the minimum. Further instructional flying is always recommended.

Pilots seeking advanced flying training such as aerobatics should seek the advice of a fully rated instructor to develop an individual programme.

Logbooks and Training Cards

Every pilot is required to maintain a logbook. This should contain the details of every flight you make in terms of air time and exercises undertaken. As a student you should ask your instructor to make comments with regard to the exercises you flew during each group of lessons. The instructor will state whether the exercises were successful and is also likely to indicate what should be done during the next lessons together with any general areas against which improvement should be sought.

You are free to make your own comments in the logbook but it is recommended that these are kept to a minimum so as not to clutter training comments from instructors.

The SOAGC Training Plan requires that your Training Card is updated by the instructor after every lesson session. This card shows any instructor at a glance those exercises that have been satisfactorily completed and those that are still to be attempted. It also tells you how far through the syllabus you have progressed.

The Training Card exercise numbers (and brief descriptions) match the numbers in this Training Plan. The instructor will indicate on the Card:-

- That the exercise has been demonstrated to you.
- Each attempt you have made at the exercise.
- The exercise will signed off as complete when you have flown it to a satisfactory level. Nevertheless, you may still be asked to fly it again at a later point.

Instructors are busy people on the majority of days that they are on duty. You may need to push them a little to ensure that your Training Card and Logbook are completed. Make it easy by carrying a pen.

6 - If You Need Some Help

SOAGC prides itself on a friendly informal atmosphere which is also evident in our approach to flying training. We hope you will enjoy every minute of your flight training but sometimes you may feel that you aren't progressing as well as you might. This isn't unusual, flying an aeroplane is quite a challenge.

If you feel the need to talk in more depth about your flying, or to carry out some extra flying to emphasise a point you are worried about, then approach a full rated instructor. All instructors would be happy to help, or indeed to act as your flying mentor if that is what you feel you would like.

GOOD FLYING!

Stage 3 Exercises

Ref.	Exercise	Exercise Purpose	Exercise Details
S3:1	Steep Turn	Student taught to control glider in up to 50 degrees of bank.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Fly aircraft at 60 kts and using aileron rudder make a 360 degree turn at 50 degrees of bank. • Then repeat turn at 55 kts.
S3:2	Climbing Turn	Student taught how to fly a climbing turn.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Fly glider at 80 kts. • Roll glider into 30 degree bank and apply up elevator to climb smoothly in spiral turn. • Level off into normal gliding attitude without stalling. • Practice climbing onto approximate headings explaining value of exercise in pulling up into a thermal already occupied by another glider.
S3:3	Circuit Theory	Student learns theory of circuit planning.	Full circuit planning briefing explaining purpose, shape, speeds, actions to take, the need to adapt shape according to conditions and traffic and the need for a clear lookout both in circuit and towards landing area.
S3:4	Circuit Flying	Student practices flying circuit patterns.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Flying standard circuits – explaining preference for diagonal leg rather than square. • Speeds to fly and actions to take. • Checks to make. • The student needs to understand the need for a broad circuit – do not cramp – and needs to become fully fluent with the angles which can be used to establish both high key relative to landing point and for circuit width relative to landing run. • Note: the student will need to practice many circuits and will need to join from a number of places and heights.

Appendix 1 - Flight Checks to Memorise.

The following flight checks have to be consigned to memory and used properly. Nothing less will do. They are all mnemonic (i.e. each letter stands for an action).

However, you will not need to learn them all in one go. Reference to the Training Plan will show at which stage you need to learn them.

The Pre-Flight Check

SOAGC uses the following pre-flight check:- **C-B-SIFT-C-B-E**

This means:-

- C** – controls - have full and free movement (apply full right rudder and move stick right round all four control extremes, then do the same with left rudder).
- B** – ballast - is correct, over the minimum and under the maximum shown on the aircraft cockpit placard. Early solo pilots must be at least 30lbs over the minimum. The ballast weights, if fitted must be checked as secure by the pilot. Remember this can be external as well as internal.
- S** – straps – are securely done up. In the case of a two seater flight the pilot carrying out the checks must be sure both sets of straps have been secured (whether the other seat is occupied or not!).
- I** – instruments – check that they are set to zero, that the glasses are not broken and that electrics are on. Applies to both cockpits in a two seater flight.
- F** – flaps – if fitted should be set for take off.
- T** – trim – the trim control should be set for approach (forward of centre) in case of launch failure.
- C** – canopy – closed and locked. In a two seat flight the person making the checks should verify with the other pilot that this action has been taken.
- B** – airbrakes – check that brakes open and close together and that they are closed and LOCKED for take off.
- E** – eventualities – in case of launch failure prepare a plan. Lower nose to approach attitude and confirm that approach speed for conditions has been attained whilst pulling cable release twice. Only when approach speed is reached decide whether to land ahead (always correct if room available) or turn. Always turn downwind as less degrees of the compass will be travelled through before being into wind again. Options after the turn are S turn, 360 degree turn (less in a crosswind) or join shortened circuit.

Ref.	Exercise	Exercise Purpose	Exercise Details
S2:9	Airbrake 2	Student shown that too much airbrake causes a short landing.	Instructor demonstration:- <ul style="list-style-type: none"> Place a marker 300 metres into field. Fly approach a little low at correct approach speed. Deploy full brake noting marker moving up canopy, raise nose with elevator to position marker in mid canopy, note speed now dropping, when speed decays to 50 kts, lower nose leave brakes full, land short.
S2:10	Approach Speed	Understanding of wind gradient and approach speed selection.	Briefing to include:- <ul style="list-style-type: none"> Understanding of wind gradient and effect on glider airspeed. Methodology for determining correct approach speed for given wind speed.
S2:11	Landing	Student taught final approach and landing.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> Glider approaching at correct airspeed for wind strength. Begin to move stick back as boundary crossed – emphasise first movement is small. As glider descends, stick brought steadily back for fully held off landing Keep wings level, keep straight on ground with rudder. Keep applying control until glider stops.
S2:12	Wheel Brake	Student taught wheelbrake operation.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> Student taught how to operate wheelbrake and that in many gliders this requires finesse to prevent nosing over.
S2:13	Weather	Student taught basic gliding meteorology.	Briefing to include:- <ul style="list-style-type: none"> Basics of meteorology – pressure systems leading to pressure gradients and wind. Cloud types and associated frontal activity. Likelihood of change – wind veers or backs, precipitation. When a forecast is good and when it is better to leave the aircraft in the hangar – tolerance of gliders to wind strength and direction. Weather types to avoid e.g. cu – nim. Note briefing is more likely to be part of a series of evening lectures.

The Pre- Aerobatic Check

SOAGC uses the pre-aerobatic check - **HASSLL**

- H** – height – is sufficient for the exercise.
- A** – airframe – pilots are aware of speed limits on airframe and these will not be exceeded during the manoeuvre. Flaps are set to neutral if fitted.
- S** – straps – secure (for both pilots in a two seater).
- S** – security – any loose articles have been stowed.
- L** – location – not over the airfield or housing.
- L** – lookout – carry out left and right steep clearing turns to check no other aircraft are close by above, on and below the horizon.

The Pre-Landing Check

Some experienced (usually cross country minded) pilots use a pre-landing check. There are various versions in use. SOAGC recognises the valid check of – **WULFAR. This is introduced to Post Solo Pilots only.**

- W** – water ballast – jettisoned.
- U** – undercarriage – down and locked.
- L** – loose articles – stowed.
- F** – flaps – set for landing – may be in stages.
- A** – altimeter set for QFH – airfield height = zero.
- R** – radio – landing cleared with airfield.

Ref.	Exercise	Exercise Purpose	Exercise Details
S2:4	Too Fast	Student learns to signal winch to slow down	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Request winch to overspeed glider – a little. • Lower nose 5- - 10 degrees to reduce cable / glider loads. • Request winch to reduce speed by yawing strongly once in each direction.
S2:5	Second Effect Controls	Show that primary controls have more than one effect upon the flight.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Rudder – fly aircraft at 45 kts, apply full rudder. Glider yaws first and then after a few seconds turns with skid (see yawstring). • Ailerons – fly aircraft at 45 kts and repeat adverse yaw demonstration.
S2:6	Medium Turns	Student should be able to execute steeper – thermal rate, turns.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Fly aircraft at 50 kts and using aileron rudder make a 360 degree turn at 30 degrees of bank. • Then repeat turn at 45 kts.
S2:7	Turn Reversal	Student capable of switching a thermal turn from left to right.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Flying the glider at 50 kts reverse a 30 degree banked turn through to 30 degrees in opposite direction, keeping yaw string central. • Then repeat turn reversal at 45 kts.
S2:8	Airbrake 1	Airbrakes demonstrated against target object.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Place a marker 300 metres into field. • Fly a standard approach deploying airbrakes and noting which way the marker moves against the canopy frame:- <ul style="list-style-type: none"> • Full brake – marker moving up canopy – undershoot • Quarter brake – marker moving down canopy – overshoot. • Half brake – marker stationary on canopy – correct approach.

Stage 2 Exercises

Ref.	Exercise	Exercise Purpose	Exercise Details
S2:1	Take Off	Student learns how to take off safely and rotate into the climb.	<p>Flying demonstration and student practice to include:-</p> <ul style="list-style-type: none"> • Ground run – wings level, steer with rudder, avoid large elevator action. • Glider flies off – prepare to check initial climb rate with fwd stick pressure. • Progressive rotation into full climb observing minimum speed to be exceeded. Emphasise need for gentle climb at first then progressively bring nose to full climb to allow safe landing ahead in case of emergency.
S2:2	The Climb	Student learns how to handle the full launch.	<p>Flying demonstration and student practice to include:-</p> <ul style="list-style-type: none"> • Holding full climb during middle part of launch. • Learning when to relax back pressure on stick as top of launch is neared. • The difference between the cable back releasing and pulling the release together with the preference to release when cable not under tension. • The need to pull the cable release twice for safety. • The need to monitor speed in the climb, know the minimum and maximum and not to treat the maximum as the ideal.
S2:3	Cross wind launches	Student learns how to handle a cross wind during launch.	<p>Flying demonstration and student practice to include:-</p> <ul style="list-style-type: none"> • Possible need to hold into wind wing a little low as take off run starts. • Normal take off but more control input needed to keep wings level. • Use of rudder to prevent strong weathercocking. • After entering full climb lower the into wind wing to fly the cable into wind allowing a safe cable drop after releasing.

Appendix 2. Training Record Card In Detail

Stage 1 Exercises

Ref.	Exercise	Exercise Purpose	Exercise Details
S1:1	Airfield Operation	Provide student with clear understanding of airfield layout and operation.	<p>Briefing covering:-</p> <ul style="list-style-type: none"> • Airfield layout. • The need to operate into wind. • Overall airfield operation – winching, retrieve, parking of aircraft.
S1:2	Aircraft Ground Handling	Provide student with clear understanding of how to move and park gliders.	<p>Briefing and demonstration featuring:-</p> <ul style="list-style-type: none"> • Gliders can be pushed on wing leading edges and fuselage sides. • Gliders can be lifted at the tail by handles provided, but do not lift or push tailplanes. • Park a glider by pointing a wing into wind and weighting this down. • Explain that the most into wind wingtip must always be held – and that the wingtip holder owns it with “My wing”.
S1:3	Aircraft Retrieve	Student learns to retrieve gliders using tractor.	<p>Demonstration showing:-</p> <ul style="list-style-type: none"> • How to drive tractor. • The need to look around and avoid gliders on approach. • How to attach tow rope to glider. • Safe towing speeds and the need to cross flight line at 90 degrees then detach rope.
S1:4	Cable Retrieve	Student learns to retrieve launching cables by Land Rover	<p>Demonstration showing:-</p> <ul style="list-style-type: none"> • How to drive Land Rover. • How to use radio. • Safety briefing – don't move without radio clearance. • Hook up procedures and appropriate cable runs and towing speeds.
S1:5	Cockpit Layout	Student learns cockpit layout and basic function of controls and instruments.	<p>Full briefing showing:-</p> <ul style="list-style-type: none"> • Control layout and theory of operation. • Instrument layout, readings and operational explanation.
S1:6	Pre-Flight Checks	Student learns pre-flight checks.	<p>Demonstration including:-</p> <ul style="list-style-type: none"> • C-B-SJFT-C-B-E, positive control checks and cable hook up.
S1:7	Airmanship	Student learns basic airmanship (lookout) and Rules of Air. IMSAFE system	<p>Briefing to include:-</p> <ul style="list-style-type: none"> • The need for lookout – above, on, below horizon. The need to scan. • The basic Rules of the Air. – see Laws and Rules.

Ref.	Exercise	Exercise Purpose	Exercise Details
S1:8	Basic Control Effects	Student learns basic control inputs and effects.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Fly glider at 45 kts. • Lower nose, more ground in view, more noise as speed increases to 60 kts but glider stable in new attitude. • Raise nose, less ground in view, less noise as speed slows to 40 kts, glider stable in new attitude. • Return to normal gliding attitude and 45 kts. • Move stick to left or right to produce roll, followed by counter movement (instructor manages rudder) to level wings. • Now ask student to identify distant object. • Apply left or right rudder to show yaw without turning. Rudder yaws the glider but does not turn it.
S1:9	Adverse Yaw	Student learns about adverse yaw from ailerons and need to counteract with rudder.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Glider flying at 45 kts • Student identifies distant object ahead. • Instructor applies aileron without rudder. • Student identifies roll with adverse yaw and therefore the need for rudder in conjunction with aileron for a smooth co-ordinated turn.
S1:10	Speed Control Through Attitude	Student learns that speed is controlled by attitude.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Speed changes with attitude – nose down increase and nose up decrease. • Speed cannot be set from instruments – possible to raise and lower nose rapidly but speed stays at 45 kts according to A.S.I.
S1:11	Using the Trimmer	Student learns to use trimmer to remove stick loads.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Fly the glider at 45 kts. • Move trimmer to remove stick loads and test with “hands off”. • Increase speed to 60 kts and re-trim – hands off test. • Reduce speed to 45 kts and re-trim – hands off test.
S1:12	Straight Glide and Scan	Student learns to fly straight and introduced to the Scan Cycle	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Fly glider at 45 kts. • Identify an incorrect attitude and correct. • The Scan Cycle.

Ref.	Exercise	Exercise Purpose	Exercise Details
S1:13	Maintaining a Heading	Student learns how to maintain a heading	As S12 but the Instructor moves the nose from the original heading and then demonstrates how to regain the original heading. The Student practises.
S1:14	Basic Turns	Student learns to make a turn using all 3 primary axis controls.	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Glider to be flown at 45 kts. • Co-ordinated use of aileron and rudder rolls glider into turn. Centralise stick at required angle of bank maintain some in turn rudder. This stage is called “going in”. • Show “staying in” phase of turn – attitude can be changed with elevator – the normal gliding attitude still applies, turn can be steepened or lessened with aileron and rudder. • “coming out” of turn with co-ordinated aileron and rudder and centralising controls as wings come level.
S1:15	Slip and Skid	Student learns the meaning of slip and skid, that they are inefficient and how to avoid them	Flying demonstration and student practice to include:- <ul style="list-style-type: none"> • Fly the glider at 45 kts. • Roll into a shallow turn. • If insufficient rudder is applied the nose is slow to follow turn, yaw string points to outside of turn, the glider is slipping. • If too much rudder applied the nose points inside the turn, yaw string points inside turn, the glider is skidding. • Both result in a higher sink rate – reference the vario reading.