**RAFGSA GLIDING OPERATIONS MANUAL**



**Issue 002**

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## Use of this Manual

This Manual lays down the operating standards and practices which should be applied within the Royal Air Force Gliding and Soaring Associations (RAFGSA). These are in addition to the standards and practices detailed in the latest edition of the [British Gliding Association’s (BGA) Laws and Rules](https://members.gliding.co.uk/laws-rules/).

This Manual is endorsed for use within the Royal Air Force Gliding & Soaring Association (RAFGSA) and is to be followed by all RAFGSA member clubs.

## Manual Ownership

This Manual is owned and maintained by the RAFGSA Operations Member who will be responsible for making periodic updates.

## Manual Amendments

Proposals for amendment to this Manual are to be submitted directly to the RAFGSA Operations Member. Amendments are to be endorsed by the RAFGSA Executive Committee.

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Group Captain

Chairman RAFGSA

Jun 2019

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# Chapter 1 – Flying Supervision

1. Flying Orders. The Chairman of the RAFGSA is responsible for ensuring that all gliding operations in the Association meet the requirement of QRs, [JSP 660](https://modgovuk.sharepoint.com/sites/defnet/HOCS/Pages/JSP-660-Sport-in-the-UK-Armed-Forces.aspx), DCIs/DINs and Service Instructions. The [Operational Regulations](https://members.gliding.co.uk/library/bga-requirements-guidance/operational-regulations-of-the-bga/) of the BGA will be followed as per the Laws and Rules, available to all pilots on the BGA website ([www.gliding.co.uk](http://www.gliding.co.uk)). Where there is any conflict between the BGA and Service Regulations, the most restrictive order is to apply. Club Chairmen are to ensure that copies of the RAFGSA Gliding Operations Manual, Club Regulations and the Flying Order Book(s), be available at the Launch Point, together with a copy of the [BGA Laws and Rules](https://members.gliding.co.uk/laws-rules/) for Glider Pilots. It is the responsibility of Club CFIs to ensure that the documents are up to date and that pilot’s are aware of relevant current regulations. The Flying Order Book **should** be signed (hard copy or electronically) for annually by all club pilots. A list of Service and other documents and regulations covering gliding is at Annex A.
2. Club Chairman. The RAFGSA Chairman will approve a Club Chairman for each of the RAFGSA clubs, who is responsible for all club operations and the overall financial viability of the club.

3. **OIC**. Each club is to have an Officer in Change designated by the Club Chairman who is responsible to the chair for the management of the club.

4. Chief Flying Instructor. Each club is to have a Chief Flying Instructor (CFI) appointed by the Club Chairman and approved by the RAFGSA Chairman on the recommendation of the Operations Member. He is to be a BGA Full Category Instructor to qualify for the CFI endorsement. The [BGA website](https://members.gliding.co.uk/library/instructors/information-for-chief-flying-instructors/) has information and guidance for CFI’s All flying is under the supervision of the CFI, and he is responsible to the Club Chairman for:

1. The standards of flying at the club and safety of operations.
2. The production of local flying orders in conjunction with the local Aerodrome Operator, including a Flying Order Book which is to be signed annually by all pilots.
3. Authorisation of pilots to fly in accordance with the minimum qualification requirements at Annex B.
4. Further training of Assistant Category Instructors and Basic Instructors.
5. Supervision of flying and the Duty Instructor roster.
6. Ensuring that all training is carried out in accordance with the BGA Instructors’ Manual.
7. Ensuring that all club pilots maintain their log books, and to check and sign them annually.
8. Training of winch/auto-tow drivers, and tug pilots.

5. The Duty Instructor. For supervising flight operations, the Duty Instructor is normally a BGA Full Cat or exceptionally this can be a BGA Assistant Category Instructor when authorised by the RAFGSA Ops Member. The DI is responsible for flying on the day for which they are appointed under the direction of the CFI. Normally at the launch point to supervise flying operations, however if flying activity is light, the DI is to remain on the site. Defined as on the airfield, in the hangar or club premises, or flying within the immediate circuit area wherein a suitably qualified pilot is to be appointed to control ground operations. To satisfy the above he is to:

1. Obtain NOTAMs and a weather forecast and assess the suitability of the weather for the planned operations.
2. Ensure that all equipment to be used is serviceable.
3. Select the launch point. This is to be clear of the downwind airfield boundary and sited with due regard to:
4. Obstructions.
5. Rough ground.
6. Local turbulence effects.
7. Other flying operations; e.g. Flying Club’s
8. Detail assistants on the field.
9. Ensure that all flights are properly authorised and are entered in the daily flying log.
10. Ensure that pilots are appropriately briefed for all flights and that all the relevant NOTAMs are marked on their cross-country maps. In large clubs, it may be necessary to detail a second Duty Instructor to take charge of a specific area of operations, e.g. where aero-tow and winch launches are taking place from different launch points.
11. Ensure that the first flight of the day and any test flight required post assembly or inspection, is carried out by a suitably qualified pilot.
12. Ensure that any infringement of flying regulations, or act of indiscipline in the air, is reported to the CFI.
13. Take appropriate action in the event of any incident or accident (see Annex C).
14. **Should** produce a written dynamic risk assessment for each day’s activities updating it if conditions change. A blank daily dynamic risk assessment is at Annex E.

The Duty Instructor **should** not be made responsible for the collection of cash on the field or other administrative tasks which would distract his attention from the control of flying operations. Clubs may appoint a duty pilot to be in charge of ground operations.

6. Instruction. Dual instruction may only be given by a current BGA qualified European Aviation Safety Agency (EASA) Flying Instructor, Full, Assistant or Basic Instructor. The flying exercises are to be in accordance with the [BGA Gliding Syllabus](https://members.gliding.co.uk/library/pilot-training/bga-gliding-syllabus/) (as per [BGA Instructor Manual](https://members.gliding.co.uk/pilot-resources-flying-training/instructors/instructor-resources/)) and each student pilot's progress is to be recorded. An [RAFGSA Glider Pilot’s Training Record](http://www.rafgsa.org/documents/rafgsa-training-record-booklet/) Booklet is stored on the RAFGSA website and may be printed in booklet form for use in RAFGSA Clubs. Dual checks are to be carried out at the discretion of the supervising instructor but are mandatory in the following circumstances:

1. Before first solo.

b. Before solo flights of inexperienced solo pilots with under 10 solo flights.

c. Annually for all solo pilots, to include a launch failure and spinning/spin avoidance.

7. Logbooks. All pilots are to maintain a personal flying log book either in the form sold by the BGA or in an equivalent form. On completion of a formal dual check, it is to be recorded in the pilot’s log book. The [RAFGSA Pilot Training Record](http://www.rafgsa.org/documents/rafgsa-training-record-booklet/) provides a suitable medium for recording flights until pilots acquire a logbook.

8. Accidents. Every accident which results in damage to aircraft or equipment or injury to personnel is to be reported as laid down in Annex C. Serious accidents and incidents involving other agencies are also to be reported. Unless a Service Inquiry is convened, the CFI **should** report the accident to the BGA Chief Accident Investigator and the RAFGSA Chairman through the Ops Member. See Annex C for details. Hazard reporting **should** be conducted in accordance with the RAFGSA SSMP using ASIMS where possible. If in doubt, the RAFGSA Safety Member should be consulted.

9. Discipline. Club Chairmen in conjunction with the RAFGSA Executive, have the power to suspend or expel any member from a Club for a breach of rules. Where financial loss has fallen on the Club or Association and a member is blameworthy, he may be invited to reimburse the Club/ Association for an amount up to the limit of the insurance excess. If a member is dissatisfied with a ruling of the Executive, an appeal in writing may be made to the RAFGSA Chairman, who may seek the advice of higher authority before making a final decision.

10. RAFGSA Audit Team Visits. The RAFGSA Operations Member leads a team which makes periodic visits/ Safety Audits to Clubs on a 3-yearly basis. The aims of the visit are to obtain for the RAFGSA Chairman, an assessment of each Club's strengths and difficulties, to monitor local operating procedures and to advise on the Association policy. The Operations Member will use guidance in AP 3415 leaflet 15, the RAFGSA SSMP and AP 8000 leaflet 8012 to conduct and report on these audits. Within the course of such a visit, the team members may require flying with the CFI and a cross section of the Club members, and to examine the Club's aircraft, ground equipment and general facilities. The Team Leader will provide to the RAFGSA Chairman a written report on each visit, which will be copied to the Club concerned.

# Chapter 2 – Operating Regulations

11. Flight Authorisation. Every flight by an RAFGSA glider or other glider launched by a RAFGSA Club is to be authorised by a person who is approved to do so by the CFI and who is present at the site. The CFI is to maintain and display a list of such persons at the launch point. Assistant Category Instructors may only authorise training flights under the supervision of a Full Category Instructor. However, certain senior Assistant Category Instructors may perform this duty if authorised by the RAFGSA Operations Member. Authorisation of flights will normally be verbal, but a written note is to be made of the routes of all planned cross-country flights in the flying log or recorded as a blackboard declaration. The name of the Duty Instructor or pilot in charge is to be recorded at the head of the daily flying log. At the discretion of the CFI, individual pilots holding the Silver 'C' may be authorised to self-brief for local flying and those holding the Gold Distance/ Diamond Goal Certificate may self-brief for cross-country flying. Local familiarisation flights are to be conducted where appropriate at the discretion of the supervising instructor.

12. Soaring – Minimum Height Limits. Authorising Instructors are to specify minimum height limits for soaring. These limits are to take into account the following factors:

1. Pilot capability.
2. Thermal soaring turns may not be attempted below 500 ft agl.
3. The low speed characteristics of some gliders may dictate higher limits.
4. For ridge soaring, minimum heights may be laid down in relation to the ridge top.
5. For soaring over difficult country, minimum heights **should** be laid down to ensure a safe out-landing.

13. Limitations and Characteristics of Aircraft. Before flight, it is the responsibility of the pilot of any aircraft, to acquaint themselves and comply with any limitations or restrictions imposed on it, with the operation of all controls and with its flight characteristics. Club CFIs are to ensure that the Aircraft Flight Manuals are available to pilots. A pilot before flying a type of glider for the first time is to be given a specific briefing on that type. The RAFGSA recommended minimum qualifications for conversion to type are at Annex B. Clubs **should** specify in local orders the minimum requirements to fly their club’s aircraft. Expedition CFIs **should** ensure that pilots have appropriate experience and ability to fly the glider allocated. The pilot is responsible for ensuring that the glider is flown within its permissible centre of gravity range, and that any ballast used is properly secured.

14. Two-Seater Flying. Training aircraft may be flown by two people in the following circumstances:

1. **Instruction.** For basic instruction, the pupil is to occupy the front or right-hand seat. The aircraft captain is to be rated instructor. For advanced tuition or checks the instructor may occupy either seat.
2. **Mutual flying.** When both pilots are qualified on type, the pilot in the front seat or left-hand seat, is to be designated as aircraft captain.

15. Weather Minima. The following weather minima are to be observed when launching Association gliders flown by experienced pilots:

1. **Cloud Base.** The normal minimum cloud base for all operations is to be 800 ft agl; however, low and medium practise launch failures and difficult circuit training only may be authorised with a cloud base of not less than 600 ft agl.
2. **Wind Strength.** Normal limit for wind speed is 25 kt. The CFI or specifically authorised deputies may authorise flying up to a maximum of 30kts in special soaring circumstances provided adequate ground handling facilities exist.
3. **Visibility.** 3 km visibility is required for circuit flying, aero-towing or soaring.

d. **Precipitation.** Gliders are not to be launched in moderate or heavy rain because of the risk of misting of the canopy and aerodynamic degradation of the wing. Glider towing **should** not to take place with SF25Cs when it is raining.

16. Vertical Separation from Cloud. Pilots are to maintain 100 ft vertical separation from cloud when launched and at all other times unless the glider is fitted with serviceable cloud flying instruments and the pilot is qualified and current in cloud flying.

17. Ridge Sites. At ridge sites, Association pilots are to comply with local club operating rules. On expeditions to sites where no local rules exist, limits are to be laid down by the expedition leader and approved by the Operations Member.

18. Parachutes. Parachutes are to be worn in Association gliders at all times except where the aircraft is not designed to accommodate a parachute. In the case of Association motor gliders designed to accommodate a parachute, parachutes must be worn if soaring is the primary purpose of the flight. Parachutes need not be worn in tug aircraft. When parachutes are being worn for a flight, entry to and exit from the aircraft is to be made with the parachute ON. Parachutes must be worn when cloud flying. Parachute should re-packed in line with manufacturers and British Parachute Association guidelines for reserves.

19. Radio. When fitted in a glider, the radio is to be switched on when the glider is manned. Except for frequencies specifically allocated to gliding as detailed in the [BGA Laws and Rules](https://members.gliding.co.uk/laws-rules/), and the emergency frequency 121.5Mhz, pilots are not to transmit on the aeronautical frequencies without either:

1. Possessing a Certificate of Competency for Flight Radiotelephone Operator (see CAP 413: Radiotelephony Manual).
2. Having received corresponding Service training in the use of Radio Transmission (RT).

20. Transponders. If fitted, EASA Rules of the Air requires the pilot of an aircraft equipped with a serviceable SSR transponder to operate the transponder at all times during flight i.e. it must be switched on. Exemptions exist for aircraft without sufficient electrical power supply from the requirement to operate the transponder at all times, **except** for flight in airspace designated by the competent authority for mandatory operation of transponder. Tug aircraft transponders ***are*** to be switched on when aerotowing from RAFGSA sites.

21. Flight Over the Sea. Flights outside gliding range of land are prohibited.

22. Smoking. Smoking is prohibited in all Association gliders and aeroplanes.

23. Grass Length. Club Chairmen are responsible for ensuring that the grass surfaces required for glider operations are cut regularly, to maintain a safe operating surface in the take-off and landing areas. The recommended grass length for gliding operations **should** be less than 100mm

(GAI 1048). [CAP 772](https://publicapps.caa.co.uk/docs/33/CAP772_Issue2.pdf) recommends maintaining swards at between 50 and 100 mm in take-off, landing and low-level operation areas of the airfield.

24. Off Site Flying. If Association aircraft are to be flown from another site, the Ops Member and RAFGSA Chairman’s permission’s **should** to be sought. This is so they are aware of the activity and to understand if there is additional risk.

25. Airspace Infringement. Any pilot involved in an airspace infringement is to report the facts on landing to the Duty Instructor, who is to report the infringement iaw. current CAA Regulations through the CFI and to the appropriate Association. Airspace infringement action specific to each Club is to be immediately available to the Duty Instructor.

26. Formation Flying. Formation flying is to be carried out only when authorised by the CFI or their nominated deputies. It is envisaged that formation flying will be flown only for performance comparison, or air-to-air photography. Any intended formation flying for display purposes is to have the prior approval of the RAFGSA Chairman. The following are to be observed:

1. The pilots undertaking flying in formation are to have sufficient experience to be considered competent to undertake the task.
2. Details of the intended formation are to be briefed. This briefing is to include procedures for initial formation, lost contact, break out procedures, termination of formation, who is in charge of the formation and who is responsible for lookout.
3. Weather conditions are to be VMC.
4. All participants are to be in radio contact.

27. Towing Glider Trailers. A comprehensive review of the rules covering glider trailers is included in the [BGA Laws and Rules](https://members.gliding.co.uk/library/bga-requirements-guidance/trailer-guidance/). It is essential that the club management take a proactive role in controlling the use of glider trailers. This should include trailer maintenance, authorisation of club members to tow trailers and briefing or training for those inexperienced in the task.

# Chapter 3 – Safety

28. General. Each RAFGSA Club, where possible, is to use the Flight Safety Management System of their parent station. At the very least, the parent station Flight Safety Officer is to be invited to conduct an annual Flight Safety (FS) audit of the Club’s operation and a representative of the club is to attend the station FS meetings. This is addition to FS visits that are mandated by the BGA. The RAFGSA maintains its own Sports Safety Management Plan and clubs should look to integrate within any Station Safety Management Plans. The RAFGSA generates an input into the RAF Sports Board risk register and generates risk bowties for generic flying and ground activities. Club’s **should** generate specific risk registers or bowties for any additional risks at their sites. Health and Safety risk is owned by the local Head of Establishment and clubs **should** integrate with their procedures and processes. All the risk registers and safety plans must be easily accessible to the club’s members.

29. Ground Safety Precautions. During gliding operations, the following **should** be provided:

1. First aid kit at the launch point.
2. Serviceable vehicle for transportation of injured persons.
3. On a Service airfield, contact details for the emergency services, and when not operating at a Service airfield, an up-to-date list of addresses and telephone numbers of nearest doctor, hospital and ambulance.

When powered flying is also taking place (aero-tow/motor gliders) firefighting equipment in accordance with single Service regulations are to be provided. Clubs **should** have a mobile phone at the launch point during all operations.

30. **Crash Plan.** Chairmen of RAFGSA Clubs **should** ensure that there are appropriate Post Crash Management plans in place in the event of an Accident or Serious Incident or Occurrence.

31. Overdue Action. Overdue action **should** be taken on a glider at twilight or if there is good cause to believe that the aircraft is missing. Overdue action specific to each club is to be immediately available to the Duty Instructor.

32. **Daily Dynamic Risk Assessment.** Each day the club Flying Supervisor, normally Duty Instructor, **should** produce a Daily Dynamic Risk Assessment as per Annex E. This is to identify how conditions are impacting the operation and must identify any increased risk and how it is being managed. A hard copy **should** be kept at the launch point and updated if conditions change.

# Chapter 4 – Launching

33. Winch Launching. Winch launching operations are to be performed in accordance with the operational regulations and recommended practices in the [BGA Laws and Rules](https://members.gliding.co.uk/laws-rules/) and with due regard to safety advice provided by the BGA.

34. Launch and Cable Retrieve Signals. No cable retrieve is to commence until the winch driver has given a positive signal that the cable may be towed out. The signals may be by white light, a suitable electronic signalling system, bat or hand signals from the winch driver. For launching gliders, the light and the bat signals may be augmented by radio calls for type/ cable in use details but launching signals ***should*** not be by radio alone. The normal take up slack and all out signals are to be used, the meanings being:

1. Take up slack / start to tow slowly. Light signals 1 sec on 3 off
2. All out / tow normally. Light signals 1 sec on 1 sec off
3. Stop / do not tow. Light signal On

If a cable retrieve has been interrupted for any reason, it is not to re-commence until the appropriate signal has been clearly given by the winch driver. If cables become jammed or must be worked on for any reason, the stop light is to be left on continuously, or the bat must be fixed to give a continuous stop indication.

35. Aero-Towing. Aero-tows may be authorised when:

1. The combined aero-tow experience of tug and glider pilots exceeds ten tows.
2. Dual towing of RAFGSA aircraft is no longer authorised due to the replacement of all Pawnee and Chipmunk Tugs. If required, Dual tow authorisation may be granted from the Operations Member if a suitably powerful tug aircraft is available.
3. The ground safety precautions given are complied with, fulfilling the requirements of current regulations governing the use of powered aircraft at RAFGSA sites.

Aero-tow retrieves by Association-owned tugs may be made only from airfields or recognised gliding sites unless specifically authorised by the CFI.

36. Weak Links. The pilot is responsible for ensuring the correct weak link is fitted to the cable/tow rope before launching.

37. SF25 Motor Falke Operations in Strong Winds. Guidance on the operation of SF25 aircraft in strong winds is contained in Annex D.

38. **SF25 Rotax 914 Aerotow SOP.** All SF25 pilots should be conversant with the SF25C flight manual. Care should be taken to ensure full power is not used for more than 5 minutes. To preserve engine life Pilots are to follow the recommendation:

**Power/ prop *should* be reduced to max continuous by the 3min/ 1000’ whichever is achieved first, but not less than 300’.**

# Chapter 5 –Training

39.  Basic Flying Training. All basic flying training in the RAFGSA is to be conducted in accordance with the BGA syllabus. A basic student record card or its equivalent is to be used for recording student progress and comments by the student's instructors. The RAFGSA [Glider Pilot’s Training Record Booklet](http://www.rafgsa.org/documents/rafgsa-training-record-booklet/) is available on the RAFGSA website for this purpose. The [BGA Instructor Manual](https://members.gliding.co.uk/pilot-resources-flying-training/instructors/instructor-resources/) should be used as the standard reference to teach the lessons.

The record card should be kept at the launch point when club flying is taking place and referred to by the student's instructor before commencing training flights. Clubs should carry out intermediate training to include as many of the items shown as is practicable.

40. Ground Training. No member is to undertake safety-critical tasks unsupervised before being certified competent by an authorised instructor. Ground training should be conducted in line with the RAFGSA Ground Training Card and may be recorded in the Glider Pilot’s Training Record or by other means kept on record by the Club. Competence for the following should be confirmed in accordance with the Ground Training Documents available on the RAFGSA website.

* 1. [Ground Handling](http://www.rafgsa.org/documents/ground-handling-training/).
	2. [Wing Runner](http://www.rafgsa.org/documents/wing-runner-training-guide/).
	3. [Retrieve Driver](http://www.rafgsa.org/documents/retrieve-driver-training/).
	4. [Glider Tow Driver](http://www.rafgsa.org/documents/tow-driver-training/).
	5. [Winch Driver Training](http://www.rafgsa.org/documents/winch-driving/).

 f. [Winch Driver Manual](http://www.rafgsa.org/documents/winch-driver-manual/)

41. **Post Solo Training.** After the student has flown solo, a progression on to more complicated aspects and revision of some items, such as stalling, spinning and launch failures, is made following the [BGA Post Solo training syllabus](https://members.gliding.co.uk/library/pilot-training/bga-gliding-syllabus/). This syllabus is intended to prepare the student for the BGA Bronze C and BGA Cross-Country Endorsement. The BGA Cross-Country Endorsement must be complete before a pilot may fly across country.

42. Spinning. Spinning and spin avoidance training is an essential part of both basic and advanced pilot training. All pilots should be encouraged to spin each new aircraft during conversion to type and to practise spin recovery and spin avoidance at regular intervals but not less than bi-annually. Each flight on which intentional spinning will be carried out is to be authorised by the Duty Instructor.

43. **TN4b modified K21 Spinning.** Guidance for spinning the K21 aircraft using the spinning modification is at. Annex F. This contains the RAFGSA SOP for spinning the K21 with the spinning modification fitted.

44. **Continued Training.** Flying Training must be continued throughout a pilot’s flying career; indeed, Chap 1 para 6 of this manual call’s for annual checks for launch failures and spinning. Further training should be made available to all Club pilots to develop skills and to maintain flying standard.

45. **Competition Training.** Satisfactory completion of Competition Training is normally mandatory before progressing onto competition flying. This may be carried out locally by a suitable experienced Full category Instructor nominated by the CFI.

46. **Cloud Flying Training.** Cloud flying training is permitted in the RAFGSA under certain circumstances. EASA Instructor’s must hold the endorsement to teach/ examine on the Sailplane Cloud Flying Rating.

47. **Pre-Instructor Course Training.** Pre-Instructor Course Training at Club level is an essential part of the Course content. The minimum level of training is described on the BGA Instructor Training Record Card.

48. Instructor Training. Instructor qualification is to be in accordance with the [BGA Instructor Requirements](https://members.gliding.co.uk/library/bga-requirements-guidance/instructor-requirements/). Clubs may only undertake formal instructor training courses with the consent of the BGA.

49. **Mountain Flying Training.** The RAFGSA mounts expeditions to conduct gliding in mountainous terrain. Although the BGA does not specify a Mountain Instructors qualification (MI), the RAFGSA maintains a MI qualification. This should be awarded by the Expedition CFI, annotated in the pilot’s logbook with specific clearances for each type of terrain, ie. Local to Sisteron bowl etc . RAFGSA flying instruction carried out in mountainous terrain (e.g. The Alps) **should** be supervised by an experienced RAFGSA MI, with all flying instruction carried out by RAFGSA MI qualified pilots.

# Chapter 6 – Aerobatics

50. Aerobatic Policy. It is policy of the Service Associations that aerobatics form only a minor part of the accomplishment of sailplane pilots. The permitted manoeuvres must be formally taught, and carried out only when specifically authorised. Furthermore, cross country competition sailplanes are not to be used for aerobatics.

51. **Standard (Basic) Level.** At club level, Pilots may be trained to the Standard Level of Competence – 45 degree climbing and diving lines, loops, Wingovers (chandelles) 270-degree erect turn and the Canopy-Down Humpty Bump. Spins and spin avoidance are to be taught during the pre-solo and advanced pupil training. Note: The Standard test qualifies for the BGA Aerobatic endorsement.

52. **Aerobatic Training**. Training in loops and chandelles may be given once the pupil has completed his Bronze C or 10hrs solo. Training/clearance **should** be carried out by a BGA Aerobatic Instructor, or a Full Rating categorised instructor authorised by the CFI in dual-controlled gliders. The Standard badge test may be witnessed by any BGA Aerobatic Instructor or by a Full Rated Instructor authorised for the purpose by the local CFI. The pilot’s log book should be endorsed ”Certified competent to carry out Basic Aerobatics”. Sports or Intermediate training and testing can be carried out iaw. [BGA Laws and Rules.](https://members.gliding.co.uk/wp-content/uploads/sites/3/2015/04/Gliding-aerobatics-badge.pdf)

53. Authorisation of Aerobatics. Aerobatic sorties are to be individually authorised by the CFI, Duty Instructor or a BGA rated Instructor with the BAeA Gliding Instructor rating, who is to ensure:

1. That the pilot has completed his training for aerobatics and is in current aerobatic practice.
2. That the weather is suitable for the execution of aerobatics.
3. That the pilot is wearing a parachute.

54. Aerobatic Limits. Every aircraft used for aerobatics is to be fitted with a serviceable accelerometer. The limit for basic manoeuvres is as described in the aircraft’s Flight Manual or C of A certificate. Any occasion when these limits are exceeded in flight is to be reported to the Duty Instructor who should ensure that the glider is checked by a qualified inspector before it is flown again. Full recovery from all aerobatics is to be completed by 800’ agl.

Special clearance of lower limits for display purposes is to be sought from the RAFGSA Chairman, which in turn can be no lower than the pilot’s proposed Display Authorisation.

55. Spinning. This is an aerobatic manoeuvre when competing in the Sports class or displaying. Basic spin training is covered in Chapter 5 para 42.

56. Advanced Aerobatics. Pilots wishing to further their aerobatic qualifications are to be encouraged to join the British Aerobatic Association, which in conjunction with the BGA[(Laws and Rules, Glider Aerobatic badge Requirements)](https://members.gliding.co.uk/library/bga-requirements-guidance/gliding-aerobatics-badge-requirements/) has developed a package or training and testing to achieve differing aerobatic qualifications. Clubs wishing to teach more advanced aerobatics may apply to the RAFGSA Chairman through the Operations member.

57. Display Flying. Display flying mounted from RAFGSA sites or using RAFGSA equipment is to have the prior approval of the RAFGSA Chairman.

Pilots must be in the procession of a current CAA Display Authorisation. Details on obtaining a DA will be found in [CAP 1724](http://publicapps.caa.co.uk/docs/33/CAP1724_Flying%20_Display_Standards_Document_E1.pdf) Display Standards Document.

58. **Passengers**. Passengers are not to be carried on aerobatic displays or low-level practices

( below 800’).

# Chapter 7 – Cross-Country Flying

59. General. All cross-country flights in RAFGSA aircraft and privately-owned aircraft flying from RAFGSA sites are to be authorised in the log sheets/ flight logging systems. No pilot may fly cross country unless:

1. They possess a Bronze 'C' Badge, and Cross-Country Endorsement.
2. They have completed an annual field landing check and navigation training exercise. Service pilots, holders of PPL 'A' and holders of Gold Distance/ Diamond Goal Badges are exempt from annual navigation tests. A briefing is to be provided to all pilots authorised to fly cross-country, and this briefing, which is to be provided by an instructor, is to include the following information: (Gold Distance/Diamond Goal pilots, at the discretion of the CFI may self-brief)
3. Meteorological information.
4. NOTAMs.
5. Landing areas along the intended route.
6. Controlled airspace near the intended route.
7. The following heights are to be specified:
8. "Going away" height (normal minimum 3000 ft agl).
9. Selection of landing field height (normal minimum 1500 ft agl).
10. Committed to landing height (normal minimum 600 ft agl).

c. Ideally, all aircraft flown cross country **should** have a moving map display with up to date mapping and airspace. They should also have working FLARM system.

60. Field Landing. Pilots landing in fields should remember that they are committing a technical trespass and gliding is dependent upon the generosity of farmers. The Code of Practice within the [BGA Laws and Rules](https://members.gliding.co.uk/laws-rules/) is to be followed.

61. Cloud Flying. Cloud flying is permitted in RAFGSA gliders under the following conditions only:

1. The aircraft is to be fitted with serviceable blind flying instruments, a parachute and a radio. For aircraft with speed limiting airbrakes the minimum instrumentation is a turn and slip; for all other aircraft, an artificial horizon is to be fitted in addition to a turn and slip.
2. The glider must be cleared for cloud flying.
3. The pilot must have the BGA cloud flying endorsement (Part FCL Sailplane Cloud Flying Rating)
4. The pilot is to carry a suitable chart marked with controlled airspace in the local area.
5. The altimeter is to be set to indicate height above mean sea level (amsl)/flight level (FL) as appropriate.
6. Cloud flying is allowed under the flight rules of the country concerned.

In the UK, the BGA cloud flying frequency is to be selected before entering cloud and a broadcast call made giving position, altitude amsl and immediate intention. If contact is established with another glider in the same area, collision avoidance is to be by mutual agreement maintaining a vertical separation of 500 ft in cloud.

62. High Altitude Flying. Association gliders may be flown up to 12,000 ft amsl without additional oxygen. If oxygen is carried, it **should** be used above 10,000 ft. In the event of illness in the air from whatever cause, the airbrakes are to be extended and an immediate descent made to below 10,000 ft. Oxygen systems installed are to be suitable for use in unheated aircraft and are to provide an adequate oxygen supply for flight up to 25,000 ft. Oxygen systems should not be left more than one year without discharging and being recharged. Oxygen systems should never be completely discharged except in emergency and if so discharged are to be purged before replenishment. Oxygen masks are to be compatible with the regulator (economiser system masks are incompatible with demand regulators) and the Type L passenger mask is unsuitable for use below -5°C and should not be used in Association gliders.

63. Flutter Limitations. Pilots should note that glider flutter limitations are largely related to TAS and, therefore, as altitude is gained, the maximum permitted IAS is reduced (as a rule of thumb 1.5% reduction per 1000 ft). Details of limitations on individual gliders can normally be found in the Flight Manual.

64. Decompression Sickness. Above 25,000 ft there is a risk of decompression sickness and this risk increases above 30,000 ft. Pilots are to descend immediately should they suffer pain in joints or other symptoms of altitude.

service and other regulations affecting gliding

1. **BGA Documents.**

[British Gliding Association Laws and Rules](https://members.gliding.co.uk/laws-rules/).

[British Gliding Association Airworthiness & Maintenance Procedures (AMP).](https://members.gliding.co.uk/airworthiness-2/airworthiness-and-maintenance-procedures/)

[British Gliding Association Instructor Manual](https://members.gliding.co.uk/pilot-resources-flying-training/instructors/instructor-resources/).

[British Gliding Association Operational Regulations](https://members.gliding.co.uk/library/bga-requirements-guidance/operational-regulations-of-the-bga/).

[British Gliding Association Aerotowing Guidance Notes](https://members.gliding.co.uk/library/power-flying/aerotowing-guidance-notes/)

[British Gliding Association CFI's Handbook.](https://emea01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fmembers.gliding.co.uk%2Flibrary%2Finstructors%2Finformation-for-chief-flying-instructors&data=02%7C01%7Cmartyn.pike390%40mod.gov.uk%7C1094072355114873fe2c08d68dd87264%7Cbe7760ed5953484bae95d0a16dfa09e5%7C0%7C0%7C636852358097106940&sdata=S6wBp6R0Sw5HLVc7kVB21%2FNXGZhLNA%2Fh3XbzmzrYWRk%3D&reserved=0)

1. **Joint Service Documents.**

[JSP 660](https://modgovuk.sharepoint.com/sites/defnet/HOCS/Pages/JSP-660-Sport-in-the-UK-Armed-Forces.aspx)

[JSP 419 Joint Services Adventurous Training](http://defenceintranet.diif.r.mil.uk/Reference/DINsJSPs/Pages/JSP419.aspx) – Gliding Scheme.

1. **Single Service Documents.**

**RAF**

[AP 100B-01, Order 2.1.11. Emergency Escape Parachutes used by the RAFGSA and RAF Flying Clubs.](https://modgovuk.sharepoint.com/teams/8195/AP100B01/Order%202.1.11%20-%20Emergency%20Escape%20Parachutes%20Used%20by%20the%20RAFGSA%20and%20RAF%20Flying%20Clubs.pdf)

[AP 3415 Sport in the RAF](http://defenceintranet.diif.r.mil.uk/Organisations/Orgs/RAF/Reference/Publications/Pages/AP3415.aspx).

[AP 3223 Administration & Accounting For Service Funds](http://defenceintranet.diif.r.mil.uk/Organisations/Orgs/RAF/Reference/Publications/Pages/AP3223.aspx).

[AP 8000 Safety Management Policy.](https://modgovuk.sharepoint.com/teams/8195/Pages/AP8000.aspx)

[AP 3342 Management of Physical Education in the RAF – Section 5 – Adventurous Training](http://defenceintranet.diif.r.mil.uk/Organisations/Orgs/RAF/Reference/Publications/Pages/AP3342.aspx).

[RAF GAI 1032 RAF Flying Clubs.](http://defenceintranet.diif.r.mil.uk/libraries/corporate/raf/rafgai/Vol1/gai1032.doc)

[RAF GAI 1048 RAF Gliding Clubs.](https://modgovuk.sharepoint.com/%3Aw%3A/r/sites/defnet/Corp/_layouts/15/WopiFrame2.aspx?sourcedoc=%7b9e8ee90c-0cbf-48af-917f-a98b9804dd57%7d)

**Note**: Links to service documents will only work when using intranet compatible computers.

Minimum Qualifications Required To Fly Service Gliding Association Aircraft

1. These are the recommended minimum qualifications are laid down to ensure the safety of aircraft and to provide a balanced rate of advancement for pilots throughout the Association. Individual clubs are entitled to lay down their own qualifications which may be higher, either because of local operating limits or to obtain a balance of utilisation between the different aircraft of the club fleet. Club CFI’s reserve the right to change the minimum recommendation on an individual pilot basis.

2. Conversion between types is a club responsibility. Clubs are to hold available copies of the Flight Manual for the types of aircraft operated.

3. Pilots may not fly cross country in any glider until they have received field landing training. Pilots advancing from one class to another are not to fly cross country or carry water ballast until they have completed 10 local flights, at least one of which is to include an observed spin and recovery in aircraft that are cleared to spin.

4. The decision to convert an individual pilot to a more advanced aircraft is to be based on his personal skills and airmanship. There is no entitlement to advance at a particular level of experience.

5. Tandem two-seat aircraft are to be flown solo from the front seat. When flying passengers an instructor may occupy either seat, but for child passengers (Under 50kg with parachute) he should be in the front seat. When two pilots are flying mutual, the front-seat occupant is to be nominated as captain of the aircraft. The Ops Member has the discretion to apply variation to any of these requirements.

6. The normal recommended requirements to fly as captain are:

|  |  |
| --- | --- |
| **AIRCRAFT TYPE** | **PILOT QUALIFICATIONS** |
| **TANDEM SAILPLANES****(FRONT SEAT)** |  |
| Basic or intermediate trainer | Normally 6 dual Aero-tows and/or winch launches, and instructor approval. |
|  |  |
| **TANDEM SAILPLANES****(REAR SEAT)** |  |
| Basic or intermediate trainer | Rated Instructor, or Instructor Under Training  |
|  |  |
| Advanced trainer (Cross-Country flying)Duo/ DG1000 etc | CFI approval.200 hours gliding.Full Category Instructor with Gold Distance/ Diamond Goal.Experience of Std/ 18m Class. |
| **SAILPLANES** |  |
| Initial Solo Aircraft (e.g. KA 8, KA 18, Astir) | Instructor approval. |
| **COMPETITION SAILPLANES** |  |
| Standard Class (e.g. Discus) | CFI approval.40 hours gliding.Bronze C and 2 Silver legs. |
|  |  |
| Extended Std Class(18m) | 10 landings in 15m or Open Class experience. |
| Open Class (Duo, DG1000 etc) | CFI approval.200 hours gliding.Gold Distance or Full/Assistant Category Instructor.Experience of 15m Class. |
| **POWERED AIRCRAFT** |  |
| Motor gliders | CFI approval.NPPL, SLMG PPL/ SPL/ LAPL TMG.10 hours gliding. |
|  |  |
| SF25 Falke tugs | CFI approval.Silver C desirable. Towing rating onNPPL, SLMG PPL/ SPL/ LAPL TMG Minimum of 10 hours on Type.Pilots must demonstrate maturity and above average pilot skills. |

7. Qualified Service Pilots and PPL, NPPL holders may count 10% of their power hours towards the hour’s requirements up to a maximum of 75%.

8. Tug Pilots are to fly bi-annual standardisation checks to include FLWP and stalling in all aircraft configurations, and details of such checks are to be recorded in their personal log books.

Accident Reporting and Investigation

1. **General.** It is a legal requirement that all flying accidents be reported and investigated either in accordance with current Service procedures or those authorised by the Civil Aviation Authority (CAA). The Dept of Transport delegates accident investigation to the Air Accident Investigation Branch (AAIB). In turn the AAIB delegates the reporting and investigation of glider accidents to the British Gliding Association (BGA). Guidance on reporting is in the RAFGSA SSMP. Overseas, local national rules will apply, and it is the responsibility of the club CFI or Expedition Leader to ensure compliance.
2. **Aims.** The aims of accident reporting, and investigations are to:
3. Determine the cause of the accident.
4. Take any necessary measures to prevent a recurrence of a similar accident.
5. Acquire, collate and analyse accident information within Associations and exchange such information with the other Associations and the BGA.
6. Keep RAFGSA aircraft and equipment records up to date.
7. **Classification.** Accidents and incidents are to be classified by one of 3 categories:
8. **Major Accident.** A major accident is one in which the extent of the damage caused to the aircraft is such that it adversely affects the structural strength or flight characteristics of that aircraft or the aircraft is missing or totally inaccessible. In addition, any accident or incident, irrespective of the degree of damage to the aircraft, in which a person receives serious injuries is also to be classified as a major accident. Serious injuries are defined as follows:
9. Hospitalisation for 48 hrs within 7 days of the accident.
10. Major bone fractures.
11. Serious lacerations of nerves, muscle or tendons.
12. Significant loss of blood or haemorrhaging.
13. Any internal injury.
14. Second or third degree burns to more than 5% of the body.
15. Verifiable exposure to infectious substances or injurious radiation.
16. Any period of unconsciousness as a result of the occurrence.
17. **Minor Accident.** A minor accident is an occurrence in which the damage caused to the glider is outside the above definition or one in which any person receives minor injuries.
18. **Incident.** An incident is any occurrence in which there is neither significant damage nor injury but which nevertheless, in the opinion of the CFI or duty instructor, affected or could affect the safety of flying operations. The term significant is subjective and should be interpreted carefully.
19. **Procedure.** Accident reporting procedures are as follows:
	1. All accidents and incidents are to be reported on BGA Accident reporting forms, and in accordance with Station Procedures. All association accidents and incidents should also be reported using a DASOR on ASIMS. Any non-aviation related incidents should be reported using the Unit’s H&S reporting mechanisms.
	2. All accidents and incidents are to be reported initially by the quickest possible means to the Association Chairman and Operations Member. Written BGA reports on major and minor incidents are to be sent to the BGA as soon as practically possible, with copies sent to the Operations member, Safety member and Fleet manager. If an Aircraft Accident occurs in accordance MAA RA 1430 it needs to be reported to the CDS Duty Officer (DCDSDO) on 9621 88938 or 030 6788 8938. This action will normally be done through the local Stn’s Crash plan.
20. **Initiation Procedure.** The Club CFI or, in the case of a Services competition, the Competition Director, is responsible for all flight safety aspects of flying operations. In particular, they are responsible for initiating the investigation and reporting all accidents and incidents that occur within their sphere of influence. Should an AAIB Investigator be tasked with the investigation then all information is to be surrendered to them on their arrival at the scene. In BGA contests, the Team Leader is to initiate accident reporting.
21. **Investigation.** Primacy for investigation for major accidents is with the CAA delegated to the BGA. In addition, the Association will conduct an investigation using in service policies. All occurrences reported as a DASOR will be investigated at an appropriate level and guidance should be sought from the Ops Member, the RAFGSA Chairman and Military Flight Safety staff.
22. **Suspension of Instructors.** Any instructor who is involved in an accident shall have his rating immediately suspended. This rating can only be reinstated by the Chairman of the BGA Instructor Committee and, in the case of an RAFGSA instructor, in consultation with the RAFGSA Chairman/ Operations Member.
23. **Remedial Action.** Remedia action following all accidents, including glider, ground and tug aircraft accidents, is the responsibility of the Club Chairman. Immediate measures may include:
24. Grounding or cancellation of ‘type’ qualifications.
25. Restrictions on solo flying.
26. Restriction on cross-country flying.

Additionally, the Club Chairman may recommend to the Executive Committee the following measures:

1. An invitation to contribute to the club a sum up to the maximum of the insurance excess, irrespective of whether an insurance claim was made.
2. Withdrawal of Association sponsorship for contest flying for up to 2 soaring seasons.

The Executive Committee reserves the right to take remedial action on accidents to private gliders owned by Association members, full or associate.

1. **Non-Flying Accidents.** There will be occasions when non-flying accidents occur in connection with RAFGSA gliding activities and a Service Inquiry is not required yet the RAFGSA may nevertheless arrange an investigation. The most likely examples are trailer accidents and ground collisions between vehicles and gliders or tugs. The cases requiring investigation are likely to be those in which centrally funded Association equipment is seriously damaged and an individual may be held responsible and invited to contribute to the cost of repairs or an insurance excess charge. Club CFIs are to refer to the RAFGSA Chairman for advice on whether an RAFGSA investigation is needed in individual cases, noting that substantial damage to a centrally-funded and centrally-insured glider trailer will always merit investigation. The form of accident report may be varied where the usual glider-related form would be inappropriate, but the general principles above still apply.
2. **Analysis.** The RAFGSA may publish an annual survey of accidents and incidents which will be circulated to all clubs, the British Gliding Association and Executive Council members. Accident summaries are not to identify individuals or clubs.

SF 25 Operations in Strong Winds

* + 1. **SF 25 Wind Limitations.**

The maximum wind and cross-wind limitations of the SF25 Falke aircraft are as follows:

Maximum wind ... 25 knots.

Maximum Cross-wind Component ... 13 knots.

* + 1. **The Dynamics of a Nose-Over.** Because the SF25 design gives it a tailwheel, the aircraft has nothing to stop it nosing over except the propeller. On the ground the aircraft's Centre of Gravity (C of G) lies a short distance behind the undercarriage axle line in the area of the front seat pan. It is important to consider the vertical position of the C of G because, as the tail rises at the start of a nose-over, the C of G is rotated forwards towards the axle line and the natural tendency for the aircraft to sit on its tail (gravity) reduces quickly. Once the tail starts to rise, the factor which is causing it to rise has a progressively easier job and the SF25 will accelerate into its nose-over. As the C of G arrives over the axle line (15-20 degrees nose down) the aircraft now wants to sit on its nose, gravity again, and clatter, clatter, silence. One bent prop and a shock loaded engine.

The following factors will induce a tendency for the SF25 to nose-over:

1. **Power-Against-Braking.** The SF25s thrust line is 4 ft above the axle line, and any power-against-brake, on one or both brakes, may try to pitch the aircraft forward over the wheels.
2. **Elevator Control Position.** The elevator is an effective control. With all 3 wheels in contact with the ground, the stick should be held fully back. With any wind or slipstream blowing over the tailplane, this stick position provides a powerful download on the tail in addition to gravity. Landing roll outs and taxiing into wind without full back stick may lend themselves to nose-over. Taxiing downwind should be carried out with the stick central if the tailwind 'grabs' at the controls, the wind will then be hitting the top surface of the tailplane providing a little more download.
3. **Propeller Effects.** Power-on torque drives the propeller in one direction and tries to roll the fuselage the opposite way. This pushes one wheel hard into the ground, ground friction (especially on soft ground) is increased and the aircraft yaws towards that wheel. The propeller wash acts in the same way as it spirals past the fin and rudder, and propellers gyroscopic and aerodynamics forces complicate the process further.

The one factor required to start a nose-over is power against brake. Taxi slowly with minimum power and minimum brake and a nose-over is most unlikely. These effects are most noticeable and hazardous with strong cross-winds from the right.

* + 1. **Taxiing.** Care must be taken when taxiing in wind speeds exceeding 15 kt. This is essential when operating off grass when considerably more power is needed to taxi. If the aircraft will not turn with the brakes correctly set, a wing holder/walker should be used to 'hold back' on the downwind wing. This minimises the use of power-against-brake which features in all tailwheel nose-over incidents. It must be noted that taxiing directly across wind in wind speeds exceeding 13 kt exceeds the SF25’s cross-wind limit. Another factor which determines that 13 kt is a realistic figure, is elevator and rudder effectiveness. Below flying speed (40 kt) with a 13 kt + cross-wind component, propeller wash is blown off to one side thereby dramatically reducing elevator effectiveness, and full back stick normally held while taxiing will not contribute to holding the tail down. Taxiing downwind in wind speeds greater than 20 kt requires great care, and if the wind increases and exceeds 25 kt, no attempt to taxi downwind must be made - shut down and push the aircraft back to the launch point or retrieve it off the grass by tractor on the aero-tow rope. In both cases, keep the aircraft's nose pointing as near to the wind as possible and keep the pilot in the cockpit.

**RAFGSA GLIDING DAILY DYNAMIC RISK ASSESSMENT**

|  |  |
| --- | --- |
| **Date**  | **Location** |
|  |  |
| **Duty Instructor** | **Duty Pilot** |
|  |  |
| **Met Brief published**  | **Yes or No** |
| **Met Warnings? Yes or No (List detail)**  | **Effect** |
| **NOTAMS Checked? Yes or No****(Within the local operating area)** | **Impact** |
| **Take-off / Landing direction****Cross Wind?**  |  |
| **Launch Method** **(Winch – W Aerotow – A)** |  |
| **Who Can Fly as P1 locally****(Tick Appropriate minimum qual for conditions)** | **All Pilots** |
| **Qualified pilots** |
| **Silver C** |
| **Bis** |
| **Ass Cats** |
| **Full Cats** |
| **Who can Fly Cross Country****(Full Cat minimum for 2 seaters)** | **Qualified Pilots** |
| **Silver C** |
| **Gold C** |
| **Cross Country Routes** |  |
| **Rt A** |
| **Rt B** |
| **Rt C** |
| **Remarks:** |

tn4B mODIFIED k21- SPINNING

1. The Standard Operating Procedure for spinning the K21 with the TN4B modification is set out as follows.

 a. The glider must have serviceable accelerometers.

b. The minimum entry heights be adopted.

 i) 3,300 ft for a 1 turn spin

 ii) 4,300 ft for a 3 turn spin

 d. A minimum height to commence recovery of 3000 ft AGL.

e. The minimum abandonment heights to be agreed as part of the TEM pre-flight brief, but not lower than 2000 ft AGL.

f. Club instructors to be fully trained in the correct and prompt recovery techniques with the weights fitted.

g. Stalls and spiral dive training to be carried out without the weights fitted.

h. Winch launching is forbidden with the spin ballast weights fitted.

2. Instructors are to be trained and authorised by the CFI or CFI nominated instructors to undertake K21 spin training with the TN4B modification in place.