FAI Sporting Code

Fédération Aéronautique Internationale

Section 3 – Gliding

CLASS D (gliders)

including Class DM (motorgliders)

2013 Edition

valid from 1 October 2013

The complete Sporting Code for Gliding is the General Section and Section 3 combined.

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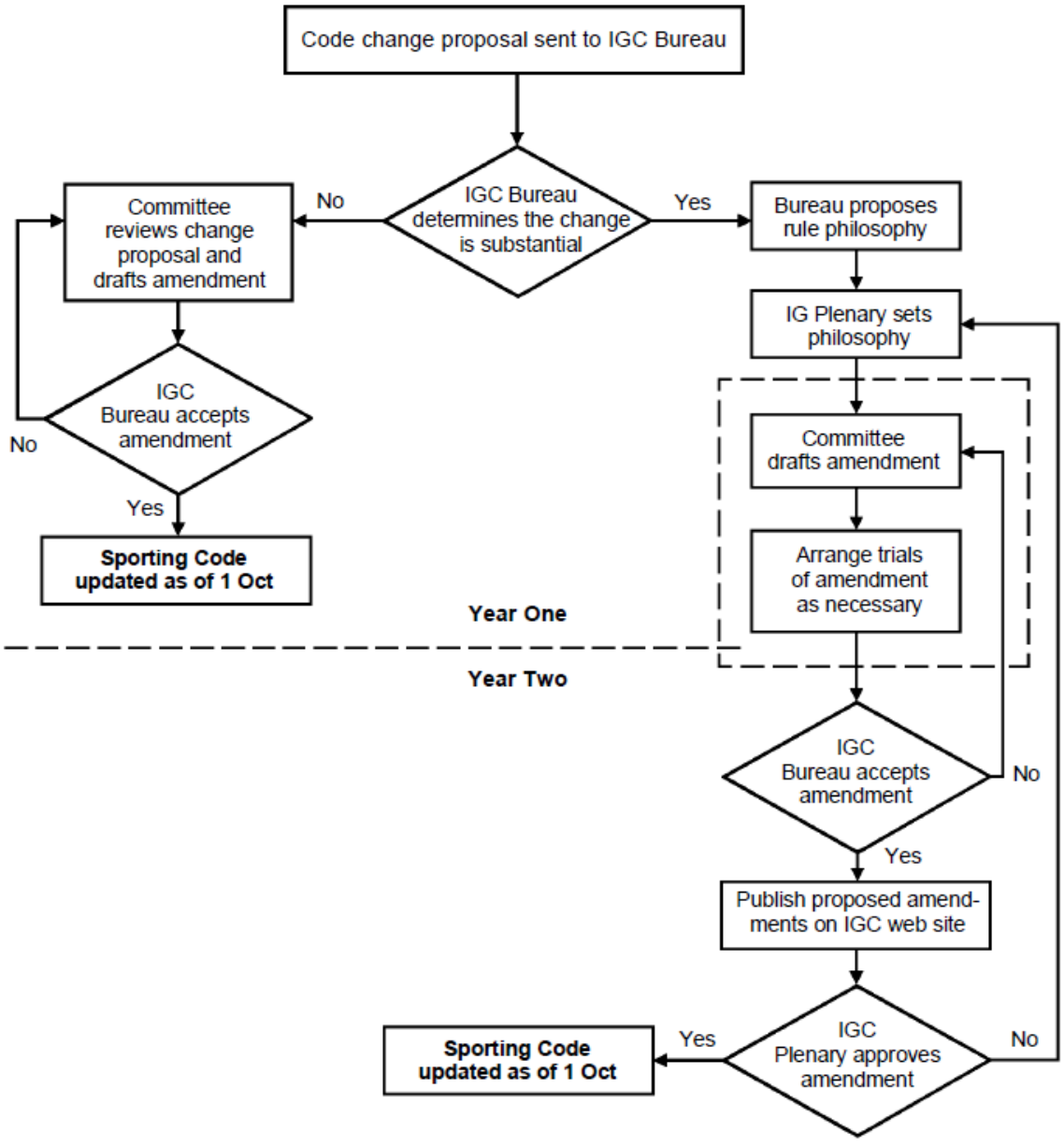
1 FAI Statutes Chapter 1, para 1.6
2 FAI Sporting Code, General Section Chapter 3, para 3.1.3
3 FAI Statutes Chapter 1, para 1.8.1
4 FAI Statutes Chapter 2, paras 2.1.1, 2.4.2, 2.5.2 and 2.7.2
5 FAI Bylaws Chapter 1, para 1.2.1
6 FAI Statutes Chapter 2, para 2.4.2.2.5
7 FAI Bylaws Chapter 1, para 1.2.2 to 1.2.5
8 FAI Statutes Chapter 5, paras 5.1.1, 5.2, 5.2.3 and 5.2.3.3
9 FAI Sporting Code, General Section Chapter 3, para 3.1.7
10 FAI Sporting Code, General Section Chapter 1, paras 1.2 and 1.4
11 FAI Statutes Chapter 5, para 5.2.3.3.7
12 FAI Bylaws Chapter 6, para 6.1.2.1.3

Sporting Code review and amendment process

The review and amendment process is illustrated by the flowchart below. A proposal for an amendment to the Sporting Code or its annexes must be submitted to the IGC Bureau at least six months prior to the next IGC Plenary meeting. A proposal must refer to the paragraphs affected and give reasons for the amendment. It is preferable for the proposed change to be in the format of the Code.

A substantial change is effective on 1 October following the IGC meeting at which it is approved, except that if it has flight safety implications, the Bureau may approve it prior to the IGC meeting. A simple clarification to the Code becomes effective on 1 October following approval by the Bureau. In either case, the amended Sporting Code is then placed on the FAI web site at <*www.fai.org/gliding/sporting_code*>.

The most recent amendments are indicated by a vertical line to the right of any paragraph that has been changed, as shown here. The text may also contain editorial changes to improve its clarity. Such changes are not indicated.



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Chapter 1

GENERAL DEFINITIONS and RULES

The FAI Sporting Code for gliders (the "Code") sets out the rules to be used to verify a soaring performance. The essence of these rules is to ensure that the level of proof achieved is consistent for all flights. When processing the evidence supplied, the National Airsport Control (NAC) and Official Observers (OOs) should ensure these rules are applied in the spirit of fair play and competition.

Text in italic is informational in nature and not part of the rules of the Code.

1.0 INTRODUCTION

1.0.1 The General Section of the Sporting Code (GS) contains general definitions and rules that apply to all air sports. This section of the Code (SC3) gives specific rules that apply to FAI badge and record flights in gliders and motor gliders defined in GS 2.2.14 as "Class D" aircraft. A GLIDER is a fixed wing aerodyne capable of sustained soaring flight and having no Means of Propulsion (MoP). A MOTOR GLIDER is a fixed wing aerodyne equipped with a MoP, capable of sustained soaring flight without thrust from the MoP.

1.0.2 Terms, rules, and requirements in SC3 are defined first in their most general sense. Where an exception to a general rule exists, it will be described in the text of the Code where the exception occurs. For example, the term "glider" includes "motor glider" unless the difference is relevant in the given text. Reference to a flight recorder or position recorder implies all recorders if more than one are carried on a flight. A word or phrase in small capital letters in this chapter indicates that it has a distinct Code definition.

1.0.3 SC3 includes the following annexes:

a. Annex A Contains rules for world and other FAI-sanctioned gliding competitions.

b. Annex B Covers requirements for equipment used for flight validation.

c. Annex C Gives non-regulatory guidance, methods and sample calculations to assist Official Observers and pilots in complying with SC3.

d. Annex D Contains the rules for the IGC Ranking list that gives the current World ranking position of pilots who have entered IGC competitions.

1.0.4 **National Airsport Control** A "NAC" has administrative responsibility for a nation's sport aviation activities, such as issuing Sporting Licences. The verification of national records and other responsibilities are often delegated to a national gliding body. In this Code (SC3) and its Annex C, "NAC" refers to either body. See Annex C 1.3 for a description of NAC recommended practices for flight claims other than international records.

a. *ORGANIZING NAC* The Organising NAC issues the FAI Sporting Licence to a person attempting an International record. This NAC is responsible for certifying the person's or the team's flight as a National record and for submitting the International record claim dossier to the FAI, regardless of where the record attempt took place (GS 6.4.1 refers).

b. *CONTROLLING NAC* When a record flight both originates and terminates in a country other than that of the Organising NAC, the local NAC is known as the Controlling NAC, which shall control the flight by authorising the OOs involved. If necessary, and/or if so requested by the Organising NAC, a Controlling NAC shall also provide control of record flights that either originate or terminate in its country. (GS 6.4.2 refers).

c. If a controlling NAC either does not exist in a country or is inactive, the organizing NAC may assume the responsibility for the control of a record or badge flight in that country.

Note: The organising NAC should contact the FAI sports department (sports@fai.org) to confirm that an effort has been made to contact any controlling NAC.

1.0.5 "International record" applies to World or Continental records and within SC3, "record" can apply to either or both types according to context. "Badge" applies to flights at FAI Silver, Gold, Diamond or Diploma achievement levels.

1.0.6 **Related documents** The FAI document, *"Technical Specifications for IGC-Approved GNSS Flight Recorders"* gives information for FR manufacturers. Section 6 covers gliding aerobatic competition, Section 7, hang gliders and paragliders (GS-2.2.1.13, class O), and Section 10, microlights (GS-2.2.1.15, class R). Gliding competition classes are defined in SC3-6.5.

1.1 GENERAL DEFINITIONS

OFFICIAL OBSERVER 1.1.1 The person having control of a flight undertaken for an FAI badge or record attempt and of the data gathered to prove the SOARING PERFORMANCE (Chapter 5 refers).

DECLARATION 1.1.2 The official pre-flight data and description of a SOARING PERFORMANCE (details in 4.2).

GNSS / GPS 1.1.3 A Global Navigation Satellite System such as the Global Positioning System (GPS) using multiple satellites operating with receivers to create position data.

FLIGHT RECORDER 1.1.4 An electronic device that has been approved by the IGC to record GPS flight data.

POSITION RECORDER 1.1.5 A GPS device that can record GPS flight data, but does not have IGC approval as a FLIGHT RECORDER. The Appendix to Chapter 4 defines their approval and use.

BAROGRAPH 1.1.6 An electronic recording barometer incorporated into a FLIGHT RECORDER or a stand-alone mechanical or electronic device.

BAROGRAM 1.1.7 The altitude data output of a FLIGHT RECORDER or electronic BAROGRAPH or the "trace" produced by a mechanical BAROGRAPH.

MEANS of PROPULSION (MoP) RECORDER 1.1.8 A device that records noise level or other data indicating MoP use. A device failure must either register as MoP use, or as MoP data with a numeric value of "000" in the .igc file.

1.2 DEFINITION of FLIGHT TERMS

SOARING PERFORMANCE 1.2.1 The portion of a glider flight from the START POINT to the FINISH POINT.

WAY POINT 1.2.2 A point on the surface of the earth precisely specified by a set of coordinates or by a word description. A WAY POINT may be a START POINT, TURN POINT, or FINISH POINT.

LEG 1.2.3 The straight line between two successive WAY POINTS. The claimed length of a LEG may be reduced as given in 1.3.9.

COURSE 1.2.4 All the LEGS of a SOARING PERFORMANCE. A CLOSED COURSE has the START and FINISH at the same WAY POINT.

OBSERVATION ZONE 1.2.5 The airspace a glider must enter to attain a WAY POINT. An OBSERVATION ZONE (OZ) may be either a CYLINDER (1.3.6) that is usable for TURN POINTS only, or a SECTOR (1.3.8) that is useable for all WAY POINTS. A START LINE or FINISH LINE has no OZ.

RELEASE POINT 1.2.6 The point on the ground vertically below where the glider releases or ceases using a MoP.

FIX 1.2.7 A single data point selected from recorded flight data giving latitude, longitude, time, from a FLIGHT RECORDER, pressure altitude, or from a POSITION RECORDER, GPS altitude.

START POINT

1.2.8 The WAY POINT that marks the beginning of a SOARING PERFORMANCE at either:

a. the RELEASE POINT,

b. a declared START POINT,

c. the midpoint of a START line, or

d. on a free record flight, a FIX selected post-flight as a START POINT.

START LINE

1.2.9 A horizontal line, 1 km in length, oriented approximately perpendicular to the first LEG. The midpoint of the line (the START POINT) is at ground level.

TURN POINT

1.2.10 A WAY POINT between two LEGS of a flight.

FINISH POINT

1.2.11 The WAY POINT that marks the end of a SOARING PERFORMANCE at either:

a. the landing, where the nose of the glider comes to rest without external assistance,

b. a declared FINISH POINT,

c. the midpoint of a FINISH line,

d. a FIX selected post-flight as a FINISH POINT, or

e. a FIX established by the starting of a MoP.

FINISH LINE

1.2.12 A horizontal line, 1 km in length, oriented approximately perpendicular to the last LEG. The midpoint of the line (the FINISH POINT) is at ground level.

GOAL FLIGHT

1.2.13 A SOARING PERFORMANCE that requires a declared START POINT and FINISH POINT (1.4.4 and 1.4.6 refer).

1.3 DEFINITION of SOARING MEASUREMENT TERMS

START TIME and ALTITUDE

1.3.1 The time and altitude (msl) at which the SOARING PERFORMANCE begins, both determined by the type of SOARING PERFORMANCE and the type of START POINT claimed:

a. When a declared START POINT is not required for a given performance, START TIME and ALTITUDE may be taken at the RELEASE POINT or, for a free distance performance, at a FIX selected post-flight as the START POINT.

b. When a declared START POINT is claimed for a distance performance, START TIME and ALTITUDE may be taken at:

(i) the exit from the START OZ SECTOR,
(ii) the crossing of a START LINE, or
(iii) the most favourable FIX recorded within the START OZ SECTOR.

c. The SECTOR OZ radius for GOAL or CLOSED COURSE distance performances is 1000m.

d. For speed performances, a declared START / FINISH POINT is required; START TIME and ALTITUDE must be taken at an exit from the START OZ SECTOR with a 1000 metre radius or on crossing a START LINE.

FINISH TIME and ALTITUDE

1.3.2 The time and altitude (msl) at which a SOARING PERFORMANCE ends, both determined by the type of SOARING PERFORMANCE and the type of FINISH POINT claimed:

a. For a finish at landing, FINISH TIME is the time of landing and FINISH ALTITUDE is the landing site msl elevation.

b. For an airborne finish at a declared FINISH POINT, FINISH TIME and ALTITUDE may be taken at:

(i) the glider's entry into the FINISH OZ SECTOR,
(ii) the crossing of a FINISH LINE, or
(iii) a FIX within the FINISH OZ SECTOR.

c. The SECTOR OZ radius for a GOAL or CLOSED COURSE flight is 1000m.

d. When a declared FINISH POINT is not claimed, FINISH TIME and ALTITUDE may be taken at landing, starting of the MoP, or any FIX selected as the FINISH POINT.

Paragraph A.7 to the Chapter 4 Appendix gives provisions for start and finish altitudes and times when a POSITION RECORDER is used.

DURATION 1.3.3 The elapsed time between the START TIME and the FINISH TIME.

LOSS OF HEIGHT 1.3.4 The START ALTITUDE minus the FINISH ALTITUDE. The limit to this loss is given in 4.4.3.

GAIN OF HEIGHT 1.3.5 The greatest altitude difference between a recorded high point and a previous low point during a SOARING PERFORMANCE.

CYLINDER OZ 1.3.6 The airspace within a vertical cylinder of 500 metres radius centred on a TURN POINT.

OZ CORRECTION 1.3.7 Each time a LEG crosses a CYLINDER OZ boundary, 500 metres shall be subtracted from the length of that LEG. This correction does not apply where a FIX is used as a WAY POINT in free record performances.

SECTOR OZ 1.3.8 A quadrant of airspace having its apex at the WAY POINT. Except as limited by 1.3.1 and 1.3.2 for CLOSED COURSE and GOAL flights, the radius of the OZ is unlimited and its orientation is:

a. For a TURN POINT, symmetrical to and remote from the bisector of the inbound and outbound LEGS at the TURN POINT,
b. For a START POINT, symmetrical to and remote from the outbound LEG,
c. For a FINISH POINT, symmetrical to and remote from the inbound LEG.

OFFICIAL DISTANCE 1.3.9 The sum of the LEGS, with OZ CORRECTION deducted where applicable, less any LOSS OF HEIGHT penalty. This distance shall be used when calculating of COURSE speed.

1.4 SOARING PERFORMANCE TYPES and REQUIREMENTS

The following paragraphs define all the SOARING PERFORMANCES that may be flown for records or badges. Table 1 at the end of this chapter presents the information in spreadsheet form.

1.4.1 General

a. A SOARING PERFORMANCE may be claimed from any flight that meets the requirements of proof for that performance.
b. A DECLARATION and electronic flight data are required except where specifically exempt (4.2 refers).
c. WAY POINTS must be declared and used in the sequence declared, except where specifically not required in these rules.
d. No more than three TURN POINTS may be declared and no more than four LEGS may be claimed for a SOARING PERFORMANCE.

1.4.2 Duration, gain of height and absolute altitude performances

A DECLARATION is not required for duration and gain of height badge flights that use only a POSITION RECORDER *(per the Chapter 4 Appendix)* or a stand-alone BAROGRAPH for evidence. The SOARING PERFORMANCE for an absolute altitude record must be preceded by a gain of height of at least 5000 metres.

1.4.3 Distance performance (badges only)

STRAIGHT DISTANCE A COURSE having one LEG, with distance measured from the RELEASE POINT or a declared START POINT to any type of FINISH POINT. If no WAY POINTS are declared, data recorded by a POSITION RECORDER or stand-alone BAROGRAPH is sufficient. In this case, the OO actions required by 4.5.5a through 5d apply, no DECLARATION is required, the RELEASE POINT is the START POINT, and the landing is the FINISH POINT.

1.4.4 Distance performance (records only)

DISTANCE TO A GOAL A COURSE having one LEG, with OFFICIAL DISTANCE measured from a declared START POINT to a declared FINISH POINT. The OZ radius at each of these WAY POINTS is 1000 metres.

1.4.5 **Distance performance (badges and records)**

DISTANCE USING UP TO THREE TURN POINTS A COURSE with distance measured from the RELEASE POINT or a declared START POINT to any type of FINISH POINT, via at least one and not more than three declared TURN POINTS. TURN POINTS may include the START POINT and/or FINISH POINT if desired. The TURN POINTS must be at least 10 kilometres apart, and each may be claimed only once in the sequence attained.

1.4.6 **Distance and speed performances (badges and records)**

The following CLOSED COURSES may be used for badge distance and must be used for speed records and Diamond Goal flights. All WAY POINTS must be declared, and the OZ SECTOR radius at the START and FINISH is 1000 metres.

a. *OUT AND RETURN FLIGHT* A CLOSED COURSE having only one declared TURN POINT.

b. *TRIANGLE FLIGHT* A CLOSED COURSE having three LEGS. For triangle record COURSES of 750 km or more, the length of each LEG shall be 25% to 45% of the OFFICIAL DISTANCE. For record COURSES shorter than 750 km, no LEG may have a length of less than 28% of the OFFICIAL DISTANCE. The geometry may be either:

(i) A triangle having two TURN POINTS, or

(ii) A triangle having three TURN POINTS independent of the position of the START/FINISH POINT. The distance is given by the sum of the LEGS of the triangle formed by the TURN POINTS. The minimum OFFICIAL DISTANCE (1.3.9) is 300 kilometres.

1.4.7 **Free distance performance types (records only)**

The START POINT of a free distance performance is a FIX after release chosen by the pilot to suit the record being claimed, and establishes the FINISH POINT for a CLOSED COURSE flight. WAY POINTS may be selected from FIXES claimed post-flight or may be declared prior to the performance. Free distance record courses may be open-ended or closed.

1.4.8 **Free distance open-ended course records**

The free distance open-ended course types are:

a. *FREE STRAIGHT DISTANCE* A COURSE having one LEG.

b. *FREE DISTANCE USING UP TO THREE TURN POINTS* A COURSE via at least one, and not more than three TURN POINTS. TURN POINTS may include the START POINT and/or FINISH POINT if desired. TURN POINTS must be at least 10 km apart and each may be claimed only once.

1.4.9 **Free distance closed course records**

The free distance closed course types are:

a. *FREE OUT AND RETURN DISTANCE* A CLOSED COURSE having only one TURN POINT.

b. *FREE DISTANCE AROUND A TRIANGLE* A CLOSED COURSE having three LEGS.

The restrictions on triangle geometry given in 1.4.6b apply. The pilot may fly either:

(i) A triangle using two TURN POINTS, or

(ii) A triangle using three TURN POINTS independent of the position of the START/FINISH POINT. In this case, the triangle distance is given by the sum of the LEGS of the triangle formed by the TURN POINTS.

TABLE 1

SOARING PERFORMANCE	SC3 Citation	Task Choices	GENERAL REQUIREMENTS			START ALTERNATIVES			FINISH ALTERNATIVES		
			Items required in declaration	Maximum # of TPs declared / claimed	Course Legs claimed	FR START Fix	Release or MoP stop	Start Line or declared Start Point (OZ radius)	By Landing (1.2.11a)	Finish Line or declared Finish Point (OZ radius)	Using a Finish Fix (1.2.11d)
Straight Distance	1.4.3	Badge	4.2.1 a to g as appropriate	3 / 0	1	No	OK	OK (unlimited)	OK anywhere	OK (unlimited)	OK anywhere
Distance using up to 3 Turn Points	1.4.5	Badge or Record		3 / 3	2 to 4						
Distance to a Goal	1.4.4	Record		3 / 0	1		Only if declared as the START POINT	Required (1000 m)	Only in FINISH OZ Sector	Required (1000 m)	Only in FINISH OZ Sector
Out & Return flight	1.4.6a 2.1.3b	Badge Distance, Diamond Goal, & Distance or Speed Records		1 / 1	2				Only in FINISH OZ Sector at declared START POINT	Same as declared START POINT (1000 m)	Only in FINISH OZ Sector at declared START POINT
Triangle flight (2 Turn Points)	1.4.6b(i) 2.1.3b			2 / 2	3						
Triangle flight (3 Turn Points))	1.4.6b(ii) 2.1.3b			3 / 3	3						
Free Straight Distance	1.4.8a	Distance Record	4.2.1 a to d	3 / 0	1	OK	OK	OK (unlimited)	OK anywhere	OK (unlimited)	OK anywhere
Free Distance using up to 3 Turn Points	1.4.8b			3 / 3	2 to 4						
Free Out & Return Distance	1.4.9a			1 / 1	2			OK (1000 m)	OK in FINISH OZ Sector at claimed START POINT	OK at declared START POINT (1000 m)	OK in FINISH OZ Sector at claimed START POINT
Free Triangle Distance (2 Turn Points)	1.4.9b(i)			3 / 2	3						
Free Triangle Distance (3 Turn Points)	1.4.9b(ii)			3 / 3	3						
Absolute Altitude	1.4.2 3.1.3b	Record	4.2.1 a to d as appropriate	**N O T E S** • When a start or finish line is used there is no OZ in effect. • Position recorders are permitted as provided for in the Appendix to Chapter 4. • 3-TP triangle distance for badges and records is measured: TP1 – TP2 – TP3 – TP1. • For records, the minimum leg length for distance or speed triangles of less than 750 km is 28% of the official distance. For courses 750 km or longer, no leg may be less than 25% or more than 45% of the official distance.							
Gain of Height	1.3.5 1.4.2	Badge or Record									
Duration	1.3.3 1.4.2	Badge									

Chapter 2

FAI BADGES

This chapter defines the requirements to meet the international standard levels of soaring achievement.

2.0 GENERAL

Awarded by each NAC, The FAI badges are a set of international standards of soaring achievement that do not need to be renewed.

a. The pilot must be alone in the glider, and the OO must certify that this was the case.

b. Each NAC should maintain a register of badge flights it has validated, retaining the pilot's name, nationality, and the dates and details of each flight performance.

c. A flight recorder will provide the in-flight time, altitude and position evidence required for analysis of any badge flight. Alternatives permitted for certain badge performances are discussed in 1.4.2, 1.4.3, 4.3.2c, 4.5, and the Chapter 4 Appendix for position recorders.

d. The distance requirement for each badge shall be the calculated official distance (1.3.9).

2.1 BADGE REQUIREMENTS

2.1.1 Silver Badge

The Silver badge is achieved on completing the following soaring performances:

a. SILVER DISTANCE a flight that includes a leg of at least 50 kilometres. This leg may be part of a longer declared flight. The loss of height (4.4.3) is calculated on the entire flight, not just on the portion claimed. *See Annex C-2.2.*

Note: the Silver distance flight should be flown without navigational or other assistance given over the radio (other than permission to land on an airfield) or help or guidance from another aircraft.

b. SILVER DURATION a duration flight of at least 5 hours.

c. SILVER HEIGHT a gain of height of at least 1000 metres.

2.1.2 Gold Badge

The Gold badge is achieved on completing the following soaring performances:

a. GOLD DISTANCE a distance flight of at least 300 kilometres.

b. GOLD DURATION a duration flight of at least 5 hours.

c. GOLD HEIGHT a gain of height of at least 3000 metres.

2.1.3 Diamonds

There are three Diamonds, each of which may be worn on the Silver or Gold badge, and the badges for flights of 750 kilometres or more. A Diamond is achieved by completing one of the soaring performances below:

a. DIAMOND DISTANCE a distance flight of at least 500 kilometres.

b. DIAMOND GOAL a goal flight of at least 300 kilometres over an out-and-return course (1.4.6a) or triangular course (1.4.6b).

c. DIAMOND HEIGHT a gain of height of at least 5000 metres.

2.1.4 Badges for flights of 750 kilometres and more

These are a family of badges that are achieved on completing a distance flight of 750 kilometres or more, in increments of 250 kilometres (ie. 750 km, 1000 km, 1250 km, etc.). One badge is awarded per flight for the incremental distance immediately less than the distance flown.

2.1.5 **FAI register of Diamond and greater badges**
Upon completion of the Diamond badge or a 1000 kilometre or greater flight by a pilot, the NAC shall provide the FAI with the flight data contained in its national register per 2.0b above. In turn, the FAI will enter the name of the pilot in an international register, and will award the pilot a special Diploma for flights of 1000 kilometres and more.

2.2 BADGE DESIGN (reproduced approximately twice real size):

2.2.1 **Silver and Gold Badges**

2.2.2 **Three Diamonds Badge** (1 & 2 Diamonds similar)

2.2.3 **750 Kilometre and more Badges**
(1000 km illustrated, others and with one and two Diamonds, similar.)

Chapter 3

INTERNATIONAL GLIDING RECORDS

3.0 GENERAL

No advance notice for a record attempt is required provided that arrangements have been made for controlling the flight. The following rules covering International (World and Continental) records must be met:

a. The pilot must possess a valid FAI Sporting Licence.

b. The flight data must be from a flight recorder approved at the “all flights” level.

c. With the exception of a flight having a crew as defined in 3.1.3b, a world record claim must first be approved as a national record.

d. A Continental record does not require prior approval as a national record.

3.1 RECORD CATEGORIES, CLASSES, and TYPES

Record categories relate to the pilot, record classes to the glider, and record types to the soaring performance.

3.1.1 **Pilot categories** General category includes any pilot. In the feminine category, each person aboard the aircraft must be female.

3.1.2 **Record classes** FAI Class D records are in the following classes:

a. OPEN any FAI Class D aircraft.
b. 15 METRE any FAI Class D aircraft with a wingspan not exceeding 15,000 mm.
c. WORLD a PW-5 glider as defined in 6.5.7.
d. ULTRALIGHT an FAI Class D aircraft with a takeoff mass not exceeding 220 kg. (A MICROLIFT glider is an ULTRALIGHT with a wing loading not exceeding 18 kg/m². It does not have separate records).

3.1.3 **Multiplace gliders and motor gliders** These gliders are included in the 3.1.2 record classes where applicable.

a. When a multiplace glider is being used, all flight crew must be named on the FR declaration, be named in full on the claim form, and be at least 14 years old. Only flight crew possessing a valid Sporting Licence will be named in the FAI records register.

b. When the pilot and flight crew claim a world record using a multiplace glider, they may be categorised as a team. In this case, each crew member must hold a Sporting Licence, and the claim will be registered to the declared pilot-in-command.

c. Absolute altitude and gain of height records are restricted to the Open record class.

3.1.4 **International record achievement margins**

a. A new record claim must exceed the current value by 1 km for distance, 1 km/h for speed, and 3% for altitude using mechanical barograph data, 1% using electronic pressure data, or 150m using GPS height data.

b. When a new International record category, class, or type is created, a minimum performance level may be set by the IGC and published on the FAI web site.

3.1.5 **Designation of records**

Glider records are designated by code letters starting with the FAI code letter for gliders (D), then adding the glider class, and finally the pilot category (general or feminine):

Open Class glider records	designated by adding the letter O.
15m Class glider records	designated by adding the number 15.
Ultralight glider records	designated by adding the letter U.

World Class glider records	designated by adding the letter W.
The General pilot category	designated by the letter G.
The Feminine pilot category	designated by the letter F.

Examples: DWF Gliding, World class, Feminine
D15G Gliding, 15 metre class, General

TABLE 2

Types of record flights

	Flight Performance	*Ref.*	*Remarks (see Chapter 1 for details)*
Free distance records			
3.1.4a	Free Straight Distance	1.4.8a	No turn points
3.1.4b	Free Distance using up to 3 TPs	1.4.8b	1 to 3 free turn points
3.1.4c	Free Out-and-Return Distance	1.4.9a	Closed course with one free turn point
3.1.4d	Free Triangle Distance	1.4.9b	Closed course with 2 or 3 free turn points
Declared distance records			
3.1.4e	Distance to a Goal	1.4.4	Declared goal with no turn points
3.1.4f	Distance Using Up to 3 TPs	1.4.5	1 to 3 declared turn points
3.1.4g	Out-and-Return Distance	1.4.6a	Closed course with one declared turn point
3.1.4h	Triangle Distance	1.4.6b	Closed course with 2 or 3 declared turn points
Speed records			
3.1.4i	Speed over an out and return course of 500 km and all multiples of 500 km	1.4.6a	1 declared turn point
3.1.4j	Speed over a triangular course of 100, 300, 500, 750, 1250 km and all multiples of 500 km	1.4.6b	2 or 3 declared turn points
Altitude records			
3.1.4k	Absolute altitude	1.4.2	Open class only, see 4.5.3 on evidence
3.1.4m	Gain of Height	1.4.2	Open class only, see 4.5.3 on evidence

3.2 CONTINENTAL REGIONS

The continental regions defined in GS-3.4.5 will be used, with the exception that the part of the Russian Federation east of the 61° meridian will be assigned to Asia. A flight that crosses the border between continental regions will be credited to the region in which the take-off occurs.

3.3 FALSIFICATION of EVIDENCE

Should it be proven that any person involved in a world record claim has altered, concealed, or in any other way misrepresented the evidence with the intent to deceive, the claim shall fail. The FAI will withdraw the Sporting Licences of those guilty of the fraud and may cancel permanently or for a period of time any other award, record, title, etc. it has conferred. A NAC may be asked to cancel the appointment of the OO(s) involved where appropriate. (See also 5.1.7)

3.4 TIME LIMITS on RECORD CLAIMS

3.4.1 **Claim notice**

Notice of a claim for an international record must be submitted by the NAC or the OO controlling the attempt, and the FAI must receive the claim within seven days of the flight. In exceptional circumstances, the president of the IGC may grant an extension. Telephone, fax, e-mail, and similar types of notification are acceptable.

3.4.2 **Claim documentation**

The NAC shall forward claim documentation to reach the FAI within 120 days of the date of the flight unless an extension of time has been authorised by the IGC President (GS-6.8.2 refers).

Chapter 4

VERIFICATION REQUIREMENTS and METHODS

This chapter defines the evidence, measurements and calculations required to verify soaring performances. Annex C gives examples of ways and means by which this may be done, such as the calculation of distances, and GPS flight recorder data analysis methods.

4.1 FLIGHT DATA REQUIREMENTS

A badge or record flight may require evaluation of some or all of the following flight data. Different soaring performances will require subsets of this list:

a. declaration (1.1.2)
b. start point (1.2.8)
c. start altitude & time (1.3.1)
d. turn point(s) (1.2.9)
e. finish point (1.2.10)
f. finish altitude & time (1.3.2)
g. absolute altitude (1.4.2)
h. loss of height (1.3.4)
i. gain of height (1.3.5)
j. flight continuity (4.3.2)

4.2 DECLARATION REQUIREMENTS

All flights require a *pre-flight* declaration except straight distance badge flights using only a barograph for verification. Only the most recent declaration is the valid one.

a. For record flights, the declaration must be input to a FR and appear in its .igc file.

b. For badge flights, the declaration shall be input to a FR and appear in its .igc file or be written, either on a single sheet of paper or transmitted via the internet. If the latter, the pilot shall e-mail the OO or input to a NAC-approved website. The declaration time shall be the time that the e-mail is received by the OO or the website. *See Annex C-3.5 for notes on internet-based declarations.*

c. For any straight distance flight claimed from release to the landing or to a finish fix, the relevant details of 4.2.1 shall be certified by the OO.

d. If the pilot or glider information is omitted or incorrect in the FR declaration for a Silver or Gold badge flight, the OO certificate required by 5.2.4 shall take precedence.

e. When more than one FR is used, they must have identical flight task data input, and if one fails, the other becomes the direct replacement.

f. A written declaration shall be retained by the OO and submitted with other claim materials.

See Annex C-3.4 for general notes on declarations and 6.4 on the format of a declaration as it appears in an .igc file. Consult the FR manufacturer's user manual to determine which method a FR uses to record declaration date and time.

4.2.1 **Declaration content**

a. Date of flight.

b. Name of the pilot-in-command, and the flight crew if any.

c. Glider type, and its registration or serial number or unique NAC-assigned contest number.

d. The make, model and serial number of the FR used (as recorded in the .igc file for the flight). For any barograph or PR used, the make, model, and serial number as verified by the OO before flight.

Additional content for *distance and speed* flights

e. Way points and, for a closed course, the sequence to be flown. When any way point is

declared using a word description, abbreviation, or code with coordinates, the coordinates are definitive. When only a word description, abbreviation, or code is used to declare a way point, its coordinates must be taken from a published source designated by the NAC.

Additional content when a badge flight *written* declaration is made on paper

f. Pilot-in-command signature.

g. Official Observer signature, with date and time.

4.2.2 **Declarations from more than one FR**

When more than one FR is carried on the flight, data files from each FR must be submitted. A difference in the declaration between the FRs could be grounds for refusal to accept any claim from that flight.

4.3 FLIGHT DATA VERIFICATION

4.3.1 **Sampling rate** A data sampling rate setting must be at least once per minute.

4.3.2 **Flight continuity**

There must be evidence that the glider did not land and that no MoP was used during the soaring performance.

a. An interruption in data recorded by a barograph will not compromise proof of flight continuity provided that the OO and NAC are convinced that no critical data is missing and the evidence remains indisputable. SC3C-5.2 refers.

b. Evidence of flight continuity may also be assessed from a time plot of GPS height data.

c. The 5-hour duration badge flight does not require a barogram for flight continuity evidence if the flight is made under the continual attention of an OO.

4.3.3 **Landing data** Evidence of the actual landing must be by one or both of the following:

a. By recorded GPS position data.

b. By an OO or two independent witnesses, arriving soon after the event, who have no doubt about the landing position (see 5.3.2c).

4.4 CALCULATIONS and CALIBRATIONS

Time, position, altitude, and MoP use are flight performance data that must be recorded or measured for some or all types of flights. Any measurement or calculation inaccuracy is to be interpreted to the maximum disadvantage of the pilot. The minimum data required for each type of soaring performance is given in the record and badge application forms.

4.4.1 **Combinations of measurement methods**

Any mix of measuring methods is acceptable for any type of flight. Each method shall comply with the Code as if it were the only means of proof employed.

4.4.2 **Earth model and distance calculations**

a. The WGS84 earth model shall be used for all lat/long data that is recorded for flight analysis. For record flights, distances between two points in excess of 1000 kilometres, and in any case of dispute over a distance, the distance flown is deemed to be the length of the geodesic line joining the start point and the finish point or, if there are turn points, the sum of the geodesic lines for each leg of the course, corrected as in 1.3.7.

b. For badge flights, less accurate distance calculation methods may be used unless the exact distance is critical to the soaring performance. Annex C-1.7 refers.

4.4.3 **Limits to the loss of height**

a. For distance flights of more than 100 kilometres, where the loss of height exceeds 1000 metres, a height penalty equal to 100 times the excess over 1000 metres loss of height shall be subtracted from the length of the course to give the official distance.

b. For distance flights of 100 kilometres or less, a loss of height exceeding 1% of the length of the course will invalidate the soaring performance.

c. For speed flights, a loss of height over 1000m will invalidate the soaring performance.

d. For duration flights, a loss of height over 1000m using barographic data or 900m using GPS data will invalidate the soaring performance. Chap 4 Appendix - A7 refers.

4.4.4 **Barograph calibration time limits**

The recording barometer functions of both FRs and stand-alone barographs must be calibrated as follows:

a. PRIOR TO FLIGHT Calibration is required within 12 months prior to the flight or, for IGC-approved electronic barographs and FRs, 5 years.

b. AFTER FLIGHT Calibration is required within one month after the flight or, for IGC-approved electronic barographs and FRs, two months.

For altitude and gain of height records, both (a) AND (b) calibrations are required, and the less favourable of the two shall be used making the calculations for the record. Either (a) OR (b) is required for all other records and badges.

4.4.5 **Calibration and pressure correction**

When absolute altitude is to be determined, pressure altitudes recorded during flight must be corrected for both instrument error and non-standard atmospheric pressure. Guidance in calculating a corrected altitude is given in Annex C-12.7.

4.5 FLIGHT EVIDENCE REQUIREMENTS

4.5.1 **Time evidence**

GPS time data is used when substantiated by independent evidence confirming take-off and landing times and locations. When a stand-alone barograph is used to record altitude and relative times, pertinent time evidence must be determined by an OO based on his or her observations and reconciled with barograph data. The time at which a glider crosses the boundary of a start or finish OZ is determined by linear interpolation between the last fix before crossing and the first fix after crossing.

The tow pilot or ground launch operator may certify the time of release for a badge duration flight done with an OO's continual attention.

4.5.2 **Position evidence**

For records, and badge flights at Diamond or higher level, position data shall be recorded by a flight recorder. For Gold or Silver badge flights, position data may also be recorded by a position recorder. Position evidence shall be gathered as follows:

a. POINT OF RELEASE The point of release data shall be taken from an FR, or a PR (as above), or certified by an OO or tow pilot / ground launch operator for a straight distance flight carrying only a barograph.

b. WAY POINTS ACHIEVED GPS evidence must show indisputable proof that: the glider crossed a start or finish line, a fix was recorded either exactly on the way point coordinates or within its OZ, or a straight line drawn between two consecutive valid fixes crosses the OZ boundary.

c. FINISH ALTERNATIVES If a finish fix is claimed, its position shall be taken from FR or PR data. When the landing location is the finish point, its position shall be determined as in 4.5.5b or 4.5.6b, and if necessary, certified as in 5.3.2.

4.5.3 **Altitude evidence**

a. Up to 15,000 metres, (except for the use of PRs as defined in para A-7 of the Chapter 4 Appendix), pressure data recorded by an FR or barograph shall be used.

b. Above 15,000 metres, GPS altitude data from an FR approved for high altitude use (HAFR) shall be used. *See Annex B and the Technical Specifications for IGC FRs for HAFR procedures.*

c. For all record altitude flights, both GPS and pressure altitudes shall be recorded. The resulting profiles of the GPS and pressure altitudes must correspond to ensure that no anomaly is present in the altitude evidence.

d. Claims using altitude data from a HAFR must include evidence that there was no solar flux radiation during the flight that exceeded the high of the 96 hours preceding the flight.

Note: A source of solar data is the NOAA Space Weather Prediction Center at <www.swpc.noaa.gov/today> or <www.n3kl.org/sun>.

e. For gain of height record claims having a high point above 15,000 metres, the evidence for the low point shall also come from GPS data.

f. The altitudes at which a glider crosses a start or finish line or the boundary of a start or finish OZ are determined by linear interpolation between the altitudes at the last fix before crossing and the first fix after crossing.

g. For alternate release altitude evidence for duration flights, see 5.2.3.

4.5.4 **Means of propulsion evidence and MoP recorder procedures**

The OO must certify the means used to determine that the MoP recorder functioned correctly.

a. A MoP recorder incorporated within an FR is required for record attempts and the OO must complete Record Form D.

b. When a MoP recorder that is not incorporated within an FR is used for badge flights, the device must be installed in the aircraft out of reach of the pilot and a seal shall be applied to the MoP in such a way that forward thrust by the MoP will break the seal.

4.5.5 **Stand-alone barograph procedures**

When a stand-alone barograph is the only means of data recording or is carried to supplement position recorder data, the following procedures shall be used:

a. BEFORE FLIGHT For mechanical barographs, the OO shall make an identification mark on the barogram paper or foil. For any barograph, the OO seals the barograph and supervises its installation in the aircraft, out of reach of the pilot and free of any cable or mechanism that could alter or adversely affect accurate data recording.

b. TAKE-OFF and LANDING The OO shall ensure there is evidence of the times and locations of take-off and landing, either by witnessing these events or consulting other witnesses and/or soaring site flight logs.

c. DURING FLIGHT As soon as possible after release, the pilot should establish a low point and make a steep turn so the barogram and position data (if any) clearly indicates the release point. Any marking of a barogram during flight shall be done by remote control, not by direct access to the barograph.

d. AFTER FLIGHT For mechanical barographs, the OO shall take control of the barograph and ensure its seal is secure, and confirm that the barogram has the identification mark that was placed on it prior to take-off. The information required in 5.3.3b to 3i shall then be added to the barogram.

For electronic barographs, an OO must either supervise the transfer or printing of the barographic data while the instrument is in the glider, or supervise its removal from the glider and take charge of it until the flight data is downloaded or printed, then make note of the date and time the flight data was downloaded or printed.

e. DATA ANALYSIS An OO shall determine if the barograph-recorded altitude data confirms relevant aspects of the claimed soaring performance, considering events witnessed or verified by the OO. Where used to supplement position recorder data, its satellite derived altitude data must compare favorably overall to barograph-recorded pressure altitude data.

4.5.6 **GPS recording procedures**

FR approval is discussed in Annex B Chapter 1. Annex C-6.1 and 6.2 outline the minimum standards for NAC approval of PRs and their operation. The OO shall be familiar with the applicable terms of approval, and:

a. BEFORE FLIGHT The OO shall verify the installation, set-up, and sealing of each recorder used. When a PR is used, a paper or electronic declaration is required.

b. TAKE-OFF and LANDING An OO shall use evidence independent of the GPS recorder(s) to confirm the times and points of take-off and landing, pilot name(s), glider type and registration, and the make, model, and serial number of each GPS recorder used.

c. DURING FLIGHT As soon as possible after release, the pilot should make a steep turn so that the GPS data clearly indicate the release point and altitude. Any pilot inputs into any GPS recorder must be confined to functions not critical to the validation of the flight, such as entering a pilot event marker or changing the sampling rate in flight.

d. AFTER FLIGHT After landing, the OO shall check any seals applied to each GPS recorder before flight and perform or supervise the transfer of flight data from each device. The OO shall perform a security check on each resulting data file using the appropriate validation program. The OO shall review the flight data for completeness, and if it is to be sent to another person for complete analysis, the following shall be forwarded:

- The original data on the memory device (the first copy) storing the flight data for each GPS recording device. This must include the data file in .igc format, and the file in its original format (if different) as transferred from each device immediately after landing.
- The appropriate claim form(s), including OO's evidence that manually recorded times and exact locations correspond to the equivalent flight recorder data.

e. DATA ANALYSIS Analysis of the flight data shall be performed by a person approved by the NAC. The analyst shall ensure that the appropriate evidence is present to verify the soaring performance. For free record claims, the achieved way points shall be determined from the FR evidence and specified in the record claim. Analysis guidance is in Annex C.

CHAPTER 4 APPENDIX

The use of position recorders for Silver and Gold badge flights

A-1 General Many GPS devices can record the coordinates of their position at intervals. If this data can be downloaded in the same format as an .igc file, NACs may allow these "position recorders" (PRs) to be used to validate the horizontal position of the glider. Altitude evidence may also be used in accordance with A-7 below.

Each NAC is to approve the specific types of PRs for use within their area of responsibility and to maintain a current list of them. Guidance on PR operation and the approval process is given in Annex C-6.1 and 6.2, but NACs should consult GFAC for advice prior to beginning the approval process for a given type of PR as there may be known problems with it or it may have been found to not comply with IGC rules and procedures.

Units which have lost their approval as IGC FRs may be suitable to use as PRs if the requirements in this appendix are met.

A-2 Earth Model PRs must use the WGS84 Ellipsoid Earth Model and it must not be possible to change it during the flight.

A-3 Averaging and predicted positions Any PR that can produce estimated fixes through averaging or predicting based on past fixes is acceptable only if the estimation functions are disabled. The OO must supervise the disabling process or verify that it was completed before flight and certify that this was done.

A-4 Frequency of fixes Fix frequency must be at least once per minute.

A-5 Declaration A written declaration (either electronic or on paper) including all appropriate items listed in SC3-4.2.1 is the only acceptable form.

A-6 Downloading and verification Downloaded data must be converted as closely as possible to the .igc format. Any download and conversion program must be approved by the NAC and include a validation system that will identify any changes to the .igc file made after the initial download.

A-7 Altitude GPS altitude evidence may be used for a flight provided that a 100 metre error margin is applied to all pressure height requirements of the Code (example: the gain of height is at least 1100 metres for Silver altitude) and it can be shown that the GPS altitude figures are reliable to be used for measurement purposes. *See Annex C-2.4 and 6.2c.*

A-8 Presence of position recorder in the glider There must be proof, independent of the recorded data, that the PR was in the glider flown by the pilot claiming the soaring performance.

A-9 Before flight The OO must ensure the PR is installed, configured, or sealed in such a way that switches and buttons cannot be used in a manner that could affect the downloaded flight data or allow connection to devices that could alter the data.

A-10 Takeoff and landing The OO must ensure that there is evidence of the position and time of take-off and landing. This evidence must be independent of the data produced by the PR.

A-11 After flight As soon as possible, the OO shall check any seals applied before the flight, supervise the download of data from the PR and perform a preliminary analysis of the flight claim. Both the .igc format data file and any other data file (if applicable) from the PR shall then be sent, using NAC-specified methods, to a NAC-approved person to analyse the data.

A-12 Analysis The analysis of the data must be done in the same manner as the data from an IGC-approved FR.

Chapter 5

OFFICIAL OBSERVERS and CERTIFICATION

5.1 OFFICIAL OBSERVER AUTHORITY

5.1.1 **Official Observer appointment**
OOs are appointed by a National Airsport Control (NAC) on behalf of the FAI and IGC. Directors of competitions sanctioned by FAI or a NAC may also act as OOs for badge or record flights undertaken during a contest.

5.1.2 **Geographical area of authority**
OOs are entitled to control and certificate flights of gliders and motor gliders in the country of their own NAC, and in any other country and for glider pilots of any nationality if that country's NAC – the controlling NAC – so permits (1.0.4b refers).

5.1.3 **Official Observer duties**
As the FAI and IGC representative, the OO shall control and certificate record flights and FAI badge flights, flights in international championships and competitions sanctioned by the FAI, and other soaring performances that NACs may define within their area of authority.

5.1.4 **Certification terms**

a. CONTROL Refers to OO actions taken to ensure the integrity of evidence supporting a badge or record performance, and the required evidence gathering and evaluation functions performed in relation to a given flight.

b. VERIFICATION Refers to confirmation of the aircraft flown, the name(s) of the crew, and take-off and landing times and locations. See also 5.2.4.

c. CERTIFICATE Refers to a written statement signed ("certified") by a person who has first-hand knowledge that the statement is true.

5.1.5 **Competence**

a. OOs must be familiar with the Code and have the integrity, skill, and competence necessary to control and certify glider and motor glider flights without favour. An OO should be briefed or given training appropriate to the duties of an OO prior to being approved by a NAC. *Annex C-1.3 gives recommended practices for administering OOs.*

b. For international records, the OO must be approved for this role, in writing, by the controlling NAC. Previous satisfactory experience as an OO for FAI badges or national records should be a requirement. Where more than one OO is involved, an OO with the controlling NAC shall oversee and certify that the work of other OOs is correct.

c. The OO shall be familiar with the operation and limitations of all evidence-gathering equipment used on a given flight. See also Annex C, App 5 paragraph 1.3.

5.1.6 **Conflict of interest** Ref: <*http://www.fai.org/documents/otherdocs/code_ethics*>
All persons involved in data verification and claim approval must conform to the FAI Code of Ethics, evaluating the claim objectively according to the rules and procedures of the Code. As such, no one involved in ratifying a world record claim may have a special personal interest in the outcome of that claim, and OOs may not act for any record or badge attempt in which they have any financial interest or in which they are the pilot or passenger.

Ownership of the glider shall not be considered "financial interest". In essence, monetary or other substantial gain shall not depend on the successful certification of the claim by the OO or other individuals concerned.

5.1.7 **Violation of duty**
In case of violation of duty by an OO, the appointment of the OO shall be withdrawn. In

addition, negligent certifications or wilful misrepresentations are grounds for disciplinary action by the NAC concerned. See also 3.3.

5.2 FLIGHT CONTROL and VERIFICATION

5.2.1 **Pre-flight control actions** For each GPS recording device, an OO must perform the actions required by 4.5.6a and, if used:

a. sign a paper declaration and add the date and time (4.2 refers),

b. perform installation and operational checks of any MoP recorder not incorporated into a flight recorder and seal the MoP (4.5.4 refers),

c. perform the required actions for any stand-alone barograph (4.5.5a refers).

5.2.2 **Post-flight control actions** For each GPS recording device, an OO must perform the actions required by 4.5.6d and, if used:

a. perform the actions required by 4.5.5d for claims using a stand-alone barograph with or without MoP recorder capability; and

b. for a flight using a motor glider, perform a post-flight check of MoP sealing, and complete FAI Claim Form D or NAC equivalent (4.5.4 refers).

5.2.3 **Control of a duration flight made under an OO's continual attention**
When a duration flight does not carry a barograph but is being continually observed by an OO, this OO must witness both take-off and landing and verify release time and altitude MSL based on a tow release certificate from the tow pilot or ground launch operator for the flight (5.3.5 refers).

5.2.4 **Verification** Verification of records must be from FR evidence. For badges recorded by a barograph or GPS device, the OO certifying the claim shall verify the aircraft flown, crew name(s), and the times and locations of take-off and landing based on personal observation, supplemented if necessary by the written flight logs maintained at the take-off and landing site(s). In the latter case, the OO shall attach to the claim form legible photocopies of the pertinent flight logs.

If any required detail is not verified as above, the appropriate verification certificate is required (5.3.4 refers).

5.3 CLAIM CERTIFICATION

5.3.1 **General**
Whether part of a pre-printed claim form or provided as an attachment, any required certificate must clearly relate to the flight, contain the information required, and be signed by the appropriate person(s). Except as provided by 5.3.2e for calibration certificates, any person signing a certificate shall also provide his or her name, address and, if possible, contact phone number or e-mail address.

5.3.2 **Certificates required**

a. PILOT CERTIFICATE OF REGULATORY COMPLIANCE For all claims the pilot must certify that the soaring performance was conducted in accordance with the Code, was flown in compliance with all the glider manufacturer's and national operating limitations, and in accordance with national flight regulations (airspace use, night flight, etc.). *For records, this certification is on the IGC Record Forms A, B, and C.*

b. OO CERTIFICATE For all claims this certificate shall list applicable control actions and, for each one, the date it was performed and the signature and OO number of the OO who performed it. Certificates may come from more than one OO in a given claim.

c. UNWITNESSED LANDING When no one has witnessed the landing, this certificate must be signed by one OO or two independent witnesses who arrive soon afterward and certify the precise location of the glider, including the date and time of that observation.

d. START FROM RELEASE This certificate shall indicate the location of release from aero-tow or ground launch and be signed by the OO and the tow pilot / ground launch operator

for the flight. For a duration badge flight done under an OO's continual attention, the certificate shall include release time and altitude MSL, and must be signed by the tow pilot or ground launch operator for the flight.

e. CALIBRATION CERTIFICATE Instrument errors shall be listed on a current calibration certificate that includes the laboratory's logo or name. This certificate shall include:

- type, serial number, and altitude range of barograph
- date of calibration
- calibration trace, graph or table
- date, name, and signature of calibration laboratory official

5.3.3 **Flight barogram**

Except as permitted for FRs and electronic barographs (see 4.5.5 and 4.5.6), a barogram shall have the following information clearly registered on it:

a. identification mark of OO before take-off
b. for altitude and gain of height records, ground level pressure (QFE) at time of take-off
c. date of flight
d. name of pilot
e. type, serial number, and altitude range of barograph
f. type and registration of glider
g. altitude of release (or of stopping the MoP for motor gliders)
h. proof of no intermediate landing
i. date and signature of OO after landing

Additionally, if the barograph is also the MoP recorder:

j. means of propulsion was stopped prior to leaving the start point
k. means of propulsion was not used between the start point and the finish point

5.3.4 **Verification certificates**

For each of the following flight details not verified as provided by 5.2.4, the corresponding certificate is required:

a. PHYSICAL DATA This certificate shall identify the glider and each person aboard. It must be signed by one OO who witnessed the take-off or landing or by two independent witnesses present at take-off or landing.

b. TAKE-OFF This certificate shall list the time and location of take-off and must be signed by an OO or an air traffic controller who witnessed the take-off.

c. LANDING This certificate must list the time and location of landing and be signed by an OO or an air traffic controller who witnessed the landing. In the absence of any such witness, the certificate listed in 5.3.2c is required.

5.3.5 **Claim certification**

Individual certificates pertaining to portions of flight evidence may be signed by the OO involved. The OO(s) who certify a claim must be satisfied the flight meets the soaring performance standards and the flight was done in compliance with SC3 rules. The overall claim shall be certified by the OO who completes and verifies the information in the applicable FAI record claim form(s) or NAC-specified badge claim form(s). At a minimum, an OO shall:

a. review and evaluate any recorded flight data and the pre-flight declaration.

b. confirm that all applicable OO control actions were performed (5.2.1 through 5.2.3 refer)

c. verify the aircraft flown, each occupant's name, and the times and locations of take-off and landing. Countersign photocopied flight logs if applicable (5.2.4 refers).

d. obtain required certificates and countersign those that are complete and consistent with the claim (5.3.2 through 5.3.4 refer).

5.4 FAI RECORD CLAIM FORMS

For claims submitted to the FAI, the current IGC-approved FAI Official Claim Forms on the next page must be used. For national records, the NAC may issue its own forms similar to the FAI versions.

Designation	Record type	Remarks
Form A	Absolute Altitude or Gain of Height	Open class records only
Form B	Distance	
Form C	Speed	
Form D	Motor Gliders	Form D is additional to other forms if appropriate to the claim.
Form E	Completed by all NACs involved.	Must be included with claim file.

The FAI forms are available from the IGC web site <http://www.fai.org/gliding>, and in hard copy from the FAI office and NACs.

5.5 SUBMISSION of CLAIMS

OO certification of take-off and landing evidence, MoP status, witness statements, and any other data or auxiliary material required by a NAC to support the mandatory evidence (see examples in Annex B, Appendix 1) for a soaring performance shall be forwarded to the NAC using the media and methods the NAC specifies.

5.5.1 If the soaring performance was recorded by an FR, send in the original data (the first copy) in the format produced by the FR during the download. If conversion to .igc format is done after the download, *both* the original and the .igc files must be submitted. This process must be performed for all FRs carried on the flight. For all record claims, a copy of the .igc file along with a record notification is to be sent to the FAI within seven days (3.4.1 refers).

5.5.2 If a badge performance was recorded by a stand-alone barograph, send in the original barogram and, if a position recorder was used, the original data file (the first copy) in the format produced by the position recorder. Where any conversion to .igc format is done during download or afterward, *both* the original and the .igc files must be submitted.

Chapter 6

GLIDER CLASSES and INTERNATIONAL COMPETITIONS

6.0 GENERAL

This chapter gives the class structure and some general rules for FAI World Gliding Championships and other international competitions. If a claim is made for a badge or a record during a competition, the requirements of the Code must be fulfilled regardless of the regulations of that competition.

Detailed rules for World Championships and other international competitions are given in Annex A to this code (SC3A) and also in the General Section of the FAI Sporting Code. Where "competition" shows in any of these rules, the rule applies to both World Championships and other international competitions.

6.1 CLASS CONFORMITY

6.1.1 **Record flights**

An OO shall certify that the glider used for a record flight complies with the requirements for the class rules of the record classification involved and shall certify any measurement and checking required.

6.1.2 **Competitions**

Gliders shall be presented to the competition organiser as prescribed in the local regulations in order to be checked and measured for compliance with class rules.

6.1.3 **Measurement of wing span**

Wing span, for the purpose of conformity with class rules, is the maximum distance between the two planes tangent to the wing tips and parallel to the glider plane of symmetry and the weight of each wing supported to allow the wing to match its unloaded shape.

The unloaded shape depends on the design of the glider, but will generally mean that the trailing edge is straight along the length of the wing.

6.1.4 **Mass limits**

The competition rules may limit the maximum mass of a glider in any class. Any limit must be stated in the official bid and must be approved by the IGC.

6.1.5 **Change of components**

Except where allowed in the Championship rules, a glider shall use the same set of wings or wing components, fuselage and tail unit for the duration of the competition.

6.1.6 **Airworthiness certificates**

A glider must hold a valid Certificate of Airworthiness or Permit to Fly that does not exclude competition flight and comply with the conditions of its airworthiness documents.

6.2 HANDICAPPING

The purpose of handicapping shall be to equalise the performance of competing gliders as far as possible. The handicap values used shall be directly proportional to the expected cross-country speeds of gliders in typical soaring conditions for the competition concerned.

If handicapping is to be used, it shall be applied directly to the speed or distance achieved: for finishers, to the speed only, for non-finishers, to the distance only. Competitors completing the task shall not be given less than full distance points, and competitors not completing the task shall not be given more than full distance points. Any list of handicaps proposed for a competition must be approved by the IGC.

6.3 TIME PERIOD for CLASS CHANGES

The minimum period between the announcement and implementation of a new class or major alteration to the rules of an existing class shall not normally be less than four years. Minor alterations not requiring design changes shall normally have two years notice. The IGC may reduce the period of notice for special reasons.

6.4 WORLD CHAMPIONSHIPS

World Gliding Championships are organised in the classes defined below. Women's Championships and Junior Championships may also be organised at the World Championship level. Motor gliders are integrated into the other championship classes (except the ~~13.5m and~~ World Class) under championship rules for motor gliders (Annex A refers).

6.5 COMPETITION CLASSES

6.5.1 **Open Class** No limitations.

6.5.2 **20 metre multiplace**

a. ENTRY The class consists of gliders having a crew of two persons. The crew must represent the same NAC and have a Sporting Licence issued by that NAC. The winning crew shall jointly hold the title of Champion.

b. WINGS The span must not exceed 20,000 mm.

c. BALLAST Disposable ballast is permitted.

d. SCORING Except in World championships, scoring formulas may include handicap factors. If handicaps are to be used, the gliders must have a handicap factor within the range agreed for the competition.

6.5.3 **18 metre Class** The only limitation is a maximum span of 18,000 mm.

6.5.4 **15 metre Class** The only limitation is a maximum span of 15,000 mm.

6.5.5 **Standard Class**

a. WINGS The span must not exceed 15,000 mm. Any method of changing the wing profile other than by normal use of the ailerons is prohibited. Lift increasing devices are prohibited, even if unusable.

b. AIR BRAKES The glider must be fitted with air brakes that cannot be used to increase performance. Drag parachutes are prohibited.

c. WHEEL The undercarriage may be fixed or retractable. The main landing wheel shall be at least 300 mm in diameter and 100 mm in width.

d. BALLAST Disposable ballast is permitted.

6.5.6 **13.5 metre Class**

a. WINGS The span must not exceed 13,500 mm.

b. BALLAST Disposable ballast is permitted.

c. WING LOADING ~~Wing loading shall not exceed 35 kg/m^2~~. *For International Championships, the wing loading is limited. See Annex A 4.2.1 f.*

Note: 13.5 metre Class championships will begin in 2015.

6.5.7 **World Class**

The World Class glider is the PW-5. No modifications are permitted except as approved by the FAI and circulated in writing to all NACs on behalf of the IGC.

a. ALTERATION TO AIRFLOW Any alteration affecting airflow around the glider is prohibited. This includes, but is not limited to, the use of turbulation devices, fairings, and special surface treatment. The only exceptions are:

- a yaw string and a total energy probe,
- adhesive tape to seal gaps between wings, fuselage and tail. Sealing between moveable control surfaces and the airframe is not permitted.

b. ELECTRICAL DEVICES Electrical and electronic devices are allowed, including instruments and navigational aids.

c. BALLAST Disposable ballast is not permitted. In a World Class competition, a flight mass shall be specified between the maximum gross mass and the lowest take-off mass attainable by the heaviest entrant. To attain the specified mass, each glider shall incorporate a fixed ballast system approved by the IGC, which may include tail ballast.

d. CENTRE OF GRAVITY CONTROL Any device capable of altering the centre of gravity location of the glider during flight is prohibited.

Note: World Class world championships will cease after 1 October 2014

6.5.8 **Club Class**

The purpose of the Club Class is to preserve the value of older high performance gliders, to provide inexpensive but high quality international championships, and to enable pilots who do not have access to gliders of the highest standard of performance to take part in contests at the highest levels.

a. ENTRY The only limitation on entry of a glider into a Club Class competition is that it is within the agreed range of handicap factors for the competition.

b. BALLAST Disposable ballast is not permitted.

c. SCORING Championship scoring formulas shall include handicap factors.

~~d. WING LOADING Wing loading shall not exceed 38 kg/m^2.~~

6.6 INTERNATIONAL COMPETITIONS

International competitions may be held in the World Championship classes and in other classes specifically approved by the IGC. Certain championships have a restricted entry:

a. WOMEN'S CHAMPIONSHIPS Championships in one or more of the approved classes that are open to female flight crew only.

b. JUNIOR CHAMPIONSHIPS Championships in one or more of the approved classes that are open to pilots whose 25th birthday occurs in the calendar year (1 January to 31 December) that includes the date of the start of the championships, or occurs later.

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