FÉDÉRATION AÉRONAUTIQUE INTERNATIONALE

SPORTING CODE

SECTION 7
CLASS O

HANG GLIDERS and PARAGLIDERS
CLASSES I / II / III / IV / V

Draft 4: 6-12 2002

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1 INTRODUCTION

1.1 Description

1.2 Conjunction

Section 7 is to be used in conjunction with the General Section (GS) of the Sporting Code. In the event of ambiguity the General Section takes precedence.

1.3 General Section

1.4 General requirements for hang gliders

1.4.1 Definitions of hang gliders, as per General section.

A glider capable of being carried, foot launched and landed solely by the use of the pilot's legs.

1.4.1.1 Hang glider classes

Class 1: Hang gliders having a rigid primary structure with pilot weight-shift as the sole method of control, and which are able to demonstrate consistent ability to safely take-off and land in nil-wind conditions. Subsidiary controls affecting trim and/or drag are permitted, but only if they operate symmetrically.

Class 2: Hang gliders having a rigid primary structure with movable aerodynamic surfaces as the primary method of control, and which are able to demonstrate consistent ability to safely take-off and land in nil-wind conditions.

Class 3: Hang gliders having no rigid primary structure (paragliders), and which are able to demonstrate consistent ability to safely take-off and land in nil-wind conditions.
Note: Paraglider Line Strength Requirements are set out in chapter 17.

Class 4: Hang gliders that are unable to demonstrate consistent ability to safely take-off and/or land in nil-wind conditions, but otherwise are capable of being launched and landed by the use of the pilots legs.

Class 5: Hang gliders having a rigid primary structure with movable aerodynamic surfaces as the primary method of control in the role axis and which are able to demonstrate consistent ability to safely take-off and land in nil-wind conditions. No pilot fairings are permitted. No pilot surrounding structures are permitted, apart from a harness and control frame.

Note: Minimum Hang Gliding Safety Standards are outlined in chapter 22.
Note: Pilot fairings are defined in chapter 20.7.
Note: For the purposes of demonstration, "nil-wind" shall mean a headwind of less than 1 m/s (3.6 km/h; 2.2 mph).

1.4.1.2 In Category 1 events, a national team must fill up to full team quota in Class 5 before it can enter a Class 5 design glider in Class 2.

1.4.1.3 For record purposes there are five classes: 1,2,3, 4 and 5. Class 5 gliders may set records in both Class 2 and Class 5.

1.5 Flight Definitions

The word "hang glider" covers all classes. These definitions take precedence over the ones given in the General Section.

1.5.1 A flight

A flight by a hang glider starting at take-off (1.5.7.1) and ending with the landing (1.5.12.1) .

1.5.2 Free flight

That part of a flight, in which the hang glider is not towed, carried or assisted by another aircraft or separate external or jettisonable power source.

1.5.3 Flight performance

The achievement attained during free flight.

1.5.4 Uncompleted flight

1.5.5 Types of flight

1.5.6 Courses

1.5.7 Start of a flight

1.5.7.1 Launch/ Take-off:
The point and/or time at which all parts of the hang glider or its crew cease to be in contact with or connected to the ground or water.

1.5.7.2 Take-off place:
The point from which the take-off is made. If operating from an airfield, the point may be taken as the centre of the airfield.

1.5.7.3 Start Point/Departure point:
The take-off place; or the point of release of tow; or the crossing of a start line; or a ground feature photographed from the correct photo sector. In Category 1 competitions flight distance will be measured from the take-off point.

1.5.7.4 Start time:
The time of the hang glider at the departure point or the time of crossing the start line. In Category 1 competitions this will be specified in the Local Regulations.

1.5.7.5 Start altitude:
The altitude of the hang glider above sea level at the departure point.

1.5.7.6 Point of Release.
The place vertically below the hang glider when it releases from a tow.

1.5.7.7 Start line:
A gateway of a designated width and height, the base being specified on the surface.

1.5.7.8 Ground Signal:
A ground signal may be used to indicate the start of a task or section of a task. A ground signal may be a departure point or a control point.

1.5.7.9 Types of start:
- Flying Start. The hang glider is in free flight when crossing the start line or departure point
- Standing Start. A start by a stationary hang glider timed from the giving of a "go" signal.

1.5.7.10 Start Sector:
A designated sector, marked either by physical features on the ground, or a specified shape and size which is oriented around a physical feature on the ground, or a specified shape and size which is oriented around GPS co-ordinates (or a set of GPS co-ordinates). The local regulations will detail the type, shape and size of start sectors that will be used.

1.5.8 Turnpoint
A clearly defined feature on the surface, or GPS coordinates, which are precisely specified before take-off.

1.5.8.1 Rounding the turn point:
A turn point is rounded when the entire hang glider is observed to pass outside the vertical projection of the turn point feature or when it is proved that the designated sector has been entered.

1.5.9 Control point
A control point is a point, which the hang glider is required to over-fly or to land at during a flight along a course.

1.5.10 Designated sequence
The order in which the turn or control points shall be flown.

1.5.11 Position check point
A position checkpoint is a point, which the pilot proves to have over-flown during a flight of which the route has not been declared in advance.

1.5.12 Finish of flight

1.5.12.1 The Landing

The point and/or time at which any part of the hang glider or its crew

- First touches the ground or, (if specified in local regulations)
- Comes to rest after landing.

1.5.12.2 Landing place:

Either the centre of the airfield or the precise place at which the landing is made.

1.5.12.3 Finish point:

Either the landing place or the crossing of a finish line.

1.5.12.4 Finish line:

A gateway of designated width and height with the base indicated on the surface.

1.5.12.5 Crossing the Finish Line

The finish line is considered to be crossed when the nose of the hang glider (Classes 1,2,4 & 5) or the leading foot of the pilot (Class 3, Paragliders) cuts the finish line before a landing is made. Refer to 23.2 for crossing goal lines in Soaring Competition,

1.5.12.6 Finish time:

Either the time at which the hang glider crosses the finish line or the time at which it lands.

1.5.12.7 Target landing:

A landing in which the distance of the designated part of a person or of the hang glider from a target centre is precisely measured.

1.5.12.8 Another method

Another method as described in this manual.

2 FAI PROFICIENCY BADGES

3 WORLD AND NATIONAL RECORDS

3.1 General rules

See Sporting Code General Section, reference chapter 6.

3.2 Classification of records

3.2.1 General category

The best performance achieved by a solo pilot.

3.2.2 Multiplace category

For the best performance in this category, the age of each occupant other than the designated pilot-in-charge shall not be less than 14 years.

3.2.3 Feminine category

The best performance achieved by a woman or a female crew.

3.2.4 Pilot in command

Only the pilot in command need hold an FAI Sporting Licence.

3.3 Classes of hang glider

Refer to item 1.4

3.4 Types of records

In all classes the previous record to be exceeded by:

- Straight distance 1%
- Straight distance to a declared goal 1%
- Out-and-return distance 1%

- Distance around a triangular course 1%
- Speed around triangular courses of 25, 50, 100, 150, 200 and 300 km 1%
- Speed over out-and-return courses of 100, 200 and 300 km 1%
- Gain of height 3%

3.5 Special requirements

3.5.1 Advance notice.

No advance notice or permit is required for a record attempt provided that the necessary official observers are present and proper arrangements have been made to control the attempt. Only a single declaration may be made for a record attempt, except that a record attempt for altitude may be included.

3.5.2 Exceptions.

Except as stated in 3.5.2.1, a barograph or approved flight recorder shall be used on all record attempts. It must show that no intermediate landing was made and generally substantiate the flight. For record attempts, flight data recorders that comply with the IGC (sporting code section 3) standards may be used.

3.5.2.1 In FAI First Category events a barograph is not required for record and badge flights made during closed circuit tasks, which contribute to the final scores, provided the organisers agree to provide the necessary flight documentation.

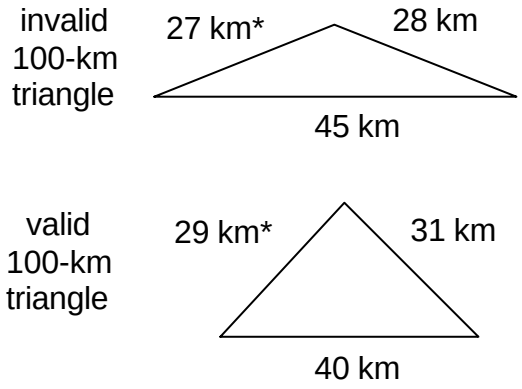
3.5.3 Breaking records

Any record(s) may be broken on any flight for which the requirements are met, except that:

- On a speed flight over a triangular or out-and-return course only the record distance immediately less than the distance flown will count for a record (e.g. a flight of 207 km may break only the 200 km record).
- On completion of a flight to goal, it is permitted to continue on for straight Distance, the distance being measured from the Departure Point to Landing.

3.5.4 Triangle courses

For a record no side of a triangular course may have a length of less than 28% of the total distance of the course.



3.5.5 Remote take-off and/or landing point

A pilot may take-off from a point remote from the departure point and/or land at a point remote from the finish point of the flight provided that the departure and finish points are declared and the pilot is properly controlled over-flying these points. Any distance flown before the departure point or after the finish point is not counted towards the course distance.

3.5.6 Altitude differential in record and badge flights

The loss of height permitted between the start altitude and the finish point, regardless of method of launch, is limited as follows:

3.5.6.1 Speed and Distance flights

Speed and/or Distance flights up to and including 100 km. The loss of height must not exceed 2% of the distance flown. No claims will be accepted for flights that do not satisfy this requirement.

3.5.6.2 Speed and Distance

Speed and distance flights exceeding 100km: no time or distance penalty is applied for height differential. Where tow-launch or powered launch of any type is used, release/engine off height must not exceed 1,000m above the ground level of the place of launch.

4 TABLE OF CERTIFICATES AND PROOFS

5 CIVL RECOGNISED 1ST CATEGORY EVENTS

5.1 General rules

The general rules for First Category events are contained in the General Section and Section 7 Sporting Codes. Local Regulations are rules for a particular event and may not conflict with Section 7, shall be approved by CIVL and not be subsequently changed.

The rules for Second Category events shall be based as far as possible on those for First Category events and shall not conflict with them in principle.

First Category events are World Championships, Continental Championships and World Air Games

5.2 World and Continental championships

The purpose of the championships is to provide good and satisfying contest flying in order to determine the world or continental champion in each class, and to reinforce friendship among pilots of all nations.

Class 1, 2, 4 and 5 Continental Championships must allow at least the top 50 pilots of the world ranking system into the competition. Except that no nation can enter more pilots than the normal team size

5.3 Authority and bids

A world or continental championship may be organised only by a NAC accepted by CIVL as competent to run the event. To be eligible, the NAC making the bid shall, as a minimum, have held a national championship or FAI Category 2 competition with a minimum entry of 50 on the proposed site(s) within the last four years before the bid is received. Observers acceptable to CIVL shall either have attended such an event or will be invited to do so before CIVL awards the Championship.

A preliminary bid must be received by CIVL three years before the proposed event. The detailed bid is then presented to CIVL two years before it. Even in the case of previously 'un-awarded' championships, there must be at least a year between the bid and the event.

As soon as possible after CIVL awards a championship, the organisers must send invitations to participate, with response forms, to all NAC's.

5.4 General organization

5.4.1 Championship flights

Shall be controlled in accordance with the regulations contained in the Sporting Code (General Section and Section 7) and the published local regulations for the event, using Local Regulations master document (Chapter 15).

5.4.2 The total period

Of the championships shall not exceed 14 days including the opening and the closing ceremonies.

In each Class, for world championships a minimum of 4 countries with a total of 8 competitors available to fly during the championship is required for the title of Champion to be awarded; for continental championships, a minimum of 3 countries with a total of 8 competitors is required.

5.4.3 Official practice period

Of not less than two and not more than five days immediately preceding the opening of the championships shall be made available to all competitors. On at least one day a set task shall be flown under competition conditions except that the scores shall not be counted.

5.4.4 Title of World or Continental Champion.

5.4.4.1 Minimum score

Shall be awarded only if the sum of the daily winners scores is equal to, or more than 1500 points, as determined by the GAP scoring formulas.

5.4.4.2 Extension of flying

If there is to be a cut in the number of competitors during the event, refer to chapter 8. In the event of continued bad weather a task may be set on the day reserved for the prize-giving, in order to validate the championship, but the total championship period may not be extended.

5.4.4.3 Task Validity

To count as a championship task all competitors in the class shall have been given the opportunity of having at least one competition flight in time to carry out the task.

5.4.5 Protests

Shall be dealt with by a nominated international jury of three of different nationalities appointed by CIVL. The time limit within which a protest must be made and the amount of the protest fee shall be stated in the Local Regulations. If the protest is upheld the fee is returned. The protest fee may not be larger than $50 US

5.4.6 The Organisers

Are responsible for travel, accommodation, meals and refreshments for the International Jury and Stewards.

5.4.7 The winner

Shall be the pilot gaining the highest total points in his class. The Team winner shall be the team as defined in the appropriate scoring rules gaining the highest total points in the class.

5.4.8 The FAI Gold, Silver and Bronze medals

Shall be awarded to the pilots placed first, second and third in each class, with FAI Diplomas for those placed fourth to tenth. FAI medals will also be awarded to the National Teams placed first, second and third, and if CIVL decides, smaller FAI medals may be awarded to all members of such teams.

The Organisers may award further trophies and/or prizes.

5.5 Local regulations

5.5.1 The local regulations

These are the rules for a specific event prepared by the organisers for submission to and approval by CIVL. They must use the format in chapter 15 and be sent to the President of CIVL at least eight months before the event. Any version of the Local Regulations published by the organisers before approval by CIVL must display a clear and prominent statement to that effect. The entry application form and the proposed entry fee stating what is included in the fee shall be sent to CIVL at the same time. As a minimum the following should be included in the fee:

- One aeronautical chart of an adequate scale which must clearly indicate ALL take offs, landing fields, necessary turn points, restricted airspace and restricted areas. The chart must have a clearly visible grid that matches the GPS co-ordinates used for the competition
- When photographic evidence is required, one film for each pilot on each flying day
- Contest numbers, identity badges and all competition papers

For the minimum possible additional fee to pilots, organizers shall provide:

- Transport of gliders and pilots to and from the take-off site
- Retrieval from out landings along stated routes
- (Optionally) packed lunches or restaurant coupons on each flying day.

The entry application forms together with the approved local regulations and other information useful to competitors shall be sent out from FAI to all FAI members at least five months before the event. The organisers may additionally send this documentation drect to FAI member associations. They may also supply competitors with supplementary information on arrival at the championship site but the CIVL Bureau must have approved any matter intended to have the force of a competition rule as a minimum.

5.5.2 Failure to follow the time schedule

Failure to follow the time schedule or procedures may mean non-acceptance of the event.

5.5.3 Once competition flying has started

The published rules and regulations, including supplementary regulations, may not be altered once the competition has officially started. Any additional requirements within the rules needed during the event shall not be applied retrospectively. The CIVL Steward must approve any further changes to the Local Regulations and such changes must be approved by a majority of the team leaders; only minor matters may be so approved

5.6 Responsibilities of the organiser and the director

5.6.1 The NAC

The NAC Organising the championships shall appoint a Competition Director acceptable to CIVL not less than six months before the event. The CIVL Bureau must approve any change of Director. The Director shall take overall operational responsibility for the event including the programme of tasks to be flown. He is also responsible for:

- Publishing a final entry list by the start of briefing on the first flying day.
- Issuing the daily results with minimum delay.
- Reporting the full results, including details of protests or serious problems encountered, to his NAC with copies to FAI and CIVL.

5.6.2 The Competition Organiser

After the pre-competition the organisers must institute the changes requested by the steward unless the organisers present a written document explaining why these changes are undesirable. The final agreement between the organiser and the CIVL should include a requirement for a certain minimum number of competition staff personnel. The organisers must implement any safety recommendations of the CIVL experts.

At the Plenary prior to the competition, the Bureau will discuss the requirements with the competition organiser.
If the competition organiser does not implement the requirements, the Jury President may suspend the competition until such a time that the requirements are satisfied.

5.6.2.1 Pilot Entry

The Competition Organiser must follow 5.11.7.2 “Competition Organisers Responsibilities” with regard to pilot entry criteria.

5.6.2.2 Competition organiser’s responsibilities - international jury and stewards

The Competition Organiser is responsible for travel, accommodation, meals and refreshments for the international jury and steward(s). The minimum standards are:

- An individual room in the equivalent of 2 star hotel, with, when available, air conditioning should the temperatures be above 30 ^{o}
- Suitable dedicated transport for the Jury and Steward(s) must be provided. This transportation will consist of two vehicles in proper working order unless the Steward of the Pre-competition deems otherwise.
- A suitable sum for out-of-pocket expenses must be allocated. The amount, which would be reasonable, will be agreed between the Steward of the Pre-competition and the Competition Organiser.

5.6.3 Task Advisory Committee (TAC)

This shall be a small committee, which will include at least two elected pilots and a FAI Steward. Task setting and selection remains the ultimate responsibility of the Competition Director, but a task will not be flown without prior reference to the TAC.

5.6.4 Safety Committee

A Safety Committee must be formed. The Safety Committee’s duty is to monitor the flying operations and report to the Competition Director when conditions become unsafe either on launch or on course. No person may be a member of both the Safety Committee and the TAC.

The Competition Director is responsible for determining safe or unsafe flying conditions, while the Safety Committee serves as a check and balance for safety considerations. The ultimate responsibility for a pilot’s safety lies with the decisions of the pilot himself and is not guaranteed by the actions or decisions of the Competition Director or the Safety Committee.

5.6.5 Overcrowding.

The competition organisers must avoid dangerous overcrowding in the air. As a guide, tasks must be organised in a way that groups of 100 pilots or more would not be together in the air. If the competition organiser wishes to exceed this limit, they must substantiate the reasons why this will be safe to the CIVL plenary. The details shall be covered in Local Regulations

5.6.6 Pre-flyers

Experienced pre-flyers must be available. Further details are in chapter 7

5.6.7 Emergency medical provisions

An English speaking emergency doctor or medical technician with proper equipment must be available at take off and at a strategic location during the task. A helicopter with rescue equipment must be available. The normal expected response time has to be announced in the bid and in the local regulations.

5.6.8 Championships for more than one class

May be flown simultaneously, but they remain separate championships. Where they are flown from the same site, operations may be conducted under the charge of a single Director. However, if the classes fly from separate sites, each site must have its own Director or Deputy Director

5.6.9 Competition Preparations

To avoid pilots travelling to Championships which may have their validity refused because of lack of preparation of the competition facilities, the CIVL will publish details regarding the competition preparations on the CIVL web site.

5.7 Programme and facilities

5.7.1 Provision of information

The organisers shall provide all facilities necessary for the satisfactory operation of the championships and circulate the following information, as appropriate, as far in advance as possible:

- Programme of the championships with dates and times
- Names of the Competition Director, key officials and stewards
- General operational information, including meteorological, medical and safety arrangements, repair facilities and communication information
- Meteorological facilities including daily forecasts with synoptic charts, and satellite presentation
- Information on likely tasks
- Airspace restrictions and any hazardous considerations
- Accommodation and food arrangements, including facilities for press and visitors
- Plans of airfields or sites to be used, showing flying layout and location of entrances and administrative and domestic buildings, car and trailer parks
- Full list of documents and equipment to be provided by competitors
- A provisional entry list on request
- Details of extra language or interpreting facilities

5.7.2 Ceremonies

The programme for the opening ceremony shall be given in writing to team leaders on arrival. The programme for the closing ceremony and prize giving shall also be published, in writing, at least four days in advance of the ceremony.

5.8 Stewards and Jury

5.8.1 Powers and description

These are detailed in the general section

5.8.2 Appointment of Stewards.

The CIVL shall appoint one or more stewards in consultation with the event organiser according to the needs of the championship. If an entry of more than 100 is expected, at least two stewards are required. Stewards shall be of different nationalities, and not that of the organiser unless specifically authorised by the CIVL Bureau. However, in the event of the last-minute absence of an appointed steward, a replacement of any nationality, and acceptable to the President of the Jury, may be invited. Stewards must be able to speak English, and have extensive experience of international hang gliding, paragliding or other FAI competitions. At least one steward should, if possible, be able to speak the language of the organisers. A minimum of one steward shall be present at each site during competition operations.

5.8.3 Appointment of Jury

CIVL shall appoint an international jury of three different nationalities. No member of the jury may belong to the host country unless specifically authorised by the CIVL Bureau.

5.8.4 Authority of Stewards.

The steward cannot override the decisions of the championship director, but the steward should point out to the championship director that his/her actions may fail under a protest.

5.8.5 Authority to Stop Event.

The steward must report to the jury president if rules are not being applied. The Jury President can temporarily stop the event according to the rules of the General Section

5.9 National entry

5.9.1 The organisers

Shall state in the Local Regulations the maximum number of hang gliders, which may be entered by a NAC, the maximum number of each sex a NAC may enter in each class (if required), and the maximum number of pilots constituting a national team. After the opening of the launch window on the first scheduled competition day no change of pilot may be made.

5.9.2 A change of a competitor

From one class to another is not permitted after the closing date stated on the Entry Form unless the entry is restricted, or a particular class in the championship is cancelled.

5.9.3 Women.

Where there is no separate championship for women, the team size is X + 2 except for Class 3 World Championships where the minimum team size is 2 + 1 as per 22.3.2

5.9.4 Each NAC

Shall select it's own team leader, competitors and crews, provided that they qualify under these rules. Not more than one pilot and two crew members are permitted for each competing hang glider.

5.9.5 The team leader

May be a competitor or crew but preferably should be additional to them. If a national team has pilots flying from more than one site, the Team Leader may nominate a deputy for such sites.

5.10 Team leader responsibilities

The Team Leader is the liaison between the organisers and his team and is responsible for the proper conduct of his team members, for ensuring that they do not fly if ill or suffering from any disability which might endanger others and that they understand the rules.

The team leader has the authority to remove any member of his team from an event.

5.11 Pilot qualifications

Qualification criteria for all pilots wishing to compete in a Category 1 competition are:

- If the competitor's country issues pilot licences for hang gliding or paragliding, the pilot must hold a valid licence.
- Each competitor shall hold a valid FAI sporting licence issued by his own NAC. Competitors from prospective FAI member countries may use a licence issued by the FAI Secretary General.

5.11.1 Additional requirements (all except PLA events)

A pilot has to have either:

- Competed in a Category 1 event after 1st January 2000 (excluding Womens Worlds from 1 January 2003),
- Or placed in the top 2/3 of pilots in a Category 2 event during the 3 years prior to the Category 1 Championships.

5.11.2 For Class 3 (excluding PLA events)

Additionally , a pilot has to have either:

- Qualified in the top 2/3 of a PWC event, or
- Flown 100 km.

5.11.3 Other Criteria

Other qualifying criteria may be specified by CIVL and included in the approved local rules.

5.11.4 Qualification after gaining an exemption

Notwithstanding the above, when a pilot has competed in a Category 1 event after gaining an exemption from the specified entry qualifications that pilot shall not qualify for further Category 1 events unless he/she has placed in the top 2/3 of the event for which the exemption was granted.

5.11.5 Qualification by class

Where a pilot seeks qualification in a hang gliding event of any class, these qualification criteria must have been fulfilled in a hang glider. Similarly, where qualification is sought for a paragliding event, these qualification criteria must have been met in a paraglider.

5.11.6 Qualification Date

Pilot qualifications will be finalised no later than 60 days prior to the start of the competition.

IT is the pilot's responsibility to make sure he has qualified

5.11.7 Procedure for checking

Qualification will be checked by three parties to avoid unnecessary travel, expenses and disappointment in the event that a pilot's entry is rejected due to not meeting the qualification criteria

- The NAC or National Association/Federation before selecting their team.
- The competition organiser.
- The pilot.

5.11.7.1 Check the current Category 1 qualification list available on the CIVL website
All pilots who appear on this list will have the necessary competition qualifications. Qualification criteria vary with different disciplines, so check the appropriate rules in 5.11 to 5.11.6 (above)

5.11.7.2 Competition organisers' responsibilities
To ensure there is a signed declaration on the entry form that each pilot meets the appropriate qualification criteria.
To have available at registration the current list of qualified pilots downloaded from the CIVL website.
To notify NACs of any pilots who do not appear to meet the qualification criteria.

If a pilot does not meet the qualification criteria then, his/her entry cannot be accepted

5.12 Exceptions

5.12.1 Applications

For any exceptions, applications must be made by the pilot's NAC, with supporting evidence of the pilot's international competition history.

5.12.2 Deadlines

Applications for exceptions for entry into hang gliding events must be received by the CIVL public relations coordinator 10 days prior to the day deadline for finalisation of pilot entry.

5.12.3 Guideline for approval

Exemptions will not normally be granted in Class 1 (except for Womens Worlds) or in Class 3. Exemptions in other classes will not normally be granted unless there is clear evidence of a lack of opportunity to qualify.

5.13 Hang gliders and associated equipment

5.13.1 Hang gliders and other equipment

All aircraft and ancillary equipment which is provided by the competitors, must be of a performance and standard suitable for the event.
Refer to chapter 22 Hang Glider Safety Standards

5.13.2 Competing gliders

5.13.2.1 Airworthiness
Each glider shall be of sufficient performance and standard of airworthiness to meet the demands of international championships. This could be demonstrated by a valid certificate or statement of airworthiness provided by the NAC entering the glider.

5.13.2.2 Class 3 (Paragliders)
For Class 3 it must be based on a paraglider certification or a prototype certification from a CIVL-recognised test organization. A prototype certificate requires a load test and a declaration of line specifications signed by the manufacturer and the testing body. See chapter 17 "Paragliding Line Certificate". The organisers have the right to refuse any glider not of acceptable standard or configuration.

5.13.2.3 Configuration

A Glider showing a certification certificate produced by a CIVL recognised testing body, cannot be changed in any way in its configuration. A glider that has been changed in its configuration even slightly in comparison with the tested model or a glider that has not been tested is considered as a prototype and must comply with the following requirements:

5.13.2.4 Glider identification and documentation

Each glider must have a serial number for identification and the pilot must produce the following documents:

- The manufacturer's agreement for a nominated pilot to fly the prototype.
- For a Paraglider a prototype certification from a CIVL recognised test body, which requires a load test and a declaration of line specifications signed by the manufacturer and the testing body. See chapter 17 " Paragliding line Certificate "
- For a Paraglider, a manufacturer certificate guaranteeing that the prototype meets a standard that is recognised by CIVL.
- For hang gliders see Safety standards requirements in chapter 22.

5.13.3 A glider shall fly throughout the championships

As a single structural entity using the same standard of components used on the first day. Concessions to this rule are made to cover the case of essential repairs (see 5.19.4. Damage to a glider).

5.13.4 Acceptance check.

All hang gliders must be made available to the organisers during the period of registration, for an acceptance check, in the configuration in which they will be flown. After the opening of the launch window on the first scheduled competition day no changes of hang glider may be made (see 5.19.4.).

5.13.5 Airworthiness checks.

At any time during the championships the organisers have the right to inspect any competing glider and, if necessary, ground it for safety reasons.

5.14 Insurance

Documentary proof of insurance as specified by the organiser on the entry form or in the local regulations shall be made available to the organisers before starting to fly from the competition site.

5.15 Contest numbers

The organisers shall allocate numbers or letters to each competing glider, which shall normally be displayed on the underside of the right wingtip with the top of the numbers or letters towards the leading edge, and also on the pilot's helmet or on other equipment. Numbers may be additionally required on top of the wing. For paragliders, the number will normally be placed under the centre of the wing, top towards the leading edge. Helmet numbers may also be required.

The size of the figures and the area on the wing to be kept clear for this purpose shall be stated in the local regulations.

Failure to display numbers as required is a technical offence and may be penalised accordingly.

5.16 Registration and scrutineering

On arrival at the championships site each team leader and his team members shall report to the Registration Office to have their documents checked and to receive any supplementary regulations and information. The end of the official Registration Period is considered to be the official start of the championship.

After the opening of the launch window on the first scheduled competition day no change of pilot or glider may be made except as specified under the conditions of 5.19.4 (Damage to a competing glider).

5.17 Briefing

The Director shall hold a briefing for team leaders and/or competitors before each task, at which full meteorological and operational information concerning the tasks shall be given. Task, weather, airspace information, and any special requirements shall be in writing. If possible, a meteorologist prepared to answer questions from pilots shall give weather briefings.

Flight safety requirements given at briefing shall carry the status of regulations.

Briefing may be postponed from the set time in the event of bad weather and further briefing be given if necessary.

All briefings must be conducted in English only.

5.18 Team leaders' meetings

Communication between the organisers and competitors is, in addition to daily briefing, normally through team leaders' meetings. These shall be held at the Director's initiative but shall also be held within 18 hours if five or more team leaders request a meeting.

5.19 Operational regulations

5.19.1 Compliance with the law.

Each competitor is required to conform to the laws and to the rules of the air of the country in which the championship is held.

5.19.2 Airworthiness.

Each glider shall be flown within the limitations of its certificate of airworthiness or permit to fly and its manufacturer's published limitations. Any manoeuvre hazardous to other competitors, or the public and unauthorised aerobatics is prohibited.

5.19.3 Pre flight check

Each glider shall be given a pre-flight check by its pilot and may not be flown unless it is serviceable. Pilots shall ensure that they have a proper hang check/leg loop check immediately prior to launch.

5.19.4 Damage to a competing glider

Any major damage shall be reported to the organisers without delay and the glider may then be repaired. Any replacement parts must conform exactly to the original specifications. If permission is given by the Director to replace the glider temporarily or permanently for reasons of damage or loss or theft beyond the control of the pilot, it may be replaced by an identical make and model, or one of similar or lower performance and eligible to fly in the same class.

5.20 Flight safety

5.20.1 Dangerous flying conduct

It is the responsibility of every pilot to fly in such a way that personal safety and the safety of others is maintained at all times. Directors may penalise competitors who fail to observe this rule, or exclude them from the results.

5.20.2 Helmet and parachute

A helmet is not compulsory in hang gliders with enclosed cockpits if it will restrict pilot vision, but is compulsory in all other classes.
With the exception of Short Course Speed events, pilots must carry a serviceable rescue parachute.
Further safety requirements may be detailed in the local regulations.

5.20.3 Fitness

A pilot may not fly unless he is fit. Any injury, drugs or medication that might affect the pilot's performance in the air must be reported to the Director before flying. Performance enhancing drugs are prohibited. "Refer to General Section 3.11.2"

5.20.4 Collision avoidance

Competitors shall at all times adhere to the international rules of the air. Ridge soaring , turning and landing patterns shall be complied with and a proper lookout kept at all times. A glider joining another in a thermal shall circle in the same direction as that established by the first regardless of height separation. All pilots must read and understand the explanation of proper thermal procedures presented in chapter 27. Failure to follow these guidelines may result in penalties to the pilot concerned including disqualification from the event.

A competitor involved in a collision in the air must not continue the flight if the structural integrity of his glider is in doubt.

5.20.5 Cloud flying

Cloud flying is prohibited and gliders may not carry gyroscopic instruments or other equipment permitting flight without visual reference to the ground. The organisers may include special instruments by type or name under this prohibition. Failure to keep clear of cloud may result in penalties to the pilot concerned including disqualification from the event.

5.20.6 Suspension, cancellation or stopping of a task

5.20.6.1 Suspension

The Competition director may suspend the launch if conditions become unsuitable, for safety reasons.
If launching is suspended only for a short period, the Director need not cancel the task.

5.20.6.2 Cancellation

The Competition Director may cancel a task before any competitor has taken off if the weather becomes unsuitable or for safety reasons.

5.20.6.3 Stopping

The Director has the power to stop a task after some or all pilots have taken off only in an emergency resulting from hazardous weather or other conditions which could not be avoided by the pilots, and which would endanger their safety.

5.20.6.4 Scoring of Stopped Task

When a task is stopped it will be cancelled (and not scored); unless at least one pilot has landed in goal at the time the task is stopped. Where at least one pilot has landed at goal the task ~~will~~ may be scored with ~~and~~ pilots' scores ~~will~~ being determined from their GPS track log position at the time the task was stopped. The local regulations shall state whether tasks may be stopped and scored and describe the circumstances in which this will happen.

5.20.7 Ballast

A competing glider may carry jettisonable ballast only in the form of fine sand or water. A pilot shall avoid dropping ballast at any time in a manner likely to affect other competing gliders and other third parties. Note: See also section 22.3.

5.21 Test flying

No competitor may take-off during a competition day from the competition site without the permission of the Director. This may be given for test flying; however, if the task for that class has started the pilot must land after the test flight and make a competition take-off on the task.

5.22 External aid to competitors

The following limitations are so that, as far as possible, the contest shall be between individual competitors, neither helped nor controlled by external aids.

5.22.1 Navigation

Any help in navigation or thermal location by any non-competing aircraft, including competing gliders not in the act of carrying out the task of their own class, is prohibited. Pre-fliers (Wind dummies) must land or fly in a designated area as soon as possible after task flying has started (see chapter 7, Pre-fliers).

5.22.2 Radio

If radio transmitters are permitted in the local regulations one transmitter is permitted in each competing glider, one for the use of the team leader and one in each of a maximum of two retrieve vehicles. These radios are for communication between competitors and between them and the organisers. They may not be used to contact ATC other than for obtaining permission from an airfield to land on it, unless the organisers specifically require this. Permitted frequencies will be specified in the local regulations. The above does not apply to emergency location transmitters (ELTs), which are incapable of voice transmission.

5.22.3 The use of GPS

Or similar positioning systems, by competitors in the air are permitted for navigation and flight recording purposes.

5.23 Retrieving

A pilot making an outlanding shall return by surface transport. Aero tow retrieves or return by aircraft are prohibited except as detailed in the local regulations. If organisers provide retrieves, the next task may not be started unless all serviceable competing hang gliders are retrieved in time to participate.

5.24 Rest days

The director may declare a rest day after six consecutive days of flying unless this is the last day of the competitions. The policy on rest days shall be declared before the first competition day.

5.25 Championship classes

5.25.1 Number of classes
The organisers shall hold the championship in one or more of the classes as approved by CIVL (see 1.4), provided that at least eight pilots from four countries in each Class, are entered, with entry fees paid, and available to fly during the competition.

5.25.2 Multiple Class Events
If a championship is held in more than one class, each class shall be regarded as a championship in its own right and the organisers must, as far as possible, avoid interference of one class by another, except Category 1 Championship Organisers are strongly recommended to run Classes 2 and 5 concurrently, with the same tasks and launch points as long as safety is not compromised. Competition Organisers are encouraged to bid for both these class championships simultaneously.

5.25.3 Launch Points
Where more than one class is competing from the same launch site it is recommended that organisers allocate launch priority to each class at a separate launch point, which may change daily. Where this is not practical, and in any mixed class launch lanes, the local regulations shall specify how the push rule (5.27.7) is to be applied to a queue of mixed class gliders.

5.25.4 Separation of Classes
Where both flexwing and rigid wing championships are run concurrently it is recommended that organisers separate classes as far as possible by varying launch/start times, start cylinder radius and other available means.

5.25.5 Class Conformity
Each competing glider will be subject to inspection for compliance with class rules at any time during the championships.

5.26 Championship tasks

5.26.1 Type of task
A task from the following list shall be set on each flying day:

a. Distance, straight or via one or more turn points. The direction in which a straight distance flight shall be flown may be designated.
b. Area distance. Distance within a set area bounded by 4-10 turn points which may be turned in any order except that a turn point may be used only once. It shall be stated at briefing if the start and finish points are or are not considered as a turnpoint. Distance is measured from the last valid turn point to the landing place if within the area bounded by the turn points. If outside, the distance is measured to the point at which the line from the last valid turn point to the landing place cuts the boundaries of the task area.
c. Distance out-and-return via one turn point or one of several turn points within a 30 degree sector.
d. Speed to a goal either straight or via one or more turn points or speed around a closed circuit course.
e. Race over a designated course.
f. Speed around a closed circuit course followed by distance either around the same course or in a straight line.
g. Duration via one or more turn points with landing at goal.

5.26.2 The organisers
May propose additional tasks at the time of making their bid for the championships provided they have satisfactory experience of the new task(s) in national championships.

The task for each class may be different and a task may be set for one class only.

The Director may give alternative tasks at briefing for use if the weather deteriorates, but may not change the task once flying has started.

5.26.3 A competitor
Is permitted more than one start for a task if so stated in the local regulations.

5.26.4 Closing Times
The director shall state at briefing the times at which take-offs, start and turn points and finish lines close. A last-landing time may also be set. If the start is delayed all given times will be delayed by corresponding amounts except that the last-landing time will in no circumstances be later than sunset plus 30 minutes. It may be earlier if local national air regulations or practical considerations so require; this must be stated in the Local Regulations.

5.27 Start of a task

The organisers may use any of the following start systems as agreed by CIVL at the time of the acceptance of the bid to run the championships. The local regulations shall state which is to be used. The local regulations must state the minimum length of time that the launch window must be open for the round to be considered valid.

5.27.1 Launch window open time.

The launch window open time will be based on the number of competitors and the number of simultaneous launch points available. Normally a minimum of 45 seconds of safe launch conditions per pilot is recommended. The precise method for determining the minimum launch window open time will be a method agreed to by the Steward and the Competition Director at the Pre-competition. The launch window will be considered adequate if the amount of safe launchable time available exceeds the designated minimum time or if 85% of the pilots registered for the championship and present at the launch site have launched.

5.27.2 Open window

Free take-off without any set order. There must be a large enough rigging area for competitors with enough marshals to ensure easy entry into the take-off corridors.

There must be at least one ramp or take-off place for each 40 competitors, and competitors must be able to take-off at a rate of at least two per minute in ideal conditions.

5.27.3 Pilot choice of start time

Pilots choose their take-off time on a time board.

A board marked with suitable time intervals (e.g. 30 seconds) with a hook at each time space. The board should have spaces for about 3-4 hours time. Each pilot is given a small disc bearing his contest number.

Each pilot hangs his contest number disc on the take-off time hook of his choice. Only one disc is permitted on any hook. Pilots may re-hang their discs on any empty hook until ten minutes before take-off. If a pilot is not ready to go at his time he must pull out of the line and hang his disc on an empty hook giving a time at least ten minutes later.

5.27.4 Start list

Pilot's take-off in a scheduled order, which advances automatically each day.

A take-off order is made by lottery before the first task. This order advances each day by a proportion of the competitors (say 2/7). If space allows (as in an aero tow launch competition) the gliders can be placed on numbered spots before first take-off time.

5.27.5 Ordered Launch

Pilot's take-off in a scheduled order, which is determined by the Competition Director using the method approved by CIVL in the local regulations. When there are no pilots willing to launch, the Competition Director may allow pilots outside their launch order to move to the front of the launch queue, where they will be treated in the same fashion as a pilot who has 'pushed' under

5.27.6 Other start system proposal

A new proposal by an organiser.

A proposed, new start system may be used, provided that the system has been used successfully in at least one national championship of similar size to the event for which the bid is being made. The organiser shall produce his proposals in detail before acceptance of his bid.

5.27.7 Take-off 'push' system

At sites where the pilots are required to queue to take-off, the Competition Director may use the push system. This allows any pilot to push a line of competitors by announcing to the take-off official 'Pilot number X is pushing". Immediately, all pilots ahead of the one pushing have 30 seconds (see note) in which to decide to take-off and then a further 30 seconds to complete the take-off. A pilot who declines to take-off during his decision period must immediately go to the end of the queue. A pilot who fails to take-off within the completion period will be scored zero for the task. When the pushing pilot arrives at the take-off point he is not permitted any decision time, but must take-off within 30 seconds or be scored zero for the task.

Note: Competition Director may specify different time periods to suit local site conditions, but these must not be changed during the period of the competition.

5.27.8 Launch Officials

Where launch lanes or a queuing system is used the organiser shall provide a minimum of three launch officials per lane or launch point, whether the launch is ordered or not.

5.28 Flying the task

A set course shall be flown in the direction specified at briefing.

5.28.1 Failed take-off

Or safety problem immediately after take-off which results in a landing will not count as one of the permitted number of take-offs but the pilot's take-off time will be that of his first take-off attempt.

5.28.2 Control at starts, goals and turnpoints

At starts, goals and turn points will be made by a method approved by CIVL and detailed in the local regulations. Details regarding crossing the finish line are explained in 23.2, Goal line control

5.28.3 Precision landing task

May not be combined with a distance task.
Paragliding precision landing tasks are explained in chapter 24

5.28.4 If a pilot's camera prints a time

On the film this time shall not take precedence over a time shown on the official clock.

5.29 Out landings

If a pilot lands away from the designated goal for the task he must inform the organisers in person or by telephone, or radio (if permitted), with the minimum delay, at the latest by the closing time for the task. On return to base he must go to retrieve control with his report and films and/or GPS unit. Failure to follow this procedure without good reason may result in the pilot not being scored for the task, or in charges for any rescue services, which have been called out.

Landing evidence shall be from photographs and/or GPS track log as evidenced by an approved GPS flight verification system (Chapter 21, Rules for GPS Flight Verification) and if possible the name and address of a witness other than a member of pilot's national team.

5.30 Flight boundaries

Flights terminating beyond the boundaries of the organisers' country or state shall score only to the point where a straight line between the start point or last turn point and the landing place last cuts the boundary, unless permission to cross such boundaries is given in the local regulations.

The organisers shall specify in the local regulations or at briefing, controlled airspace or other areas where flight by competing gliders is prohibited or restricted. Such areas shall be precisely marked on published maps.

5.31 Scoring

In the absence of any day validation in the scoring system, a championship task is defined as one in which not fewer than 20% of the gliders in the class fly the minimum scoring distance as stated in the scoring formula. This distance may be varied by agreement with CIVL as the performance of gliders improves, but in any case, shall be a constant throughout a championship.

The overall results shall be computed from the approved scoring system. The status of guest pilots for scoring purposes shall be stated in the Local Regulations.

A score given to a competitor shall be expressed to the nearest whole number, 0.5 being rounded up.

5.31.1 Times and distances

Are measured via correctly controlled turn points as accurately as practical and any rounding of distances shall be in accordance with the approved scoring formula.

A pilot who did not fly scores zero and is indicated DNF on the score sheet. A pilot who is disqualified will be indicated DSQ on the score sheet. A pilot who withdraws for illness or accident or is disqualified from the competition shall no longer be counted in the group or class for the purposes of scoring.

5.31.2 Deduction of penalty points

Shall be made after scoring is completed.

5.31.3 Negative score

If a pilot's score is for any reason negative, including penalties, his score for that task shall be zero. Negative scores may not be carried forward.

5.31.4 Upper limit
An upper limit to a task score must be set unless the formula includes an automatic limiting factor.

5.31.5 Assisting injured pilots
A competitor who lands specifically to help an injured pilot must not be disadvantaged by this action. However, points awarded in compensation are at the discretion of the Director who is required to take all the circumstances into consideration before awarding them. For guidelines to procedures concerning pilots in danger, see chapter 18, Guidelines for Assistance to a Pilot in Danger. It is often a fair solution to award a pilot the average of their task scores to date, normalised.

5.31.6 Score sheets
Shall be labelled PROVISIONAL and OFFICIAL as appropriate, and marked with the date and time of issue.

5.32 Scoring formula

5.32.1 Purpose
The object of the scoring system is to reward pilots for their performances as fairly as possible.

5.32.2 Types to be used
The scoring system to be used will be approved by CIVL and described in the local regulations. Chapter 8, Scoring Systems, contains general information regarding scoring systems. More specific information regarding scoring systems will be found in the chapters relating ~~with~~ to Soaring competition (chapter 23), Paragliding Landing Accuracy (chapter 24) and Short Course Speed events (chapter 25).

5.32.3 Announcement of championship formula
The organisers are to publish the name of the formula to be used a minimum of 3 months before the event.

5.32.4 Team scoring.
The systems used for team scoring are described in
- For soaring competition team scoring see 23.3
- For PG landing accuracy competition see 24.6.4
- For Speed gliding the team scoring will be described in the local regulations

5.33 Unsporting behaviour

Unsporting behaviour should be dealt with according to chapter 19, Participant Incident Policy, and General Section 5.2.

5.34 Short course speed events

Refer to chapter 25, Short Course Speed Events

5.34.1 Description
Short-course speed events are those, which take place over defined courses and in which thermal lift is not significant. They include ridge-races, downhill-races and time-trials.

5.34.2 Safety
Organisers of short-course events must ensure that they are conducted in such a way that safe separation between competing hang gliders is maintained at all times.

5.34.3 Variation in Rules
Local regulations for short-course competitions that do not comply with those for Short Course Speed Events (chapter 25) must be submitted to CIVL Bureau for approval.

6 CONTROL AND MEASUREMENT OF FLIGHTS
GS references: chapter 4 - Observers - Officials, chapter 7 - Measurement Requirements

6.1 Special rules for hang gliders

Control of flights shall be affected by official observers except that aero tow pilots may certify the altitude, time and point of release from tow.

For records evidence of the landing place must include the signatures and addresses of at least two witnesses.

6.2 Measurement

The following requirements apply to all flights for records and proficiency badges:

6.2.1 Badge flights

For badge flights and championships distance flights may be measured on a single map of a scale where 100 m is represented by 1 mm or more. For longer distances, measurement shall be as in 6.2.2

6.2.2 Flights exceeding 100km

For all records and for badge flights exceeding approx. 100 km, distances shall be measured by determining the arc of a great circle at sea level which joins the vertical lines of two given points. For this purpose the earth is considered to be a sphere of radius R = 6371 km (see chapter 14).

6.2.3 Measurement of speed.

The average speed of the flight is the total course distance divided by the elapsed time from the departure point to the finish point.

6.3 Altitude distance relationship

For allowable height loss during record and badge flights see item 3.5.6

6.4 Barographs and flight recorders

A serviceable barograph or flight recorder approved by CIVL must be used for record and badge flights. It is the responsibility of the official observer to be familiar with the equipment used. In an FAI First category event a barograph is not required for a record claim on a scored closed-circuit course.

6.4.1 Flight data recorders

Flight data recorders that comply with the IGC (sporting code section 3) standards may be used

6.4.2 The barograph

Must show that no intermediate landing was made and must generally substantiate the flight.

- It must not be possible to adjust the recording function of the barograph in any way without breaking the seal or the possibility of this being apparent to the Observer
- The barograph must be sealed and opened only by an Official Observer who must observe the print out taking place on electronic barographs
- For altitude records, the barograph must be calibrated not more than 12 months before or one month after the record attempt. Where no height performance or control is involved no calibration is required

6.4.3 Aero tow launches.

To aid determination of the start altitude, the glider pilot (and the tug pilot when a barograph is on board) must ensure that a low point or "notch" is indicated on the barogram immediately following release.

6.5 Start and Finish lines and Ground Signals

6.5.1 Description

Start and finish lines are gates, either clearly marked on the ground or between two vertical features. For championships any relevant lengths or other distinguishing features or heights shall conform to the relevant chapter of this manual, and shall be stated in the local regulations

6.5.2 Visual Signals

Ground signals (‘tarps’) that are used to show the starting moment for air-start race tasks, or any other purpose, must be big enough to be clearly visible from the maximum height the competitors are likely to attain. The preferred type consists of strips of fabric, each at least 20m x 2m. The type and layout of any ground tarps will be defined in the local regulations. Guidelines for ground tarps can be found in the Competition Organisers Handbook.

6.6 Photographic evidence

6.6.1 General

If the local regulations state that only photographic evidence is used, no other evidence is admissible except that evidence of crossing a finish line may be from ground observers.

6.6.2 Cameras

Used for flight verification must have a lens of fixed focal length, of between 30 and 60 mm and take 35 mm film.

6.6.2.1 Seals

If it is possible to alter the order in which the exposures are made or change the time shown on the film during the flight the camera must be sealed before take-off.

6.6.2.2 Film

Two cameras may be used but only one film will be used to verify the flight. Both films shall be handed in after landing marked 1 and 2.

Pilots are advised to scratch the competition number on the leader tongue of the film before loading.

6.6.3 Film

Used for photographic evidence must remain uncut.

6.6.4 Data-back cameras

Are permissible.

6.6.5 Task Photos.

The photographic evidence on each film must show as a minimum:

- For records and badges the declaration board showing date, pilot name, place, time and flight declaration.
- For championships, the task board showing date, task, official clock and pilot competition number.
- Alternatively the number may be shown on the pilot's helmet or wing on the following photo.
- Photo of the start point or start clock if applicable
- Photos of ground signals, turn points or control points in the correct or pre-declared sequence
- Photo(s) of the glider at the landing place immediately after landing and before it is packed, as well as photos showing identifiable evidence of the landing place
- In championships at least one of these photos must show the glider's competition number.

6.6.6 Photo Sectors

Will be described in the appropriate local regulations.

7 PRE-FLIERS (WIND DUMMIES)

The object of pre-fliers is to assist the Director in deciding when to start take-offs, and to provide information to competitors about the thermal prospects. Rules in this section may be varied in Chapter 24 and in the local regulations for Paragliding Landing Accuracy events.

To give the Competition Director the information he needs, the pre-fliers must fly when and where he wants them to, even if this results in their landing out.

When competition flying begins, the pre-fliers have done their job and must land or fly in a designated area as soon as possible so that they do not interfere with competition flying.

Pre-fliers must be a part of the organization and receive similar benefits as other helpers. They must not be members of teams.

Pre-fliers should be pilots of equivalent skill to the competitors. It should be an honour to be chosen as a wind dummy and good ones are valuable at assisting in task decisions.

The status of pre-fliers and their important role in championships should be recognised.

Free fliers and personnel associated with teams must not be permitted to fly the tasks or sections of it; it is particularly important that they do not approach goal fields.

8 SCORING SYSTEMS

A scoring system that has been approved by CIVL will be used for competition scoring.

A scoring system shall be tested at a major competition before it is used in a first category event.

The scoring system must be consistent with local regulations, which must specify in detail the way in which any variable within a formula is to be determined. It is also important that the design of the competition, especially the selection of tasks and local factors complements the scoring system.

If the scores of the first, second or third in each class are identical, the tie shall be broken by counting the highest task positions of the tied pilots with the pilot, or team, having the highest number being declared winner. If this does not break the tie, joint champions will be declared

8.1 Competitions with a cut

Competitions run as a single group, with a Cut to reduce the numbers of competitors.
There will be no cut during the event unless this is required by the organisers at the time of making the bid. If the request is accepted the cut may not be made until 4 valid tasks have been flown. Thereafter a cut may be made to reduce the total number of competitors to not less than 60% of the number of pilots who competed on the first day

8.2 Competitions with normalisation

Competitions run with two or more groups, with Normalisation to form a single group.

8.2.1 Use and Safeguards

Normalisation is needed in championships where a large entry makes it necessary to divide the pilots into approximately equal groups for the preliminary rounds of the competition. The groups fly the preliminary rounds at different sites or at different times. At the end of the preliminary rounds the leader of each group is given the same score and the scores of the other pilots in each group are adjusted proportionately to that figure. The resulting scores are carried forward to the final rounds. The following safeguards must be applied when the final competition group is formed:

- The leaders of each group must enter the final rounds with equal scores.
- If the groups of the preliminary rounds have not flown an equal number of tasks, scores must be averaged across the groups before applying the normalisation factor to individual pilots' scores.

8.2.2 Method

The precise normalisation method to be used shall be stated in the local regulations and approved by CIVL. The score allotted to the group leaders, from which normalisations are calculated, should approximate to one-half of the value of the rounds flown.

8.2.3 Grouping of Pilots

The pilots shall be allocated to each group based on a seeding list as determined by the WPRS. The pilot seeded 1 shall be allocated to one group, the pilot seeded 2 to the next group, and so on to form groups of similar size and seeding.

8.2.4 Duration of Rounds

The elimination rounds shall continue until the average number of valid rounds conducted is at least 45 percent of the maximum number of potential flying days within the competition period. The number of potential flying days at any point in time shall be determined as the average number of valid rounds conducted to date, plus the number of days remaining in the competition (not including the emergency day).

8.2.5 Grouping for Final Rounds

Pilots will be selected on the basis of their normalised score to compete in the final rounds. Where more than one pilot in a group has a score equal to the cut off point then each pilot affected shall be eligible to compete in the final rounds. An equal number of pilots shall be selected from each group. All other pilots may either be:

- Eliminated from the competition; or
- Formed into a single (separate) group for further competition rounds.

9 HANG GLIDERS FITTED WITH A POWER SOURCE

9.1 Principle of Use

A hang gliding record may only be obtained if the power source, after being stopped, CANNOT be restarted in flight. This causes the pilot to fly as a genuine glider pilot with all the disciplines involved. If the engine is merely stopped but can be restarted during the flight in order to get out of trouble, the pilot is not subject to the disciplines of flying a glider and therefore has an advantage.

9.1.1 Records and Badges

For records and badges, the use of a motorised hang glider for FAI gliding record flights may be claimed provided there is proof that the power source prior to take-off was made incapable of being restarted in flight and that requirements, below, are fulfilled.

- Distance, speed and goal flights. No record or badge may be claimed unless the start line is crossed with the power source stopped.
- Height flights. No record or badge may be claimed unless a barograph and power source are carried and there is proof that the power source was stopped prior to the start of the height gain.

9.1.2 Power source recorder

Many barographs are or can be fitted with a recorder to indicate when the power source is being operate, however for record attempts, flight data recorders that comply with the IGC (sporting code section 3) standards will be used

10 CHECK LISTS FOR CHAMPIONSHIP ORGANISERS

11 SANCTION FEES

Sanction fees for FAI/CIVL events to be paid by the organizers of such events to FAI/CIVL are as follows:

11.1 First category events

World Championships and WAG in each class: Swiss Francs 8,000
Continental Championships: Swiss Francs 5,000

For bids awarded in 2003, the fees will be
World Championships: Swiss Francs 10,000
Continental Championships: Swiss Francs 6,000

Deposit payable when presenting bid (all first-category events): Swiss Francs 1000.00, refundable if the bid fails.
To encourage new Championships, the Sanction Fee payable by the organiser of a first-time first-category event is reduced by 50%.
In Championships where there are fewer than 75 competitors, the sanction fee is negotiable

That designated countries pay their entry fees to FAI and that this is held as a deposit. If the event is deemed successful then the Sanction Fee is paid from these funds and the remaining moneys are paid to the organiser.

The Countries which will pay their entry fees directly to FAI will be announced in the local regulations that are finalised during the Plenary preceding the event.

11.2 Second category events

The fee for any second category event is the equivalent of the single entry fee (the pilot-participation fee, inclusive of such compulsory 'extras' such as films, lift-passes, etc., but exclusive of accommodation). The fee is payable in Swiss Francs. If an organiser of a second category event is found not to have checked the FAI licences of competitors the fee for organisers from that nation in the subsequent year will be equivalent to two entry fees.

11.3 Payment of fees

All fees have to be paid to FAI/CIVL before a competition starts.
Fee payments must be accompanied by a reference which includes the full name of the competition, the class(es) of competition and the name of the organiser.

FAI bank account details:

Crédit Suisse Private Banking
Rue du Lion d'Or 5-7
Case postale 2468
CH- 1002 Lausanne
Switzerland

Account name Fédération Aéronautique Internationale
Account Number: 0425-457968-31(Swiss Francs)
or 0425-457968-32-1 (US Dollar)
or 0425-457968-32 (Euro)
SWIFT Code: CRES CHZZ 10A

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15 SAMPLE LOCAL REGULATIONS

LOCAL REGULATIONS FOR
(Continent e.g. EUROPEAN or WORLD) HANG GLIDING/PARAGLIDING CHAMPIONSHIPS

AT .....
.....

ON .....
.....

ORGANISED BY .....

ON BEHALF OF THE
FÉDÉRATION AÉRONAUTIQUE
INTERNATIONALE

The text and numbering is not to be changed except with the agreement of CIVL at the time of making the Bid to hold the event. At this time the prospective organisers may propose additions or modifications to this CIVL Local Regulations document.

Spaces and items in brackets in this document are to be completed by the prospective organisers after agreement by CIVL. Section 7 references on the right are for use by team leaders, jury, etc.

The title page of the Local Regulations must include:

LOCAL REGULATIONS FOR THE

……
CHAMPIONSHIP

These local regulations are to be used in conjunction with General Section and Section 7 of the FAI Sporting Code. Reference numbers for Section 7 used in this text should be crosschecked with the latest edition of Section 7.

Full title of the championships

Location and country

Dates, including practice period, registration and opening ceremony.

Logo of FAI and of championships

Organised by the ..... Aero Club on behalf of the Fédération Aéronautique Internationale

Address to which any correspondence should be sent in advance of the event, and address of organising National Aero Club.

15.1 Purpose

The purpose of the championships is to provide good and satisfying contest flying in order to determine the champion in each Class and to reinforce friendship amongst pilots and nations. (Section 7; 5.2)

15.2 Programme

Training, hang glider inspection, registration	..... to .....
Opening Ceremony	.....
First Competition Briefing	.....
Contest Flying Days	.....
Closing Ceremony, Prize giving (Reserve day or not)	.....

15.3 Officials

Director		.....
Deputy Director		.....
Key officials		
Meteorologist		.....
International Jury :	President	.....
	Members	.....
		.....
Stewards		.....
		.....
		.....

(Give nationality of Jury and Stewards).

15.4 Local regulations

1	ENTRY	**Section 7 References**
1.1	The Championships are open to all Member and Associated Member countries of FAI who may enter any number of hang gliders not exceeding -------.of one sex and ----- of the other sex in Class ---- (If more than one class are run indicate for each class the team size. (or as specified in the relevant annex) Entries must be made on the official Entry Form, which must include the entry fee, what is included and the closing date.	5.9.1.
1.2	Applications, with fees paid, not received by the entry deadline may be refused.	

1.3	The following NACs will pay their entry fee directly to CIVL/FAI account:	11.1
2.	**GENERAL COMPETITION RULES**	
2.1	REGISTRATION. On arrival the team leader and members shall report to the Registration Office to have their documents checked and to receive supplementary regulations and information. The end of the official Registration period is considered to be the official start of the championship. The following are required:	5.17
2.2	Pilot qualifications Evidence of competitor's nationality Pilot's valid FAI Sporting Licence Receipt for payment of entry fees by the closing date. Satisfactory evidence of glider airworthiness Certificate of Insurance as detailed on Entry Form	
2.3	The Registration office will be open from ..... to ..... on ..... The closure of Registration is considered as the official start of the championship.	
3	**REST DAYS**. The policy on rest days shall be declared before the first competition day.	5.25
4	**COMPLAINTS AND PROTESTS.** A complaint may be made to the Competition Director or his deputy, preferably by the team leader, in writing, to request a correction. It should be made with the minimum delay and it will be dealt with expeditiously. If the complainant is not satisfied with the outcome the team leader may make a protest in writing to the Director or his deputy. (See General Section chapter 5). The time limit for protests is ------- hours after publication of the provisional task results or the results of the complaint, except that after the last contest task it is ------ hours. The protest fee is ----------. It will be returned if the protest is upheld.	5.4.5 24.4 (Accuracy)
5	**TAKE-OFF METHODS**	
5.1	Foot Launch from hill site. Give information on : Site names, locations, height of take-off, layout and area of grid, etc.	
5.2	Tow. Give information on : Airfield name, location, size and layout of take-off area Number of tugs which will be available Tow rope length, weak link strength Aero tow release height, tug flight patterns and drop zones Requirements for base bar wheels and trolleys	
6	**RADIO TRANSCEIVERS**. (State if radio transceivers are prohibited or permitted. Radios are for communication between competitors, team leaders, drivers and the organisers. Only frequencies allocated by the organisers may be used. The above does not apply to ELTs incapable of voice transmission. The use of GPS systems during competition flights is/is not permitted. (Give the Safety radio frequency)	5.23.2
7	**RETAKE-OFF** A competitor will be allowed ----- take-off (s) to attempt the task within the stated take-off period. A failed take-off attempt or safety problem arising immediately after take-off which results in a landing will not count as one of the permitted number of take-offs. However, the pilot's take-off time will be taken from the time of the first take-off attempt.	5.27.2 5.29.1
8	**TASK PERIOD**. Times of window open for take-off and times for the closing of the window, turn points and last landing will be displayed in writing. Any window extension policy will also be displayed in writing. The minimum period of time that the launch window will remain open for the day to be considered valid is…….	5.28
9	**SCORING.**	
9.1	[Insert Scoring system approved by CIVL when making a bid including method for normalising group scores (if needed).	5.32, 5.33
9.2	Team Scoring. State approved team score procedure	5.33, 23.5, 24.9.6

9.3	For scoring purpose, guest pilots are / are not counted as competing pilots.	
9.4	Scoring a stopped task. Give rules that will be used for scoring a task that has been stopped but not cancelled and state the circumstances in which this will be used.	5.20.6
10	Thermaling rules and procedures. All pilots must read and understand section 27, Thermaling Rules and Procedures.	

16 CHAMPIONSHIP ENTRY FORM EXAMPLE

ENTRY FORM FOR

(Title of championships, Dates, Location, Country)

Name of National Aero Club

Address

tel/fax _____

We wish to enter the following competitors who qualify under the FAI Nationality or Residence Rules (General Section 3.7.):

Name	Nat/Res	Age	Sex	Comp. Class	Sporting Licence n°	Pilot Qualification IPPI card

- Note that insurance document should be provided with English translation where necessary
- Contact name and Tel number for medical emergency (e.g. next of kin)
- Medical details (blood group, allergies, etc.)
- Confirmation that qualification criteria met.
- Address /Tel number during competition
- Names of others sharing accommodation

The maximum number of gliders which may be entered is _____ with not more than _____ in any Class.

Name of Team Leader _____

Names/number of Assistants if known _____

_____

Names/number of accompanying technical officials if known _____

_____

ENTRY FEES. For each pilot (insert amount) _____
For each assistant (insert amount) _____
For the Team Leader (insert amount) _____
For each technical official (insert amount) _____

Total _____

This amount is enclosed/will be paid by (date) _____
in the form of (currency) _____ .

The following is included in the entry fee:

_____

_____

_____

_____

_____

_____

I/We declare that the above information is true, and that all the pilots meet the required qualifications for entry to this competition (evidence attached) as per rule 5.11.of Section 7.

Signed _____

Name _____ Position in NAC _____ Date _____

INSURANCE. Each competing pilot must be covered for public liability risk to the value of _____. Proof of cover must be provided at Registration and before the hang glider is flown. Competitors are strongly advised to take out personal accident cover. Insurance can/cannot be arranged on arrival through the organisers.
Insurance documentation should be provided with English translation where necessary.

PUBLICITY. A passport type photograph and a short biographical note for each pilot and the team leader should be provided either with this Entry Form or at latest at Registration

GLIDER AIRWORTHINESS. The form of affidavit at Annex A must be signed by the pilot and witnessed or the additional documentation specified in 5.13 produced for prototype gliders.

WAIVER OF LIABILITY. The waiver at Annex B should be signed by the pilot, witnessed and produced at registration providing it is legally enforceable in the country hosting the championship.

Annex A to Sample Local Regulations

CERTIFIED GLIDER AFFIDAVIT

I, the undersigned, declare that the Class glider (make) . (model) I will fly in the _____ (Name of event) Championship, from to (dates) is certified by one or more of the internationally recognized certifying bodies (namely the DHV, HGMA or the BHPA). Furthermore I declare that it is in certified configuration and I undertake not to alter this configuration. I understand that I am the sole individual responsible for the integrity of my glider.

Signed on this date : _____

_____

Signature of Participant Printed name of Participant

Address of Participant : _____

_____

Signature of Witness Printed name of Witnesss

Address of Witness:___ _____ _____

Annex B to Sample Local Regulations

RELEASE OF LIABILITY, WAIVER OF LEGAL RIGHTS

Please read carefully. This is a release of liability, waiver of legal rights ***:***

1. I am a participant in the …… Championships held at …… from …… to ……200_ "the Championships"). I acknowledge that participating in the Championships or any other activity related thereto (collectively, the "Events") involves INHERENT DANGERS, may be HAZARDOUS and involves RISK OF PHYSICAL INJURIES OR DEATH. I expressly assume all risks associated with participating in the Events, including, without limitation to direct participation in the Championships or in training sessions, accessing restricted areas, sharing area facilities with people not directly involved in the Events and travelling in and between the Events' venues. Despite all the risks, I voluntarily choose to take part in the Events. (Initials:……..)

2. In consideration of receiving permission to take part in the Events, I agree to release and hold harmless the contest organisers, the …… National Aeroclub, the property owners of the operation areas (including launch and landing areas), the Federation Aéronautique Internationale and its …… Commission de ……., their respective affiliates, agents, officers, directors, owners, commission or jury members, contractors, volonteers, employees and insurers (collectively, the "Released Parties") from any and all claims I might make as a result of physical injury, including death, or property damage sustained in connection with the Events. I promise not to sue the Released Parties and agree that if anyone is physically injured or property is damaged while I am engaged in the Events, I will have no right to make a claim or file a lawsuit against the Released Parties. The provisions of this paragraph 2 shall not apply to misconduct determined to have been undertaken intentionally or recklessly. (Initials:……..)

3. This Release of Liability, Waiver of Legal Rights supersedes any other agreements or representations by or between the parties and is governed by the laws of …… …… I intend this document to be interpreted as broadly as possible. I agree that exclusive jurisdiction and venue for any legal action shall be in ……courts and such courts have personal jurisdiction. (Initials:……..)

4. If any part of this agreement is determined to be unenforceable under the applicable law, all other parts shall still be given full force and effect and the agreement shall be completed in respect of the aspects covered by the part which is declared unenforceable as to give effect to the intent herein expressed to the fullest extent permissible by law. (Initials:……..)

I HAVE CAREFULLY READ THIS DOCUMENT AND FULLY UNDERSTAND ITS CONTENTS. I AM AWARE THAT THIS IS A RELEASE OF LIABILITY, WAIVER OF LEGAL RIGHTS AND I SIGN IT OF MY OWN FREE WILL.

Signed on this date : _____

_____ ____ _____

Signature of Participant Printed name of Participant

Address of Participant : _____

_____ _____

Signature of Witness ___ Printed name of Witnesss

Address of Witness:___ _____

17 PARAGLIDER LINE STRENGTH DOCUMENTATION REQUIREMENTS

18 GUIDELINES FOR ASSISTANCE TO A PILOT IN DANGER

19 PARTICIPANT INCIDENT POLICY

20 GUIDELINES FOR CLASS II & V DETERMINATION

21 RULES FOR GPS FLIGHT VERIFICATION

21.1 General

21.1.1 Category 1 Events

Flights in Category 1 Championships will be verified using GPS track-log evidence. Only in exceptional circumstances will the relevant CIVL Competition Committee allow photographic evidence.

21.1.2 Approval

Any system of GPS flight verification must first be approved by the relevant CIVL committee as being secure and suitable for the purpose of verifying competition flights.

21.1.3 Notification

Where GPS flight verification is to be used, the competition organization may only use flight verification software that has been evaluated by the relevant CIVL committee as being suitable and secure. The organiser must ~~advertise~~ publicise a minimum of 3 months before~~hand~~ the start of the event what approved (by the relevant CIVL Committee) software will be used (by name and version number) and the types of GPS instruments that will be supported.

21.1.4 Photographic Back-up

The competition policy regarding the use, or non-use of photographic backup must be advertised before the start of the competition

21.1.5 IGC Standard Equipment

Competitors who wish to use IGC standard equipment are welcome to so, provided the competitor provides all necessary hardware and software, and all IGC standards are properly followed.

21.2 GPS use

21.2.1 Back-up GPS

A pilot may use multiple GPS's for verification and backup and may submit multiple track-logs to the scorer. The evidence will be chosen so that the pilot's best possible score, from all correctly obtained data, will be taken for flight verification.

21.2.2 Multiple Tracklogs

Pilots may submit evidence for a flight using data from two (or more) GPS units, each covering part of the flight as long as the Competition Director is satisfied that the data was obtained by the pilot submitting it during the task it is offered as evidence of.

21.2.3 Tracklog Submission

Flight evidence submitted may only be submitted for the claimed flight.

21.2.4 Registration of GPS Units

Pilots must lodge the make, model and serial number of all GPS devices that they intend to use during the competition with the competition scorer. If the device a pilot nominated is damaged during the competition the pilot may wish to use an alternative device. The competition organiser or launch marshal must be given the make, model and serial number of this alternative device prior to a pilot launching to fly a round for which the pilot hopes to use the device's track-log for verification.

The Competition Director must ensure that each pilot has a unique make, model and serial number combination (i.e. no pilots are sharing devices) and they or their assistants must check the device's make, model and serial number prior to every task verification. Any GPS submitted which does not match the lodged information will be rejected for verification.

21.3 Sectors

21.3.1 Size of Sectors

Competitions will be run on the basis of using cylindrical sectors. The radius will ~~generally~~ be 400m unless specified differently in the local regulations.

21.3.2 Accuracy of GPS sectors

As only GPS evidence is used in a Category 1 competition, physical features on the ground are to be taken as a guide only. The use of virtual turn points not related to ground features are also permissible. The coordinates supplied by the competition organiser will be the turnpoints, goal and start points that the pilots will fly to except that, where manned goals are used, the pilots must cross the physical, marked goal line.

21.4 Track log

21.4.1 GPS Data

The pilot must provide an unambiguous track log that shows without doubt that the data was collected;

- By the pilot of the hang glider on the flight in question.
- Of the declared turn point ~~feature~~ co-ordinates from the correct location in the correct sequence.
- Between the takeoff and landing.
- With all relevant information being present on the track log.

21.4.2 Essential Data

The track log must show for any start, goal or turn point that is claimed for the flight, one of the following:

- A point within the normal FAI sector, plus the allowable sector additions for possible GPS error.
- A pair of consecutive points not more than 30 seconds apart for which a straight line drawn from the first point to the second point passes through the allowable sector, plus the allowable sector additions for possible GPS error

21.4.3 Start Data

Where the point being claimed is a start point and the track-log has 2 points either side of the start or goal line at most 30 seconds apart, then the start time is then interpolated from these points (constant speed being assumed). Otherwise a start time is taken from the last point within the start sector during the start window.

21.4.4 Missing track log

If a pilot can produce no track log, written verification by launch officials of take off within the authorised launch window will result in that pilot being scored to minimum distance rather than given a zero score.

21.4.5 Goal Data

Where the point being claimed is a goal point and the track-log has 2 points either side of the goal sector at most 30 seconds apart, then the finish time is then interpolated from these points (constant speed being assumed). Otherwise a finish time is taken from the first (in time) point within sector of the goal sector.

21.5 General Verification Rules

21.5.1 Minimum Tracklog Points

The track-log must contain on average at least 1 point for every five minutes of on course flying time (points taken prior to the start and after goal are not counted). e.g. a 2 hour flight must contain at least 24 track-log points between the start (launch or start point) and goal or the end of the flight.

21.5.2 Minimum Tracklog Evidence

The verification software ~~will~~ must confirm that all points used to verify the flight occurred at reasonable times (e.g. on the day in question, between the start of the task and the end of the task, and showing the correct chronology of start and turn points).

21.5.3 Evidence of Best Distance on Task

If goal is not achieved, the end of flight may be taken as to be the point within the track-log closest to the next target (not achieved). If the task is ~~an~~ open distance, the end of flight will be the point within the track-log that gives the pilot his/her best position according to the type of open distance being used. The time of the track log point chosen as the finish of the flight must be consistent with the flight being claimed and any landing deadlines that may be in force.

21.5.4 Scoring a Stopped Task

If a task is stopped, the pilots will still be scored up to the point in time when the day was stopped. The pilots may submit their track logs to claim their finish of the flight as being the last valid track point prior to the task being stopped, or their best position on course prior to the task being stopped. No other means of flight verification will be accepted if the task is stopped. Pilots who do not present a valid track log will in this case be given a landing score according to an agreed procedure, but aerial photographs claiming a position over the ground will not be accepted. Pilots without a valid GPS track will be at a disadvantage.

21.5.5 Missed Features

If the track log downloads successfully but shows that a pilot has missed feature(s) that the pilot was claiming. The backup track log(s) is to be checked. If no backup exists, or if the backup also fails to provide verification, no other means of verification shall be allowed and the pilot's flight is awarded as the "best flight" that the available GPS evidence verifies.

21.5.6 Best Evidence

If a pilot has undisputed track-log points in the start or finish sector, but does not have a proper track-log which actually crosses the edge of the sector, the pilots start or finish time may be determined from the best evidence that the pilots GPS has recorded in respect to the sector.

If a pilot has two or more undisputed track logs that each show only part of the claimed flight, then the individual parts of the different track logs can be used to verify different parts of the flight.

If a pilot fails to provide evidence of finish time when required, that pilot is awarded distance points only. If a landing deadline is in effect, or if the task is stopped, then all pilots will have their finish of flight determined by the last valid point on their track logs that is before the stated landing deadline or task stop time.

21.5.7 Time based disputes

If a pilot has undisputed track-log points in the start or finish sector, but does not have a proper track-log which actually crosses the edge of the sector, the pilot's start or finish time may be determined from the best evidence that the pilot's GPS has recorded in respect to the sector.

If the launch is within the start sector, and the pilot launches during the start window, but fails to provide proper evidence of start time, then the pilot is awarded a start time equal to the start window open time. The pilots elapsed flight time is then moved so that it begins at the time of the first start time of the pilots in goal (so that the Departure Point system is not compromised). If the pilot's new (artificial) goal time is outside of the advertised goal closing time, the pilot is awarded goal distance only.

21.5.8 Rejection of Track Log

The competition organiser has the discretion to reject any track log, or part thereof if he/she feels it does not show sufficient evidence that the claimed data is genuine. In such cases the pilot is to be awarded zero points for the round.

21.6 Pilot Responsibilities

21.6.1 GPS Equipment

Each pilot must ensure that he/she has equipment that is secure and compatible with the approved GPS flight verification software that is to be used. The makes and models that will be accepted for flight verification during a competition will be publicised prior to the start of the competition.

21.6.2 Operating Parameters

Pilots will be required to correctly set up the operating parameters of their GPS instruments. Failure to correctly set up their GPS instruments may lead to penalties being applied.

21.6.3 Landing Verification Form

Pilots will be required to correctly fill out a landing form with all relevant flight and landing information that they expect to have verified by their track log. Pilots are to sign the form to certify the authenticity of the information that they have provided. Failure to do so may lead to penalties being applied.

More stringent rules may be imposed by the competition organisers provided that they are included in the approved local regulations. Note. The portability of paragliders may necessitate further rules.

22 HANG GLIDING SAFETY STANDARDS

22.1 Purpose

The purpose of these standards is to insure a certain minimum level of structural integrity and pilot safety in hang gliders of classes 1, 2, 4 and 5.

In general hang gliders should comply with the load test certification standards of, the HGMA, BHPA or DHV, or similar testing body.
Where dimensional limits are applied to structures, these have been chosen such that adequate strength is achievable with materials currently in use.

Reduced strength due to use of unconventional materials meeting these dimensional limits is the competitors responsibility. Where relevant the conventional material is stated.

These standards override the certified configuration of a glider.

22.2 Structural limits

22.2.1 Structural Cables

Minimum diameter of any structural external wire cables is 1.9 mm or 5/64 inches.

22.2.2 Wire Attachment Points

Where an external compression strut is braced with rigging wires they must attach within 10cm of the point were the compression load is applied.
Side-wires shall attach to A-frames at no more than 10cm above the plane of the control tube, measured when the glider is resting on a horizontal surface.

22.2.3 Control Bars

If a control bar is made of materials other than metal, it must have an internal steel rigging cable that serves as a structural backup. If a non-metallic base tube (control bar) does not show clear evidence of an internal rigging cable (end pins or vibration when tapped) the manufacturer pilot must supply a manufacturer's affidavit verifying the presence of a cable in the base tube.

22.2.4 Pilot Suspension Systems

The pilot suspension must include a non-metallic load bearing material of minimum 50 mm2 cross-section area (normal material Nylon woven webbing with 1000kg breaking strain). The attachment loop must have a backup, which bypasses any mechanical devices and either the main, or backup must be non-metallic. If an integral (one piece) harness suspension/hook-in system is employed, the backup may have a mechanical link which allows it to loop around the keel and attach to itself independently of the primary system.

22.2.5 Rescue Parachutes

A rescue parachute must be capable of deployment by both the right and left hand of the pilot in a normal flying attitude.

Explanatory Notes:
References to compression struts and rigging wires refers to the loads placed on parts of a glider by flight stresses. Gliders with cantilevered wings do not apply compression loads to the uprights, while in general, Class 1 gliders do have uprights which are under compression in flight.
Control cables are not deemed to be structural.
Any external part of the glider which has compression loads placed upon it during flight is an "external compression strut", and therefore bracing wires attached to it shall conform to these rules.
Where the terminology or definitions which are used in these rules are in question with any particular glider, the relevant protest committee will provide a ruling.

23 SOARING COMPETITION

23.1 Flight verification

Soaring competition is scored using the RACE scoring program with GAP 2000, OzGap, or GAP 2002 formulas. Explanation documents for these formula are available separately from the FAI office or from the Internet.

Photographic evidence of an advanced position on course will not be accepted as a "landing position". However, when an approved GPS flight verification (Chapter 20) system is being used, this evidence can be used to claim a pilot's best position on course as the pilot's finish of the flight (landing position).

In championships, verification of the landing place may be made from a GPS track log as evidenced by an approved GPS flight verification system. See chapter 20.

FAI Photo Sector. The photo sector is a quadrant (90 degree sector) on the ground with its apex at the turn point. It is orientated symmetrically to and remote from the two legs of the course, which meet at the turn point. For championships, the radius of the quadrant is 1 km. In championships the Director may vary the sector to lie between two unmistakable linear features on the ground provided that the sector is not extended beyond 150 degrees. If possible the turn point should be one specific corner of a square or rectangular building. In any case it must have a vertical feature. Rules for GPS verification sectors are found in Chapter 20.

The photograph may be taken from higher or lower than the turnpoint provided the turnpoint is clearly visible in the picture.

24 PARAGLIDING LANDING ACCURACY

24.1 Objective

The first objective of an FAI 1st Category competition is to determine World or Continental Individual and Team Champion in Paragliding Accuracy Landing

24.1.1 The Winner

The winner of each category will be the individual or team with the lowest aggregate score, where appropriate.

24.2 Eligibility

24.2.1 Pilot

Entry is open to all members of their respective NAC who hold:

- FAI Sporting License that covers Paragliding,
- National paraglider pilot's licence,

Pilots have to be able to demonstrate their ability to take off in all wind and weather conditions that fall within the operating limits (according to take off method determined in local regulations).

24.2.2 National Team

The minimum team size in a paragliding accuracy competition shall be at least 5 pilots. Team size will be defined in local regulations.

24.2.3 Paraglider

The competition is open to all Class 3 Hang gliders (1.4.1.1).

24.2.4 Personal Equipment

24.2.4.1 Rescue Parachute

The Local regulations will define if a pilot is required to carry a rescue parachute.

24.2.4.2 Footwear

The heel and the tip of competitors' shoes should be made of a material and shaped in a way that it cannot damage an automatic measuring device.

24.2.4.3 Radios

Teams are allowed to have one radio transmitter for each competing pilot and one for the team leader. Radio transmitters are allowed for reasons of safety and for communication between the team leader and his pilots. Radios are not to be used for the purpose of providing advantageous competitive information, e.g. weather conditions at the target. Radios or other communication devices are not to be used during competition flights, unless otherwise allowed in Local Regulations, other than for emergencies at which point the competition flight is deemed to have been aborted. Permitted safety frequencies shall be specified in the Local Regulations.

24.3 Site and equipment

24.3.1 The Target

24.3.1.1 Location

The location of the target must allow landing from any direction. Positioning of the target will be at the discretion of the Competition Director (who could be advised by CIVL Steward). The target may be relocated between rounds, but not while a round is in progress.

(Guideline for target setting: - hill launch: a ratio between projected distance and height difference (take off area - target) shall be at a maximum glide ratio of 5:1; the minimum height difference is to be 200 m.)

24.3.1.2 Measuring Device

The centre of the target must be an automatic measuring device with a dead centre disc of 3 cm in diameter in a contrasting colour, preferably yellow on a black background. The automatic measuring device must be capable of measuring to a minimum distance of 15 cm in increments of not more than 1 cm. The device must be set on a solid base plate. It must be fixed and kept as flat as possible at the level of the measuring field.

24.3.2 The Measuring field

The Measuring Field shall be a flat area where competitor's scores are measured. It is represented by a clearly marked circle with the automatic measuring device in the centre. Clearly marked circles must be set at 0.5 m, 2.5 m, 5 m and 10 m radius, centred around the dead centre.

24.3.2.1 Size

The minimum radius of the Measuring Field is shall be 5 meters.

24.3.2.2 Construction

The Measuring Field should be of such material (grass, sand, carpet etc) that allows judges to define a pilot's first ground touch (Landing point; GS, A12.5). The Measuring Field has to be at the level of the field where it is located.

24.3.2.3 Limitations on Access

The Chief Judge or Event Judge will determine the area around the measuring field that will be restricted to Duty Competition Officials only (this shall be a minimum 10 m radius from the target). The border of the area shall be marked.

24.3.3 Wind Direction Indication

A high visibility windsock and wind direction indicator will be located in the vicinity of the target area and located a minimum of 5 m above ground level.

24.3.4 Wind Speed Recorder

The wind will be recorded within 50 m of the target with the measuring sensor positioned between 5 m and 7 m above ground level. . In the case of a malfunction of automatic wind measuring equipment, the judges may revert to the use of mechanical instrumentation, which is located at a minimum of 2 meters above ground level for the completion of the competition.

24.3.5 Meteorological information

Meteorological information on each competition day must be provided at the team leader's briefing. Information should also be posted on launch and/or the information board.

24.4 Competition

24.4.1 Number of Rounds

There shall be a maximum of twelve (12) full rounds completed within the time available. A minimum of three (3) valid rounds must be completed to validate a competition.

24.4.2 Practice Rounds

There shall be at least one training round made before the competition, if weather permits.

24.4.3 Validation of Rounds

The results obtained in any round will count towards individual and team scores only when a round has been completed (i.e. when all of the competitors have received a score or a penalty). In the event of a break in the competition in the middle of a round, the competition will be resumed from where it left off.

24.4.4 Contest Numbers & Flying Order

Teams will be drawn at random to determine flying order. Each nation's team members will be allocated a number 1, 2, 3, 4, 5.....in accordance with the information stated in the entry form.

Based upon the teams' flying order, determined by the draw, each pilot will be allocated a flight order/contest number such that: all the number 1s from each team fly first, followed by number 2s, 3s etc.

All pilots are required to display their contest numbers prominently on their helmets. Wings shall be marked using a suitable method to ensure each can be individually identified.

24.4.5 Take off

Competitors must fly in the published flying order according to their contest numbers, unless they have prior permission from the Launch Marshal.

- Competitors not ready to fly in the established flying order when called forward by the Launch Marshal or those who launch without the Launch Marshal's permission, will be liable to a maximum score penalty in lieu of their score for that round.
- Take off / launching time sequence depends on local conditions and wings' performance levels.

24.4.6 Wind dummies

Wind dummies must be used at the start of each competition day and after significant periods of stand down. This period will be defined in the Local Regulations. Wind dummies must attempt to land at the target, because their performance will provide pilots with information on weather conditions.

24.4.7 Pilot separation

Pilots flying have to separate themselves by height to ensure safe and unobscured landing at the target. Overtaking at low altitude above the target (AGL) is not allowed and may lead to maximum score penalty; it may be regarded as dangerous flying conduct (5.20.1).

24.4.8 Signalling reference

The official signal for pilots in the air to fly away from the target for safety reasons is that a person or persons at the Measuring Field will clearly wave a red signal flag.

24.4.9 Definition of Final Approach

The Competitor is deemed to have started the final approach when, having turned to face the target, the event judge considers that the competitor has made his final commitment to making an approach to the target and is not expecting to have to make any significant changes of direction. Any further manoeuvres undertaken by the competitor from this position will not detract from the above factor.

24.4.10 Re-launches

A competitor may only request a re-launch following the disputed flight by applying to the Event Judge at the target before signing for their score. The competitor must register their request for re-launch with the recording judge before communicating with any other person (with the exception of the Chief and Event Judges).
At the time a re-launch is awarded the competitors score for the disputed flight will be cancelled. Re-launches shall take place at the end of the full round in which they were awarded.
If a relaunch is not awarded and the pilot refuses to sign for the score this will be deemed to be a complaint and the time at which the complaint arose will be recorded and notified to the pilot, or during the round at the discretion of the Meet Director.
A re-launch may be awarded only for the following reasons:

- The wind speed exceeds the specified limit during the time of 30 seconds before the competitor touches the landing point. The competitor will be automatically offered a re-launch. The competitor may choose to accept the score achieved or accept a re-launch. The competitor must make a decision immediately.
- The target is obscured during a competitor's final approach.
- The judges fail to reset the automatic measuring device.
- The competitor changes his flight plans for safety reasons to avoid another competitor in the air, and does not then attempt to land on the target.
- If there is any significant external distraction which demonstrably affects the competitor's target approach.
- At judges' discretion on the grounds of a technical problem. This may be a failure with equipment (e.g. a broken steering line or a big tuck during the flight) which is not a result of the pilot's poor pre-flight check. A re-launch may be authorised provided that the pilot does not attempt to fly at the target.

24.5 Limitations

24.5.1 Wind Speed

The maximum permitted wind speed for the purposes of competition scoring is 7.0 m per second. If it is deemed likely that the wind speed will exceed 7.0 m per second during a competition flight, the competition will be halted until the wind has eased sufficiently. The upper winds, which are not measurable, are not taken into consideration.

24.5.2 Target Obstruction

The competitor will be entitled to unobstructed visibility of the target during the final approach.

24.6 Scoring

24.6.1 Method

Competitors will be scored on the distance in metres and centimetres between the landing point (i.e.the first point of ground contact) and the edge of the dead centre disc. The score shall be 0.00 m, if the landing point is at the dead centre disc.

- If the competitor lands outside the measuring field he scores a maximum score, which is the measuring field radius.
- Landing has to be made on feet. Falling is not allowed. If a competitor falls at landing, he scores a maximum score. Falling means: if any part of the body or equipment (appendage, which includes any part of the harness) except the feet touches the ground before the wing does.
- If a competitor lands with both feet together or lands in such a manner that the foot's first point of contact cannot be defined (heel, tip…), then the furthest point of the footprint is measured.
- A pilot who is not present at launch will be marked ABS in the results for that round and a maximum score will be recorded.
- A pilot who is present but did not fly will be marked DNF in the results for that round and a maximum score will be recorded.

24.6.2 Automatic Measuring device

Scores up to minimum 15 cm are measured by the automatic measuring device. A certain pressure must be applied by the competitor to the automatic measuring device to make it record the score. If an automatic measuring device is found to be defective or not reset and the first point of ground contact has been on it, judges measure that pilot's score manually.

24.6.3 Individual Scores

The score of an individual shall be the aggregate of all the scores achieved by that competitor. When five (5) or more valid rounds are completed, the worst one (1) individual score is dropped.

24.6.4 Team Scores

The Nation's team score for each round will be calculated as the aggregate score of the best five of the scores achieved by members of the Nation's team. There is no dropping of the worst score at team scoring. The aggregate of the individual scores of the best five pilots of the team for each round count toward the team score.

24.6.4.1 Small Teams

If any Nation has less than five competitors, then a maximum score will be awarded to the team for each round for each of the five scores for which there is no competitor (e.g. if there are only three competitors then the Nation's score for that round will be the aggregate of the three scores achieved by the competitors plus two maximum scores).

24.6.5 Tied Scores

24.6.5.1 Teams:

In the event of any tie between first three teams at the end of regular competition, all members of each of those teams will have an additional flight, if circumstances permit, and the Nation's team score will be calculated (24.6.4). If any teams are still tied, this will be repeated as required until the tie is broken. In the case of insufficient time, as determined by the Chief Judge, the fly off will be between one nominated member from each team.

24.6.5.2 Individuals:

In the event of any tie between first three individuals both (or all) will have an additional flight, if circumstances permit. This will be repeated as required until the tie is broken. Scores achieved through additional flights can not be dropped.

24.6.6 Validation of Scores

As soon as is practical after the end of a round the recorder will post the scores from the round (with the posting date and time clearly identified) on the main briefing board labelled PROVISIONAL. Any protest with the scores must be lodged within 3 hours of the scores being posted. At the end of the 3 hours from posting the scores the round will be declared as OFFICIAL.

24.7 Complaints and Protests

Complaints and protests will be dealt with according to procedures in Section 7 and General Section.

24.7.1 Video Evidence

The Jury may choose to accept video evidence as an aid to decision making. Such acceptance shall not create a precedent for subsequent protests.

24.7.2 Protest Fee

This will be stated in the Local Regulations.

24.8 Judging

This is a Judging code for judges at FAI 1st category Paragliding Landing Accuracy competitions,.

24.8.1 Judging team

A Judge is an official who is qualified to observe, mark and measure the performance of a competitor. Judges must have a character of high integrity and must be capable of making fair and unbiased decisions.

24.8.1.1 Composition of Judging Team

The full Judging Team shall consist of the following:

- Chief Judge
- Event Judge
- Three Fichet Judges
- One back Judge
- One front Judge
- One Recorder
- One Wind Monitor

Besides the Chief Judge and the Event Judge, there will ideally be a total of seven members plus a minimum of two reserves to allow for rotation of duties and relief. The judging team can be from any nation but there must be at least two nations represented in the judging team at the target at any time.

24.8.2 Chief and Event Judge

The Chief Judge at a Category 1 event shall be a qualified person appointed by the Championships organiser. The Chief Judge will be an experienced and current paragliding accuracy landing pilot. The Event Judge shall be a qualified person appointed by the Chief Judge

The Chief Judge or Event Judge will have responsibility for stopping the Competition if he is not satisfied with the safety aspects of a competitor's approach, wind limitations, or obstructions in consultation with or if requested by the Competition Director.

24.8.3 Judging code

All nominated Judges will be given a copy of this Judging Code, to which they must adhere. All Judges may have their appointment revoked by the Chief Judge if they fail to maintain the standards of this code, or are guilty of misdemeanours during the competition.

24.8.4 Duties of Fichet Judge Team

The Fichet Judge team will consist of three members, positioned at 120 degrees to each other with one judge up wind and approximately on the wind line, within the measuring field.

- The Fichet judges will observe all contacts noting the first point of ground contact of the Competitor.
- If an automatic measuring device is found to be defective and the first point of ground contact has been on it, judges are to measure the score manually.
- If the first point of ground contact is off the automatic measuring device, but within measuring field, the fichet judges will mark and measure the perceived point of ground contact of the pilot.
- In the event that the judges consider that there was more than one simultaneous point of first contact, the farthest point of first contact will be measured.
- Once measured, one member only of the team, who has been nominated as caller, will call the score to the recorder. The score will be repeated back by the recorder.

24.8.5 Front and Back Judge

Front and Back Judge form a two-member team, positioned upwind and downwind and outside the measuring field. They will move slightly left or right of centre if a Fichet Judge obscures their view. Their task is to observe the competitor's body position and ascertain whether the competitor's first point of ground contact is with the left, right or both feet. The will also establish if a competitor fell.

24.8.5.1 Signals

The front and back judges will not signify their decisions orally but by the use of signals as follows:

Left or right leg - Left or right arm, as appropriate, fully extended at right angles to the body at shoulder height. The front Judge will not adjust to the left or the right of the Competitor and will use the arm of the side as it is observed.

Both feet - Both arms extended in front of the body, waist height, hands fully extended, held together palms downwards.

Fall - Left arm above the head.

No observations - Both arms fully extended down in front of the body, crossed at the wrists.

24.8.5.2 Failure to Agree

If two of the judges of the group of judges at the target (Event Judge, three fichet judges, front and back judge) do not agree with the others on the first point of ground contact, a re-launch will automatically be awarded to the pilot in question.

24.8.6 The Recorder

The Recorder will repeat and record on a official log sheet a Competitor's score, which is called by the fichet judge. The score shall be signed by the competitor.

The Recorder will record the start, finish and stand down times of the rounds on the log sheets.

24.8.7 The Wind Speed Monitor

The Wind speed monitor is a person observing the wind speed in the period of 30 seconds before a landing by a competitor. If the wind exceeds the maximum value, he/she will record that on the official log sheet provided.

24.8.8 The Event Judge

The Event Judge is the team leader of the judging team and is responsible for the smooth running of the target area. He/she will produce a roster of change of duties for short periods to one of the judges and may also take over any of the duties within the target area. He/she is also responsible for observing competitors' separation in the air and during final approach.

If the Event Judge considers that conditions are becoming dangerous, he/she has the authority to temporarily stop the competition after he has conferred with the Chief Judge and the Competition Director. If the Event Judge, Chief Judge and the Competition Director disagree on stopping the competition, the decision is reached by simple majority

24.8.9 Chief Judge

The Chief Judge is responsible for the following

- Ensuring that correct judging standards are maintained by all members of the judging team.
- Assembling and briefing all judges prior to the commencement of the Competition.
- Ensuring that all required equipment is available and in working order.
- Attending all briefings of competitors and if necessary giving his/her own briefing to competitors.
- Ensuring that at any time at least two nations are represented in the judging team at the target.
- Keeping a record of the judges and their duties during the competition..
- Conferring with the Competition Director as soon as a request has been made to temporarily stop the competition.

The Chief Judge will not interfere with the running of the target area unless it is considered that the Event Judge is not in full or proper control. In certain circumstances, i.e. lack of a full judging team, the Chief Judge may stand in to take over the duties of the Event Judge as a temporary measure.

25 SHORT COURSE SPEED EVENTS

26 ADVICE ON PREPARING A PROTEST

The current version of the CIVL Jury & Steward Handbook contains comprehensive instructions on the procedures involved when a protest is submitted at a 1st Category championship. These notes are intended as a guide to team leaders or individuals preparing protests.

26.1 Hierarchy of Rules

This will be:

- FAI General Section.
- Section 7, i.e. this book.
- The Local Regulations.
- Any supplementary notices issued subsequently which may have had an effect upon the published rules.

26.2 Procedure

Prior to submitting a protest you must have sought redress of the problem by means of a complaint to the Meet Director. If your complaint is resolved the procedure stops there, if it is not you may proceed to a Protest and the deadlines for these are specified in the Local Regulation, together with the protest fee. The Meet Director should note the time that a protest is presented to him and pass it to the Jury President without delay.

Protests are submitted by a pilot's team leader on his/her behalf. This is the case even where a team leader may not agree with the protest. If the pilot has no separate team leader he/she may submit the protest personally.

Each protest must be in writing, in English and be accompanied by the protest fee. If the protest is upheld the fee will be returned. It should be headed with the Championship title and the name and nationality of the protestor.

It should be clear what the protest is against e.g. against a decision that the pilot infringed a rule (or rules) or against the penalty awarded for that infringement (points deduction, zero score, DSQ etc. It may not be just a general complaint against the organiser.

It may be that both of the above are protested e.g. "I protest against the decision that I infringed Rule ##. In addition I believe the penalty awarded to be too severe if I had infringed that rule".

The protest should state what redress the protester wants and which rules he/she believes are relevant.

The protest should finish with signature, date and time.

If the protest is against more than one thing the reasons, explanations etc. should be kept separate so as to assist the Jury. For each element of the protest the following should be stated (where applicable):

(a) The reason you believe the decision or penalty is wrong (quoting Rule numbers if they support the case). E.g. it may be that you believe another pilot has been treated differently in similar circumstances.
(b) Any witnesses you believe will support your version of events.
(c) Any mitigating factors.

Where possible you should submit written evidence from any supporting witnesses with your protest.

The jury should deal with the protest as soon as possible. This may involve interviewing witnesses, obtaining evidence form the Meet Director, other officials and the Steward. Since the competition has to continue while this is going on people may be seen separately. The jury may announce their decision at the end of hearing the evidence or may consider matters further on their own before reaching a decision. When a decision has been made it will be put in writing, signed by all jury members and copies made for the jury members, the Meet Director, the protestor and the official notice board.

27 THERMALING RULES AND TECHNIQUES

It is apparent from the experience of many pilots and officials at category 1 events that quite a few pilots do not know how to thermal effectively and safely with a large group of pilots. Despite the CIVL qualification requirements for the entry of these events, not all countries teach proper technique and etiquette, or may not know the universally accepted procedures. In order to enhance the safety of competitions, these rules are presented, which must be read and understood by all pilots entering CIVL sanctioned competitions.

27.1 Aggressiveness

One of the biggest problems in competitions with many pilots is the over-aggressiveness of certain individuals. Over-aggressiveness in crowded skies can lead to mid-air collisions, which can lead to fatalities. Nearly every pilot in a crowded thermal would like to circle tighter to better use the core, but it is impossible to do so without a great disruption of the entire circling group. A pilot that makes close passes to others or avoids clearing all turns endangers everyone, and risks the anger of his fellow pilots which may cause later confrontations. An overly aggressive pilot ultimately hurts his or her own long-term competition results.

Competition directors are required to deal with overly aggressive and unsafe pilots in the following manner: The pilot should be given a warning as soon as a confirmed report of the pilot's dangerous behaviour is presented. If the pilot doesn't stop the dangerous behaviour immediately, the pilot must be removed from the competition.

27.2 Entering a thermal

27.2.1 First rule

The first rule of entering a thermal is to turn in the same direction as the pilots already in the thermal (either clockwise or counter clockwise). This rule holds strictly even if the thermal is entered well above or below the previous pilot(s). The reason for this last point is that often, lower gliders will climb more quickly and may eventually be at the same level as the higher gliders. Also, in crowded skies it is common for many pilots to join a thermal and pilots coming in between two pilots turning different directions will not know which way to turn. Often this factor results in several groups of pilots at different levels turning in different directions. When these groups merge, chaos and endangerment occurs.

So it must be stressed: Always enter the thermal in the same direction as a previous pilot no matter what the height separation. Often pilots have a turn direction preference, which induces them to turn opposite to the direction already established. Pilots with such strong preferences should not enter a competition until turning to the undesirable side is practiced to the point that the pilot is able to automatically turn in either direction.

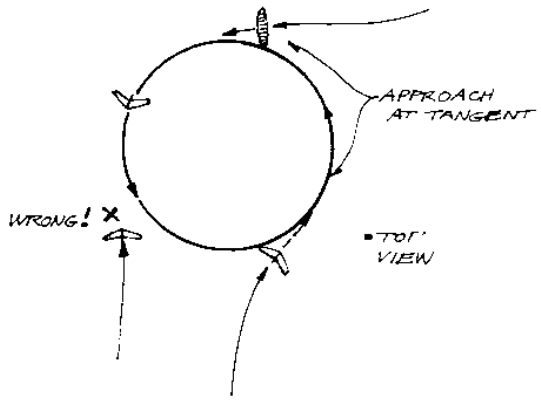

Figure 1 – Entering a Thermal

Which way should a pilot turn when entering a thermal in which pilots are turning in opposite directions? This problem is common enough and difficult. If the pilot is closer to one group (above or below), it's best to turn in the direction of that group. A pilot approaching a thermal with other pilots at similar height must circle in the same direction as the first pilots that reach the thermal

In general, if a pilot is midway between an upper and lower group it is best to circle in the same direction as the upper group, as these gliders cannot be seen well. If the lower group climbs more quickly, these gliders can be easily seen and the turn direction reversed if required. Do not wait until they are at your level to reverse, since it may result in a mass confusion as some pilots change direction and others don't. Besides, the reason they are climbing up to you may be that their turn direction is more efficient due to a rotating thermal.

27.2.2 Second rule

The second rule for entering a thermal is to approach the thermal tangentially to the other glider's circle on the side where he or she is flying away from you. This procedure allows a simple turn to be made to follow the previous pilot's circling path even if both pilots are at the same level (see figure 1).

Approaching a thermal circle at any point other than the tangent (where the joining pilot's flight path just touches the circle diameter) is *extremely dangerous*. Pilots doing so are guilty of inducing confrontations and possible mid-air collisions.

Never fly through the middle of a thermal circle.

It is ideal to arrive at a thermal circle when the pilot already circling is on the opposite side of the circle. The pilot who has established the circle must be watched to see where the tangent point is on the side of the circle being entered. By watching the pilot for two or more 360-degree turns as the thermal is approached, a suitable entry point can be determined and the entering pilot can safely join the circling pattern.

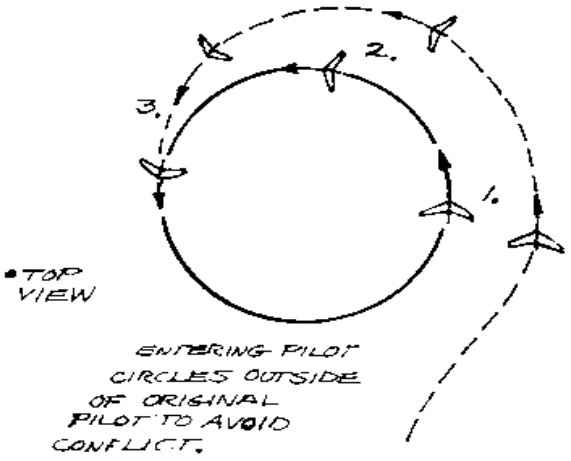

Figure 2 – Avoiding Conflict

Sometimes the circle is reached when the circling pilot is on the entry side of the thermal. In this case, the approaching pilot should circle on the normal side, but further out from the centre to give the other pilot room to continue to circle with no variation in the established pattern. The entering pilot should then start circling in the same direction with a bigger radius as shown in figure 2, which will soon allow room behind the other pilot so that the ideal path can be joined by tightening up the turn. Naturally, the pilot already circling should maintain a regular circle, both so the other pilot can judge where to be, and to maintain the core position. Cooperating in this manner is what the top pilots do in order to fly more efficiently and assure safety.

27.3 Multiple Cores

Quite often multiple thermal cores exist in close proximity to one another. This feature presents a real problem in crowded skies, because these cores often merge as the thermal rises higher. In this instance, when a good core is encountered as a thermal climb is approached, which way is it best to turn? There are benefits and problems relating to turning in either direction. If the turn direction of the nearby circling pilot is adopted, it is possible to enter the established circle simply by making a wider turn as the other core comes closer. On the other hand, the turning gliders will be approaching head-on at the near part of the circle as the cores merge (see figure 3).

If the approaching pilot chooses to circle in the opposite direction, there is not as much head-on confrontation, but the pilot must do a full turn reversal to join the other circle as the cores merge. If other pilots have joined the new circle, this turn reversal can create great confusion and potential conflicts. For the latter reason it is recommended to turn in the same direction as other pilots in a nearby core.

Often thermals can be broken with light multiple cores appearing for a few turns then disappearing. This situation may be a result of weak heating, wind or an inversion layer. When a group of pilots are trying to work such conditions, conflicts can result. Generally, the only safe policy is to use common courtesy and good airmanship. If the cores are short-lived, it doesn't make sense to rush around like crazy towards each pilot that tightens up in a better core. All this does is create conflict with other gliders and the erratic pilot will usually miss the core while knocking out the original pilot or lower ones coming up.

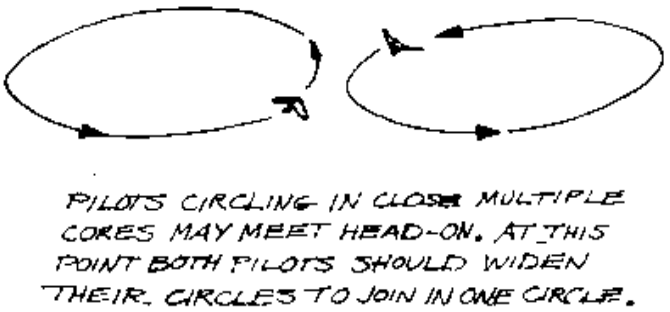

Figure 3 – Multiple Cores

The best policy is to wait until the climbing pilot is clear and enter the core without conflict. That way the entering pilot can tighten up successfully and gain the best climb. Blundering through the group trying to grab everything that is marked will just anger the other pilots who then won't cooperate and will do everything they can to block you're the offending pilot's progress. Remember, overly aggressive pilots ultimately hurt themselves psychologically.

In broken thermals, all pilots should orbit in the lifting area and allow a pilot that hits a surge of lift to tighten up and climb above. That way the crowding becomes less and everyone will have a better chance of getting up. Remember, in such conditions all pilots are your helpers, at least until you get close to goal. The weaker and more rare the lift, the more you need other gliders around to cover more area to find thermals. If you play the game of forcing others out of the lift you find yourself alone in an often fruitless hunt for lift.

27.4 General Rules

When a pilot is thermaling in a crowd, the main rule is to maintain constant awareness. That means looking around continuously to avoid conflicts. You must look to the outside of your turn as well as inside, for often gliders outside of you get forced inward or circling path get offset. Do not get confused by the mass of gliders above or below you. Focus on the ones at your level and a bit above and below.

The second important rule is to maintain a regular, predictable turning circle. Try to keep the same radius turn without varying it so other pilots know where you are going to be as they come around each time. Some pilots get fearful as the crowd increases and they flatten out their turns. This results in a reduce climb rate for everyone and even more crowding as more pilots end up at the same level. Maintain as tight a turn in the core as possible for maximum climb so pilots get spread out vertically, not horizontally.

Two pilots on the same level can work together very nicely at quite steep banks. To do this, maintain a constant bank and remember, as long as you can't see the other pilot he or she has either climbed above you or is on the exact opposite side of the circle and you will not hit. If you flatten out you may end up with a conflict. Three pilots can also work together in this manner if each pilot is very careful to keep a regular circle and the lift is smooth. Four pilots at the same level are too many for the efficient use of most cores.

Be aware of the fact that it always appears that the other pilot is going around your circle. This visual mirage makes you think that the other pilot is turning flatter than you. Don't make this perception error and flatten out or you'll cause conflicts. The only way to tell who is turning flatter is to see who catches up to whom. If you are catching up to the other pilots, you are turning more steeply, and vice versa.

Many pilots use techniques of quickly altering their turns when surges of lift pass through. This practice is overly aggressive in very crowded situations and will eventually get reported with a subsequent penalty. No pilot has the right to endanger others for his or her gain. Pilots should study available publications regarding thermal techniques and thermal procedures.