

FEDERATION AERONAUTIQUE INTERNATIONALE
COMMISSION D'AEROSTATION DE LA FAI
FAI BALLOONING COMMISSION
CIA



COMPETITION OPERATIONS HANDBOOK

Version 2007

Effective date April 2007

Secretariat of FAI

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INTRODUCTION

This handbook is written to be used in Hot Air Balloon competitions. The details of this handbook will not fit all kind of AX competitions or all sizes of events. However, the philosophy of the handbook is to operate a 'Safe and Fair' competition, deliver knowledge and experience to organisers around the world.

UPDATE RECORDS

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|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| March 1994 | The Scoring Working Group decided to edit the 'Scoring Handbook'. |
| March 1996 | The First draft (version 1.5) was submitted to the CIA plenary |
| July 1996 | The Scoring Working Group decided to change the name of this document to 'Competition Operations Handbook' |
| February 1997 | The draft version 2.0 were submitted to Working Group members. |
| March 1997 | The draft version 2.1 was submitted to the CIA plenary and was authorised as one of the CIA official manuals. |
| March 2001 | Version 1/2001 was submitted to the CIA plenary and was authorised as one of the CIA official manuals. |
| March 2003 | Version 2003 was updated as result of CIA plenary decisions. New are the Penalty Guide and GPS-Logger procedures. |
| March 2004 | Version 2004 was updated as result of CIA plenary decisions. New are the Chapter 12 Weather Information, a standard Weather Information Sheet (appendix) and a list of recommended standard penalty description wordings for Task Score Sheets (appendix). The AXMER have changed this year, be reminded that the Penalty Guide is unchanged and may not apply to changed rules. |
| March 2005 | Version 2005 was updated with mostly editorial changes. Appendix 'Report on the Use on GPS loggers' was removed and given to the Tracking WG. It was agreed that policies and procedures would be under the umbrella of the SWG and information and study publications would be published by the Tracking WG. |
| March 2006 | Most importantly the FAI/CIA Plenary decided that the COH becomes a mandatory document. This recognises the validity and importance of this document. Version 2006 has the following minor changes. Folding of a target at the end of the scoring period is no longer a recommended procedure and the PG (Penalty Guide) now advises to no longer apply the 250ft warning zone but to apply penalties for all infractions of blue PZs. |
| March 2007 | The COH was checked in its entirety and some editorial changes were made. Target teams procedures were added and it was decided that the COH is the place where all physical dimensions of competition equipment is covered. The PG provides important guidance for collision penalties. |

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CHAPTER 1 MARKER CONTROL**1.1 MARKER MANAGEMENT**

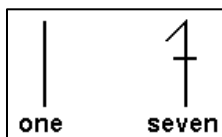
1.1.1 Standard Competition Marker (Appendix A)

Information refers to the AX-MERs (Model Event Rules)

1.1.2 Numbers should be written at the end of the streamer. The numbers shall be written clearly with water-resistant ink and in a way to avoid confusion.

Note: The following numbers shall be written with an underline.

1	2	3	4	5	<u>6</u>	7	8	<u>9</u>	10
11	12	13	14	15	<u>16</u>	17	<u>18</u>	<u>19</u>	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
<u>61</u>	62	63	64	65	<u>66</u>	67	<u>68</u>	<u>69</u>	70
71	72	73	74	75	76	77	78	79	80
<u>81</u>	82	83	84	85	<u>86</u>	87	88	<u>89</u>	90
<u>91</u>	92	93	94	95	<u>96</u>	97	<u>98</u>	<u>99</u>	100



One and seven should be written as in the graphic.

1.1.3 Markers should be rolled and fastened with a rubber band with the numbers showing.

1.1.4 The Chief Debriefer will appoint a marker controller from amongst the Debriefers.

1.1.5 Spare Markers

It is recommended to prepare spare markers without numbers. The quantity of spare markers should be around 10 % - 20 % of the number of competitors.

1.2 MARKER ASSIGNMENT

1.2.1 The use of bright coloured markers is recommended for evening tasks when there is a possibility that searching will take place after sunset.

e.g. bright yellow, orange or pink

1.2.2 When two or more markers are to be used in a single task flight make sure the colours contrast and cannot be confused.

not recommended blue and green
 dark blue and light blue
 pink and orange
 recommended pink - blue - grey
 yellow - light blue - purple

Markers of the same colour shall not be used for different tasks in the same flight.

1.2.3 To avoid confusion over goals declared on markers in previous tasks, any set of markers should only be used once in a Fly On Task. Use light coloured markers for Fly On Tasks as it is easier to read the declared co-ordinates.

1.3 MARKER DELIVERY

1.3.1 Markers should be put on competitors tables (or chairs) in the Task Briefing Room, 10 minutes before the beginning of the Task Briefing.

1.3.2 Markers for competitors not answering the roll call should be picked up as soon as possible by the assigned observer. These markers should be kept in the Competition

Centre.

- 1.3.3 The competition number of non-entered competitors shall be displayed at the Debriefing Room and brought to the attention of the Event Director, Chief Scorer, Chief Observer and Chief Debriefeer.

1.4 MARKER RETRIEVE

- 1.4.1 An observer shall return all retrieved markers to his debriefer.
- 1.4.2 Debriefers must check the return of markers when debriefing the Observer. All lost or not found markers shall be reported to the Chief Debriefeer.

1.4.3 Cancellation of Task

When a task is cancelled, make sure that a procedure for collecting the markers from competitors is established. This procedure should be announced to the Observers and Competitors during the Task Briefing. A recommended way is that Observers collect the markers from competitors and bring them back to the Competition Centre or Chief Observer.

1.5 MARKER STORAGE

- 1.5.1 Returned markers must be sorted by numbers and checked for damage.
- 1.5.2 If a marker is missing, check the Observer Report Sheet, where its loss should have been reported. If not reported, inform the Chief Debriefeer. All missing or lost markers must be reported to the Chief Debriefeer.
- 1.5.3 Lost markers should be replaced. The replacement marker should be correctly numbered and marked with an 'R' to indicate that this is a replacement marker.

1.6 MARKERS

- 1.6.1 Information refers to the AX-MERs (Model Event Rules) and may not be changed.

Weighted part	10 cm x 10 cm	70 grams
Streamer	10 cm x 170 cm	approx. 7 grams
total length and weight	10 cm x 180 cm	approx. 77 grams

Note: Usually markers are made from "rip stop" nylon. They should be cut with a heated cutter to prevent fraying of the edges.

- 1.6.2 It is recommended to print on the streamer information to the general public in local language in case the marker is found by anyone outside the competition. This information should state that the marker is an important competition device and should not be removed and if removed and taken, the finder should call a certain telephone number. E.g. "Important competition device in hot air balloon competitions. PLEASE DO NOT REMOVE. If found or inadvertently removed please call". A way to achieve this is by having a rubber stamp made with the above text and stamp each marker with that stamp with water-resistant ink.

- 1.6.3 Markers may be marked with the name of the Event or Sponsors etc.

- 1.6.4 Approximately 40 cm must be reserved at the tail end for goal declarations. Alternatively a peace of flexible plastic may be stitched on the tail end for marker declarations. Declarations can be easily removed from this with alcohol and the marker can be used in subsequent tasks requiring declarations.



1.7 LOST MARKERS

- 1.7.1 According R12.15.3 of both AXMERs, competitors may be required to pay for markers lost, stolen or not brought back. This Rule is intended to deter competitors to drop Markers in 'hopeless' areas and then not bringing them back. Generally the prices should be roughly three times the actual price. In 2007 a price of 20Euros or 25US\$ per marker is considerate appropriate. The debriefer should keep the money in a safe place and keep a list of who paid what. At the end of the event the money should be handed over to the Organisers when handing back all other competition material.

CHAPTER 2 SIGNAL CONTROL**2.1 SIGNAL FLAGS**

- 2.1.1 The meaning of signal flags is described in the MERs. For dimension and colours see Appendix A.
- 2.1.2 The use of an audible signal is recommended to draw attention to the raising and lowering of signal flags.

2.2 FLAG POLE STAFF ASSIGNMENT

- 2.2.1 One or more flagpoles will be erected on the Launch Area. In case of multiple flagpoles, one will function as the Master Flagpole and the others as Slave Flagpoles. Each flagpole will be staffed by at least two officials. The Event Director will be at the Master Flagpole.
- 2.2.2 Officials are briefed about scheduled times of raising flags before entering the area. However, the schedule may be changed at the discretion of the Event Director.
- 2.2.3 The Event Director is responsible for all flag signals, and will issue his instructions by radio when available.
- 2.2.4 When radio communication is not available or breaks down, the officials staffing the Slave Flagpoles shall flag the signals according to the signals flagged at the Master Flagpole.
- 2.2.5 The Officials shall ensure that their time is in agreement with the time check at the Task Briefing.

2.3 LAUNCH PROCEDURE SIGNALS

- 2.3.1 **TIMING AND AUDIBLE SIGNAL**
It is recommended to change the signal flags, marking the launch period, at five minutes periods (e.g. 06:00 or 06:05 or 06:10 etc) and blow the audible signal sharp at these times.
- 2.3.2 **BEFORE LAUNCH PERIOD**
Red flag(s) will be displayed immediately after the end of the Task Briefing.
- 2.3.3 **FIVE MINUTES WARNING**
Yellow flag(s) will be raised, five minutes before the beginning of the Launch Period. The red flag(s) will be lowered.
- 2.3.4 **START LAUNCH PERIOD**
Green flag(s) will be raised. Yellow flag(s) will be lowered.
- 2.3.5 **FIVE MINUTES WARNING**
Yellow flag(s) will be raised, five minutes before the end of the Launch Period. The green flag(s) will be lowered.
- 2.3.6 **END LAUNCH PERIOD**
Red flag(s) will be raised. Yellow flag(s) will be lowered.
- 2.3.7 **LAUNCHING IN WAVES**
If the competitors need to be launched in waves, the Blue and White flags shall be used instead of the Green flag. Launching in waves should be performed only when absolutely necessary, because it might reduce equal opportunity between competitors.

2.4 SIGNAL POINT

- 2.4.1 A launch area has one or more signal points depending on size and landscape. A flag pole shall be prepared for each signal point. The flag pole shall be capable of carrying a minimum of two flags at the same time.
- 2.4.2 It may be necessary to prepare a detachable flag pole for unforeseen or remote launch areas. Such a flag pole should be suitable for transportation in vehicle and expeditious set-up.

2.5 SIGNAL FLAGS

- 2.5.1 Signal flags shall be prepared for each signals point. The dimension should be appropriate to the flag pole and the size of the launch area (minimum 50x50cm for small launch areas).
- 2.5.2 According to the relevant MERs, flags in the following colours shall be available. RED, GREEN, BLUE, WHITE, YELLOW, PINK, BLACK, VIOLET.

2.6 SIGNAL HORN

- 2.6.1 According to the MERs an audible signal may be used. It is therefore advisable to prepare a horn or similar device to draw attention when changing flags.

2.7 SUPPLEMENTARY OR AMENDED BRIEFING

- 2.7.1 The Event Director may call for a Supplementary or Amended briefing. The Pink flag will be displayed to announce this as well as an audio signal.
- 2.7.2 It is recommended that a Supplementary or Amended Briefing be held at the Master Flagpole only.
- 2.7.3 The Supplementary or Amended Briefing should start with a roll call to assure all competitors attend. Competitors should be given a reasonable time to walk to the Master Flagpole. The Pink flag will be lowered at the end of the supplementary briefing which will be clearly announced.

2.8 TASK CANCELLATION

- 2.8.1 When the Director decides to cancel the task(s), the black flag will be displayed and other flags shall be pulled down.

2.9 RECALL PROCEDURE

- 2.9.1 The recall procedure to be used shall be announced and explained at the General Briefing.
- 2.9.2 If the Event Director uses beepers for the Recall Procedure, it is recommended that '99999999' will be sent to all beepers under the control of the Event Director when the task is cancelled.
- 2.9.3 A recall procedure must be water proof! That means it should be tried before the event or during the General Briefing. Modern technology changes quickly and new methods can be used provided they have been tested and are working flawless. Specifically SMS seems a good system. Check the coverage, make sure you have a list of all mobile numbers of the competitors and crew, familiarize yourself with the operation or have a responsible person do that for you. The list is also useful to contact competitors for any other reason during the event.
- Not all cell phones/SIM cards work in all countries. Therefore it is recommended to inform the pilots at invitation that they must bring a working cell phone and card. A test should be made at registration and during general briefing. As some pilots always show up without a working phone, the organizer should have some spare devices/cards ready for rental. If SMS messages are used the information shall go to the Pilot and a designated crew member.

2.10 TELEPHONE MESSAGE BOX

- 2.10.1 The ED may arrange a separate telephone message box. He may use it for any purpose as announced at the General Briefing or Task Briefing. During bad weather especially for morning flights it may be convenient for competitors to be informed of a cancellation of the Task Briefing before driving out to the competition Centre. The ED should not cancel any Task Briefing later than 1 hour before Briefing Time. The sooner the better. The best way is to reserve one telephone number for this purpose, speak the message e.g. "*Here is the Event Director. The morning briefing Wednesday 6 June is cancelled. Next briefing Wednesday afternoon at 16:00*" and then switch off the mobile phone and test the message with another mobile phone.

CHAPTER 3 LAUNCH CONTROL**3.1 LAUNCHMASTER**

- 3.1.1 Launchmasters will be assigned out of the group of Competition Officials. It is recommended that they are experienced balloon competitors.
- 3.1.2 One (1) Launchmaster should be in charge of between 6 and 8 balloons.
- 3.1.3 Launchmasters must be familiar with the launching rules in the AX MER and instructions of the Safety Handbook.
- 3.1.4 The launch master, if time permits, should identify him to the pilots he is responsible for launching, before the green flag is raised.
- 3.1.5 The launch master shall report all possible safety violations to the Safety Officer.

3.2 LAUNCH PROCEDURE

- 3.2.1 To have a general overview of all balloons in the air, the Launchmaster should wait outside the perimeter of the balloons until the competitor signals his readiness.
- 3.2.2 When the competitor signals his readiness for take-off with a white flag according to the MERs, the Launchmaster should acknowledge that by pointing at the pilot with the right hand while the left hand remains pointed to the ground. He may give additional instructions visually with his right hand. E.g. move towards me. When the sky is clear to launch the balloon, he will point both hands to the pilot signalling him that Take-Off clearance is imminent. When ready he will move both hands up to clear the competitor for Take-Off. If necessary the launch master can cancel any instructions by crossing his arms before his breast. (See also visual signals in MERs).
- 3.2.3 In the Minimum Distance or the Race To an Area task the Launchmaster will call 'NOW' when he sees the bottom of the basket at normal eye level, to start the timing process with the Observer. If an inflation harness or other similar equipment is in use and under tension, time measurement starts at disconnection.

3.3 LAUNCH AREA PROCEDURES

- 3.3.1 Only one vehicle per competitor is allowed to enter the Launch Area.
- 3.3.2 Watch that all envelopes stay under two meters before the green flag is raised. Fans may not be tested or used after raising the red flag.
- 3.3.3 After a take-off permission is given, competitors must take off within 30 seconds. If a competitor does not take off within 30 seconds, permission to take-off may be cancelled.
- 3.3.4 If a Launchmaster records an infringement, he must report this to the Chief Debriefing Officer on a Supplementary Observation Report form.

CHAPTER 4 DEBRIEFING**4.1 COMMON COORDINATES LIST**

- 4.1.1 Goal co-ordinates in FON or PDG task shall be standardised as common co-ordinates. It means that the result of each competitor who declared the same intersection shall be calculated from the same co-ordinates. If you cannot find the goal co-ordinates in the list of the Common Co-ordinates, these goal co-ordinates shall be added to the list. The Common Co-ordinates List will be distributed to all Debriefers.

4.2 OBSERVER'S ESTIMATED RESULT

- 4.2.1 The observer's estimated result is very important data for debriefing, it enables Scoring officers to verify results calculated by the computer with the estimated results. Make sure not to forget to fill in the estimated result in the Observer Report Sheet. It should be measured with a ruler and not by calculation. Numbers rounded to 100 meters should be accepted.

4.3 DETERMINING MARK, RESULT AND COORDINATES

- 4.3.1 A Debriefer shall inspect drawings produced by an Observer. When direct measurements are not possible, indirect measurements or mark co-ordinates shall be taken. Some tasks require both (e.g. Elbow, Land Run in combination with another task). Preferable rectangular measurements to points clearly identifiable on the map shall be used to establish results or mark co-ordinates. Alternatively or additionally the bearing-distance method may be used. Software or a calculator, help to calculate co-ordinates from the point on the map with bearing-distance. For GPS measurement procedures, see Appendix B.

4.4 OBSERVER INTERVIEW BY THE DEBRIEFER

- 4.4.1 Interview technique is one of the most important skills needed during debriefing. The time needed to debrief an observer is usually less than 20 minutes. However, the duration will depend on the number of tasks in a flight, how complicated the tasks are and what infringements were caused by a competitor. If a task is simple e.g. JDG or FIN, it may take only 5 or 10 minutes. PDG or FON tasks mixed with other tasks, usually take more time, but should be completed within approximately 20 minutes. It is therefore recommended that a Debriefer have previous experience as an Observer.
- 4.4.2 At first, a Debriefer will ask an Observer to indicate the points concerning take-off, mark(s), declared goal(s) and landing on the map. Thereafter the Debriefer will check those grid co-ordinates on the map.
- 4.4.3 Depending on the quality of the map and the instruments used when observing and debriefing, a precision of 50 meters should be possible. When using high quality maps and instruments a precision of 10 meters is possible and should be aimed for, this is also the precision of 8-digit marker co-ordinates. There are several high quality rulers on the market with scales of 1:50 that are very suitable. It is also recommended that Debriefers use needles or sharply pointed indicators to establish points on the maps. Such pointers with small magnifying lenses are available in land surveyor utility shops. Pointing with pens should be avoided because they leave spots on the map that may reduce the precision of measurement.
- 4.4.4 It is the Debriefer's duty to determine whether the observer and competitor took the same intersection as the competitors goal declaration or a wrong intersection. Measurement could be taken from the wrong intersection, the wrong centre point or an invalid goal etc.

Reasons can range from simple misunderstandings to deliberate misleading. In case the Debriefers cannot resolve the problem, they should consult the Chief Debriefers.

- 4.4.5 The time of marker drop and finding the marker, shall be checked carefully to assure compliance with the rule on the scoring period or marker search period.
- 4.4.6 An Observer shall record infringements of his balloon and other balloons on the Observer Report Sheet. The Debriefers will discuss these findings during debriefing and confirm the circumstances. Infringements concerning other balloons shall be noted on the Supplementary Observation Card.
- 4.4.7 The Event Director, after consultation with the Chief Scorer or Chief Debriefers, will decide the amount of penalty for an infringement at a later moment.

4.5 HANDLING OF THE OBSERVER REPORT SHEET (ORS)

- 4.5.1 The Observer Report Sheet shall be filed in a folder arranged by competition number, together with the Task Data Sheet, a record of any information provided at a supplementary briefing, Weather Information, Launch Assignment, Measured results list and if applicable all the submitted Supplementary Observation Cards
- 4.5.2 It is recommended that a Debriefers use a green colour pen and the Chief Scorer or other higher Scoring Officer uses a red one. Therefore an observer shall use black or dark blue coloured pens.
- 4.5.3 After debriefing an observer the Debriefers must clearly write his name on the ORS and sign it. The ORSs will be gathered at the desk of the Chief Debriefers.
- 4.5.4 The Chief Debriefers will inspect the ORSs. When he finds something wrong in the ORS, he will call the Debriefers and request to check again. Sometimes, the concerned Observer will be called for re-interview. To provide for such a case, the Chief Observer must establish a communication system to recall an Observer (room number, phone number, etc.).
- 4.5.5 After checking, the Chief Debriefers will transfer the ORSs to the Chief Scorer.
- 4.5.6 Debriefers must make themselves available for questions about the ORS by the Scoring Officials if an inquiry arises.
- 4.5.7 One of the duties of the Jury is to inspect the above-mentioned process. Therefore clear procedures and proper filing of all competition documents is important. The file shall be made available to the Jury upon their request.

CHAPTER 5 SCORING**5.1 RESULT AND SCORE**

5.1.1 RESULT (AXMER)

A competitors result is the achieved outcome in a task. Results will be expressed in meters, square kilometres, minutes or degrees with an precision of two decimal places. Distance penalties may be applied according to the rules.

5.1.2 SCORE (AXMER)

A competitors score is the number of points achieved in a task when applying the appropriate formulas. Task or competition penalties may be applied according to the rules.

5.2 SCORING SOFTWARE

5.2.1 Scoring software is one of the most important tools. The organiser can use their own software or software made and used by other organisers.

5.2.2 Details about designing, developing and testing scoring software will be published in Appendix C.

5.3 SOFTWARE FUNCTIONS

5.3.1 Basic Functions

- 1) Result- and penalty-data input
- 2) Calculate score points and subtract penalties
- 3) Print scores in ranking order.

5.3.2 Additional functions

- 1) Checking distance infringement against limitation of minimum or maximum

5.4 CHECKING FOR PZ INFRINGEMENTS

5.4.1 Some software is designed to work on a single computer only and some will work with a network. If a network is available, it will save time and work of officials in large events. In networking, the Scorer can input new task results, while others are updating the old task data or printing other results. Of course, such software sometimes needs an engineer for maintenance of hardware or software.

5.5 DATA INPUT

5.5.1 Data Input is usually a simple and easy job. An experienced Scorer however might find logical mistakes in the data on the Observer Report Sheet that was overlooked by the Debriefeer or the Chief Debriefeer.

5.5.2 The Scorer shall after input of the data verify the result with the estimated result on the Observer report Sheet.

5.5.3 After input the data should be checked before the posting of any scores.

5.6 GUIDE LINES OF SCORING SOFTWARE

5.6.1 GENERAL

Scores will be published with three digits as integer, except 1,000 points. It means four digits shall be used to calculate. After calculation with one place of decimal, scoring points shall be rounded to an integer for printing and data storing.

EXAMPLE:

Step 1 If there are 101 competitors in the event, then $P=101$. According the rules,

- M=51 (P/2 rounded up), and SM = 504.95 (medium ranking score using Formula 2).
- Step 2 When calculating the higher ranked competitors, 505 will be used as SM during computation.
- Step 3 After subtracting penalty points the resulting points shall be rounded according R14.4., sorted and printed.
- Step 4 This method might produce more than one competitor achieving 1000, which is acceptable.

5.6.2 CHECKSUM

For each task a checksum shall be calculated and printed at the bottom of the score sheet. The checksum of each task shall also be printed at the bottom of the total score. This enables checking that posted version on the Official Notice Board is in fact the same as the result printed in the totals score. The checksum shall be: the last four characters of the sum of all competitors' scores multiplied by their number. See next chapter for publication instructions.

5.7 BENCH MARK DATA

5.7.1 Bench mark data will be published in an Appendix C.

5.7.2 Organisers shall test their software with these data.

CHAPTER 6 PUBLICATION OF SCORES**6.1 STATUS**

6.1.1 Task scores sheets will have the following status:

- PROVISIONAL
- OFFICIAL
- FINAL.

6.2 PROVISIONAL SCORE

6.2.1 Provisional scores are NOT official and do NOT have any power or consequences for a competitor or officials. They are for information only and for the benefit of competitors and to save time. Provisional scores may not be complete and may not have all penalties. They should be published without signature of the director and marked 'PROVISIONAL'.

6.3 OFFICIAL SCORE

6.3.1 Official scores shall be published as soon as possible after all penalties are included and scores are calculated. When the official score is published, the time period concerning claims and protests will start. The official scores shall have a version number and publication date/time at the bottom. The version number will start with 1. Newer versions will subsequently be marked 2, 3 and so on. All changes in a newer version against the previous version shall be clearly marked. The complaint and protest period starts from the time of latest published version for the competitors concerned by the change only. For all other competitors the complaint and protest period starts from the previous applicable publication time.

6.4 FINAL SCORE

6.4.1 A published official score becomes final when all complaint and protest periods concerning the task have expired, unless a protest or a complaint is filed. The director may mark a final score as such. A final score cannot be changed thereafter.

6.5 TOTAL SCORE

6.5.1 The total score will be the sorted addition of all task scores. The total score will not have a version number and time stamp. The director should publish intermediate total scores as often as possible for information only. A total score cannot be ground for a complaint or protest (provided of course the calculations are performed correctly).

6.5.2 The Jury shall verify and sign the final total scores before they are made public.

6.6 CHECKSUM

6.6.1 The checksum enables competitors and officials to quickly check the status of all score sheets against the total score. In particular it enables a check that the total score is indeed the sum of all published task score sheets.

6.6.2 The checksum shall be displayed:

1. for a task on the task score sheet.
2. for each task on the total score sheet.

CHAPTER 7 PREPARATION BEFORE EVENT**7.1 COMMON LAUNCH POINT (CLP)**

- 7.1.1 In accordance with the competition rules the Common Launch Point (CLP) must be marked on the ground physically before the beginning of competition. The co-ordinates of CLP must be announced at the General Briefing and may be written on each task sheet if needed. There may be more than one Launch Area, in which case each Area should have its own CLP.
- 7.1.2 When choosing the CLP, consideration should be made that this point is also suitable as a goal during FIN or Minimum Distance tasks.

7.2 ASSESSMENT OF THE COMMON LAUNCH POINT

- 7.2.1 Determine the position of the CLP, in or near the Launch Area and mark it with a banner or other suitable material. A road intersection can be used as the CLP.
- 7.2.2 Determine the co-ordinates of the CLP on the competition map. Be sure to check the accuracy between the map and field. The Launch Area may be a huge field and will not have any reference points, which directly relate to the map. In this case the survey equipment or GPS, if available, may be used to accurately measure the co-ordinates of the CLP.

7.3 SELECTION FOR GOAL SITE

- 7.3.1 What type of site is suitable for a goal?

NO power lines

NO livestock

NO crop within 100 meters circle of centre of target

NO main road avoid a field which is connected to a main road

FLAT area for getting accuracy for measuring and for ease of using laser surveying equipment

Of course, those detail conditions may be changed by local area restrictions or wind factors.

7.4 GETTING PERMISSION

- 7.4.1 It is important to obtain permission or authorisation from all landowners or tenants to use their land for goals and target sites.

7.5 TARGET POSITION COORDINATES AXMER

- 7.5.1 When locating targets close to a goal it is important for the measuring team to obtain the distance and direction from the intersection of the roads, that has been designated the goal. Information of co-ordinates of the road intersection will be important for competitors who drop their markers outside the target field.

7.6 TARGET POSITION COORDINATES AXMERG

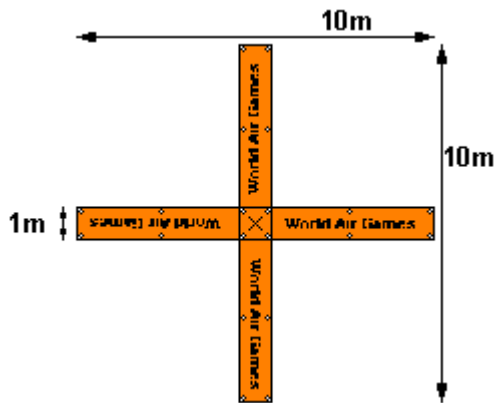
- 7.6.1 Whenever markers are used in logger only events they normally will be dropped at targets announced by the ED in the TDS. These targets are not related to a goal as in conventional AXMER competitions but should be chosen so that an unobstructed approach by balloons is possible and preferable in open cut grass or freshly harvested

fields.

- 7.6.2 The Target should be laid precisely at the coordinates given in the TDS. If not given in the TDS the point coordinates shall be determined and immediately telephoned to the ED only thereafter the Target shall be laid out. When the Target Team has to choose a target position they shall do so in such a way that the whole MSA is free of obstacles whenever possible. The TT shall write down the precise GPS coordinates **and** altitude of the target in the header of the measuring sheet.

7.7 TARGETS

7.7.1 TARGETS

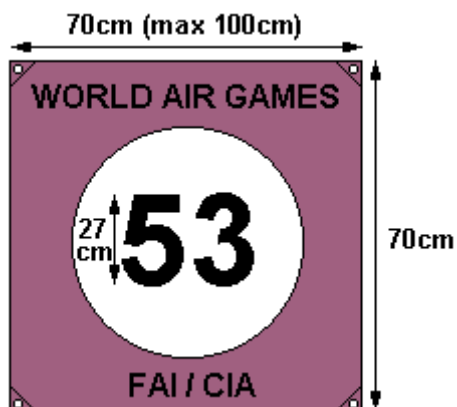


According to the MERs targets may be used. The dimension of targets shall be 10x10x1m. They should be made of non slippery material (rip stop nylon is OK). The colour shall be contrasting to the surface (preferable colours are white and orange). Targets should have rings or straps at the corners to secure them to the surface. The centre shall be marked with a visible "X". The Event and/or sponsor names and logos may be displayed.

- 7.7.2 The amount of targets depends on the size of the Event and tasks to be set. It is advisable to prepare not less than 5 targets.

7.8 COMPETITION NUMBERS

7.8.1 BASKET BANNERS



Two basket banners per competitor shall be made available by the organisers. The dimension of basket banners should be horizontally 70cm (max 100cm) and vertically 70 cm. They shall be made of durable material and provided with reinforced attachment rings in each corner. The competition number shall be clearly visible in the centre with a minimum character height of 27cm. The Event and/or sponsor names and logos may be displayed.

7.8.2 VEHICLE NUMBERS

Two stickers with competition numbers shall be made available by the organisers to be attached on either side of the retrieve vehicle. The size shall be maximum DIN A3 and minimum DIN A5. The Event and/or sponsor names and logos may be displayed.

TOOLS AND EQUIPMENT FOR MEASURING**7.9 MEASURING REPORT**

7.9.1 The measuring team shall have a special report form to report observations of dropped markers. It must contain the following items.

- Title, date, day, time, task name, and location of goal or target.
- For each Competitor his number and name with a column for: distance, time, direction, note or comments.

7.10 BALLOON PICTURES LIST

7.10.1 It is useful for the measuring team when identifying balloons at the goal, to have a list of competitor's balloon pictures, since it is often difficult to read the competition numbers on the basket. Pictures are available from the official program of the event. However, competitors sometimes change their balloon just before the beginning of the event.

7.11 BINOCULARS

7.11.1 Binoculars will help the measuring team to read a competition number of a balloon approaching the target at a high altitude or flying at rapid speed or some distance away. It might also be useful for watching ground contact or collisions.

7.12 MARKER FLAGS

7.12.1 Small marker flags are a good method to be used when measuring markers. These flags will help prevent markers getting lost that landed away from the target. In the afternoon and after sunset it becomes harder to see or find a landed marker, a bright colour is therefore recommended for marker flags.

7.13 SURVEY EQUIPMENT

7.13.1 Survey equipment is very helpful to measure markers that have dropped more than 30 meters from a target. The time to measure the markers with laser equipment can be reduced considerably if more than one reflective mirror is available. The survey equipment is designed to be used by professionals and must be operated by experienced operators. The competition organisers should have a good working relationship with the local survey companies to get their co-operation.

7.13.2 Handheld radios are helpful tools to assure good communication between the operator of the surveying equipment and the helpers walking around with mirrors.

7.13.3 Additional tools and equipment are:

1. an accurate watch, clipboard and measuring report for each member.
2. a target with 20 tags and a hammer.
3. 100 (alternatively 30) meter measuring tape.
4. measuring wheel (if available).
5. circle scale.
6. magnetic compass.
7. display board to display result measured for observers and competitors.
8. mobile telephone or radio to communicate with the Scoring Centre.

CHAPTER 8 OBSERVATIONS AT THE TARGET AREA**8.1 BALLOONS APPROACHING THE TARGET**

8.1.1 One of the most important jobs for the measuring team is to watch the balloons as they approach the target. Because a competitor will be concentrating on getting a good line to the target, there is a chance of ground contact or collision with another balloon. Therefore the measuring team should clear the target by 30 - 50 meters.

8.2 RECORDING OF INFRINGEMENTS

8.2.1 The measuring staff must note any infringements they observe with the time of occurrence, location and estimated distance from the target. There will probably be one or more competition officials present at the target area, who will be watching the balloon's behaviour also. However, the measuring teams records will help in debriefing or scoring.

8.2.2 These Observations primarily include Ground Contact (within or outside 200m of the target), method of releasing of Marker (Gravity or Free) and infractions of the Right of Way Rule or Collision between balloons.

8.3 STAYING CLEAR OF GOAL OR TARGET

8.3.1 It is important that the target area be kept clear while the competitors are approaching and dropping their markers. There should be no distractions to impair the competitor's concentration. Competitors also want to see marker drops by other competitors to compare their results. Great care must be taken by officials not to move or disturb markers that have landed at the target.

8.4 BEHAVIOR DURING MARKER DROPS

8.4.1 Because markers that fall a bit further away can get easily lost if everybody is looking at the close marker drops, the measuring team should divide itself over the drop area and watch all balloons in their assigned area.

8.4.2 When using marker flags they shall be put immediately next to where the marker drops.

8.5 MEASURING REFERENCE POINT

8.5.1 When the Event Director calls a task, he usually knows only the reference of the goal and not the target. The goal for a JDG is normally a road intersection shown on the competition map. However if there is a target associated with the goal it is usually displayed 10 - 200 meters (or more) from the goal. The measuring team must therefore survey the target reference precisely and calculate the co-ordinates of it. Markers dropped far away from the target will be scored to the co-ordinates of the target. Therefore the measuring team shall establish precise co-ordinates of the target.

The co-ordinates of the target must also be reported to the Scoring Officers as quickly as possible. It is better to use a cellular phone to report the co-ordinates.

CHAPTER 9 MARKER MEASURING PROCEDURES**9.1 RECORD MARKER POSITION**

- 9.1.1 Not only close marker drops, but all marker drops shall be closely watched by the measuring team. The measuring team shall immediately mark far away drops with flags to ensure that none of them is forgotten or lost. One or two of the staff members will record time, direction from target, competition number and estimated distance from goal, when a marker lands. A simple sketch of the goal area will make it easier for the team to recall where markers have landed. Timing will be very important if the task has a scoring period or limitation by sunset. It is critical that any timepiece used by the team is precisely synchronised with the GPS time datum. The SWG does not recommend folding up the target at the end of the scoring period because this 'procedure' has the disadvantage of the Target Officials concentrating on this job instead looking out for time critical marker drops and the risk of moving markers dropped on the target before they are measured.
- 9.1.2 The Director may state which markers he hopes the measuring team will measure e.g. those within 50/100/200 metres or those within the field boundary. However it is always the responsibility of the pilot to make sure his marker has been measured.
- 9.1.3 In AXMERG events the Target Team shall measure all markers within the MSA (usually 100m radius). Markers measured shall be recorded in the MS (Measuring Sheet). Pilots and crews shall not be within the MSA without special permission and reason. Markers dropped just outside the MSA shall be measured to avoid discussion with pilots whether they were in or out and be returned by the TT. Other dropped markers outside the MSA may be collected up to a certain distance deemed reasonable by the TT. Competitors have no claim that markers dropped outside will be returned by the TT. The earth is considered flat and horizontal within the MSA and individual marker altitudes need not be recorded, except if needed for other tasks.

9.2 MARKER FLAG USAGE

- 9.2.1 When a marker lands further than 30 meters from the centre of the target, a member of the measuring team must use a marker flag to identify the marker location. The measuring point will be defined in the competition rules, but it is normally the closest part of the weighted bag to the centre of the target. When marking dropped markers, it is important for the staff to stay clear of other balloons approaching the target and not hinder them in any way.

9.3 MARKERS OUTSIDE THE GOAL AREA

- 9.3.1 When a marker is dropped out of the immediate goal area, behind trees or houses, this should be recorded so that the staff can search for it when time permits. In most cases the observer and/or competitor, will inquire about the marker drop from the person who observed and marked it on his sheet. He can tell them where to look for it. If it was not possible to identify the competition number of the balloon, then the type and colours together with any art work should be noted. This will help in identifying the marker.

9.4 MEASURING MARKERS

- 9.4.1 Measuring the marks should not commence before the majority of the balloons have passed over the goal area.

- 9.4.2 First markers close to the target will be measured with a measuring tape, thereafter the other markers will be measured with the measuring equipment.
- 9.4.3 When measuring and recording results, careful procedures shall be applied to avoid mistakes in numbers and results.
- 9.4.4 The following procedure is recommended:
- First the marker number shall be called by radio by the person carrying the mirror e.g. "Number 53".
 - The operator of the survey equipment will then measure the result.
 - The operator will radio back "Number 53 is OK , 345.78 meters".
 - The person carrying the mirror shall check that the right number is read back and should collect the marker, leaving either the marker flag or a sprayed mark.
 - The operator shall write the result in his log.
 - An assistant standing close to the surveyor shall also write up the result and will thereafter read back verbally to the operator "Number 53, 345,78meters".
 - After all markers are measured the operators log shall be cross-checked with the one of the assistant and any discrepancies should be investigated immediately.
 - Thereafter the operator will phone or bring back his results to the Chief Debriefeer.

9.5 MARKERS ON THE CENTER OF A TARGET

- 9.5.1 If any part of the weighted bag is on the centre of the target, the competitor's result shall be 0.0 cm. Two of the staff have each end of a measuring tape and a third staff member records results. Another staff member collects the markers and keeps control of them.

9.6 FINISH MEASURING

- 9.6.1 Check that all markers are collected with measured results. There should be the same number of markers as recorded results.

9.7 DISPLAY OF RESULTS TO OBSERVERS AND COMPETITORS

- 9.7.1 Competitors might want to confirm that their markers are measured by the measuring team when coming to the target or goal site after the flight. Therefore the measuring team shall display measurement results on a board around the target or goal area and leave a visible mark where the target was displayed.

9.8 REPORTING RESULT TO CHIEF DEBRIEFER

- 9.8.1 Competitors shall check their results by themselves, but some competitors will return to the Competition Centre after completion of the tasks without checking believing the measuring team has taken care of their markers. They will ask about their markers and their results, if they drop markers close to the target. Therefore, the measuring team should report their survey results to the Chief Debriefeer by a mobile phone or radio as soon as possible.

9.9 SCORING INSPECTION

- 9.9.1 The Chief Measurer will work for the Chief Scorer after the competitors results have been entered into the computer and the results are printed. Compare the printed results with those on the original measuring sheet compiled by the measuring team or on the ORS. This will reduce the chance of errors. Quite often hand written numbers are hard to read and may lead to mistakes in data input into the computer.

CHAPTER 10 CONTROLLING THE GOAL AREA**10.1 CROWD CONTROL**

- 10.1.1 Crowd control is not the function of the measuring team due to the limited number of staff. However, it is sometimes necessary that they assist in controlling the spectators at the target area. Observers are sometimes included as spectators. ALL persons must be kept at least 30 meters away from the centre of the target. This includes officials who are not involved in measuring. News photographers and press must be kept from this area even though they are looking for good action pictures. Because competitors may make ground contact in the vicinity of the target, safety is the prime concern.
- 10.1.2 Reasonable effort shall be given to enable crews and observers to see how "their competitor" performs.

10.2 TRAFFIC CONTROL

- 10.2.1 Traffic jams are a problem in the vicinity of the target. This is one of the reasons the goal must be kept away from a main road. Balloon retrieve vehicles as well as spectator's cars will combine to contribute to a huge traffic jam.
- 10.2.2 When possible and if permission is obtained a parking area in the target field may be arranged for crews to park, thereby reducing the congestion on the road (check AXMER for minimum distance from target).

10.3 LANDOWNER RELATIONS

- 10.3.1 Good landowner relations are very important for the competition organisers. Courtesy and friendliness is required for their future co-operation.

10.4 MAKING NOTES FOR NEXT TASK SETTING

- 10.4.1 A good measuring team will make notes and report these after each task. They may make notes on the winds around the target during the task flight. Likewise information about hazards, livestock and crops in the surrounding fields. This is valuable to the Director in setting future tasks.

10.5 MISCELLANEOUS

- 10.5.1 Because task data are sometimes changed during the task briefing, the measuring team should attend the task briefings whenever possible to have the latest information about goals, targets and scoring periods.
- 10.5.2 The measuring team should be familiar with the competition rules. There are many rules that apply to a goal, a target and area around these locations. Knowing the rules will assist the measuring staff. However, make sure only the Director and the Scoring Officer have the responsibility of interpreting the rules. If the measuring team need to interpret the rules, they MUST not apply them until they confer with either the Director or Chief Scorer first.

CHAPTER 11 WEATHER INFORMATION**11.1 INFORMATION FOR METEOROLOGICAL OFFICERS**

- 11.1.1 The Meteorological Officer (MO) is a very important expert to provide the Event Director (ED), the Safety Officer (SO), other key officials and competitors with the necessary weather information.
- 11.1.2 It is important to realise that a HAB competition is a very local and time limited matter. The balloons will normally fly twice a day, first soon after sunrise and then again before sunset. The balloons will fly within a radius of 50km from the event locality and a competition flight usually takes not more than 2 hours.
- 11.1.3 MOs generally think on a bigger scale, it is however important to concentrate on the local weather for the duration of the flight. This includes the knowledge of local effects from orographical formations, coast lines etc.
- 11.1.4 When preparing the weather (WX) information, the MO should only give a very short reference to the general weather situation and then concentrate on providing the data for the area and time of the flight. For pilots the most important issue is the wind (more the direction than the speed). The objective in competition is to make best use of the different wind directions with altitude to reach a certain target.

11.2 TIME SCHEDULE BEFORE A FLIGHT

- 11.2.1 All times herein are referenced to the Briefing Time (BT) of a flight.
- 11.2.2 The ED usually starts preparing the flight 2 hours before BT. Around this moment he expects a rough briefing from the MO telling him the expected WX situation and what the wind direction will be. Thereafter the ED will think about what tasks he will set and prepare the Task Data Sheet (TDS). In the mean time the MO should refine his forecast, make a wind reading (or have other people do that) and prepare the Weather Information Sheet (WIS).
- 11.2.3 The WIS should be finished and ready to be multiplied with a photocopier not later than 20min before BT. Before multiplying, show the WIS to the ED and give him an update with the latest information.

11.3 WEATHER INFORMATION SHEET

- 11.3.1 The weather information sheet should have a standard format as shown in Appendix A, Forms. All the information should fit on one DIN A4 sheet. The information should include:
- A small synoptic chart showing the general weather information. Try to illustrate the location of the Event on the chart.
 - A short description of the weather situation and outlook. Including the time of the start of convection in the morning and the end of convection in the evening.
 - Tables for wind readings and forecasts including altitude, direction, speed and observation or forecast time.
 - The altitudes should be in rounded figures (100, 250, 500 feet and not 127, 1696, 483) and include the reference **AGL** (Above Ground Level) or **MSL** (Mean Sea Level) and **F** (Feet) or **M** (Metres).
 - The direction should be in full degrees **To** or **From** and include the reference (**G**=Grid N., **M**=Magnetic N., **T**=True N.).
- 11.3.2 The speed should be in full figures including the reference **KTS** (NM/Hour), **MS** (Metres/Second) or **KH** (Kilometres/Hour).
- If a change of direction is likely during the envisaged flight time, include this information.
 - A graphical plot of the wind reading.
 - The barometric pressure information usually expressed as **QNH** and in **hp** (hecto pascal) or **mm** (Millimetres)
 - **DO NOT** include the sunrise and sunset information. This information is provided by the ED in the TDS.

11.4 WEATHER BREFING

- 11.4.1 During the task briefings the ED usually asks the MO to explain the weather situation to the competitors. When providing this information try to be short. Do not read the information from the sheet you have handed out, they can read that themselves! When the weather is not good and the flight is postponed or cancelled you may take some more time to explain why.
- 11.4.2 When you have the possibility to show weather maps, radar plots showing frontal zones and CBs with a projector (beamer) preferably 'live' from the internet, that's fine and appreciated, but again try to be short.
- 11.4.3 A WX briefing should not take longer than 5 minutes at maximum.

11.5 PROBLEMATIC WEATHER SITUATIONS

- 11.5.1 Everybody can see when the weather is good or very bad, but the situations in between are where a good MO is most important. Always inform the ED objectively about the situation and he will then decide to fly, cancel or postpone.
- 11.5.2 Sometimes the ED will order the competitors to the launch field and will call for an extra briefing there. The MO's presence is necessary at these extra briefing to update the ED with the latest developments. Try to make arrangements to have access to your information sources by telephone or otherwise when attending these ad hoc briefings in the launch field. Inform your colleagues in advance to give you the necessary information when you call them.

11.6 WEATHER INFORMATION ON THE OFFICIAL NOTICE BOARD.

- 11.6.1 Some competitors like to inform themselves between flights outside the official task briefings. It is appreciated if you can provide significant weather charts, wind charts and printed forecasts etc. Contact the ED where to display this information and mention that you will do so during your first briefing.

CHAPTER 12 TASK BRIEFINGS, TASK DATA SHEET AND TASK SETTING**12.1 TASK BRIEFINGS**

- 12.1.1 The Briefing Room should be prepared well ahead before briefing time. Minimum equipment should be a Flip Chart,, Chalk Board or a computer with beamer for the director to make drawings and a competition map should be displayed in front so the director can visualise things with reference to the map. Microphones (for director and competitors) should be available as necessary depending on the size of the Event.
- 12.1.2 Competitors should be permitted to enter the Briefing Room not later than 10 minutes before briefing time. In case observer briefings are held, they should either finish before that time or take place elsewhere.
- 12.1.3 Markers and Observer Report Sheets (ORS) should be put in place not later then 10 minutes before briefing time.

12.2 TASK DATA SHEET (TDS)

- 12.2.1 It is important for competitors that the layout and order of information of the TDS follows a standard format. This guarantees easy and fast recognition of all the information.
- 12.2.2 The compulsory task data are stipulated in the MER. The order of information shall be the same as in the MER and items shall be referred to with the same letter as in the MER.
- 12.2.3 The TDS shall begin with the "flight data" and then the "individual task data" for each task shall be given.
- 12.2.4 Flight data shall always be specific (expressed in words or figures). When a specific individual task data is standard (e.g. the relevant MER rule would stipulate " ... unless otherwise stated ...") the data box or area should indicate a "-" (dash), no other expressions should be used for this meaning.
- 12.2.5 An example of a TDS is included in Appendix D. The TDS shown there includes all of the above ideas. A TDS must not be exactly the same but the layout should basically follow the layout displayed there.
- 12.2.6 At task briefings three copies of the TDS should be distributed (competitor, observer and crew chief). The objective should be that the TDSs are available latest 10 minutes before briefing time.

12.3 TASK SETTING

- 12.3.1 open

CHAPTER 13 PENALTY GUIDE**WHAT IS A PENALTY?**

The Webster Dictionary defines among other things under 3.b a penalty as:

3.b A disadvantage (as loss of yardage, time, or possession of the ball or an addition to or subtraction from the score) imposed on a team or competitor for violation of the rules of a sport.

Further guidelines and definitions are given in the Sporting Code Section I and in the AXMER.

WHY A PENALTY GUIDE?

Our sport has matured from the experimental stage to a more mature stage where rules and penalties are less disputed. It is therefore time to write down to what the debate over rules and penalty interpretation has produced in order to avoid future discussions and reinvention of wheel. This guideline is therefore a 'guideline' and nothing more or less. The SWG recommends that it be used as such without wanting to prevent discussions and interpretations.

There are two schools of Competition Direction; one that wants all penalties to be fixed or fixed as much as possible and the other that wants as little as possible fixed penalties in order to be able to vary the penalty. Both views have merit.

When fixing penalties the Director is in a position that seems more objective because he only has to prove the infraction. Disadvantage though is, that he is not in a position to vary a penalty when, e.g. in his view the competitor's fault is minor.

Not specifying penalties puts a great pressure on the judgement of the Director, but he is in a position to weigh the infraction. Disadvantage is that he may be accused of prejudgement and favouring or disfavouring a competitor, also he may be totally wrong because of lack of experience e.g.

Generally one might say that in the ideal world only a few rules deserve a fixed penalty and the rest will be determined by the good judgement of the Director. This however puts a great burden on him and therefore it has been decided to provide the Penalty Guide as means to streamline penalties without binding the hands of the Director too much. Especially lesser-experienced Directors will find this guide very useful we hope.

WHAT FACTORS PLAY A ROLE IN A PENALTY**Safety**

There is no doubt that Safety is a prime factor to be considered and abusing safety is listed as a "Serious Infringement" in the Sporting Code. Whether and how something affects safety or not should be judged objectively and with common sense. Penalizing a competitor 200 points for attaching his quick release to a wrong point on his car in first instance would be unjust although it affects safety.

Competition advantage

This is sometimes easy to determine and sometimes very difficult. Is it a competition advantage if a competitor touches a blade of grass close to the goal? Certainly not when you think of the effect it has on his result, but yes when you compare him with the prudent pilot paying a lot more attention in avoiding this.

Deliberate or unintentional infractions

Generally infractions are made by: not knowing the rules, inattention, inexperience and/or bad luck. Sometimes however they are deliberate generally as a tactical manoeuvre less frequent as intentional deceiving.

Disturbance to third parties

This is generally easier to determine. Disturbance to third parties is of course very important to follow up on; especially for those pilots who want to fly in the area again after the competition. What disturbance is can be locally very different and the local habits should be considered carefully. Driving in an open short-grass field is generally considered a lot less abusive in Bavaria than in Great Britain e.g.

Sportsmanship

It is clear that good sportsmanship is important. After all we compete to enjoy the sport for our selves and each other. A competitor loosing this out of sight should be reminded. With prize money one should watch more carefully that good sportsmanship is not lost out of sight.

Competitor's experience

There is not much reason to consider a competitor's experience when applying penalties. After all he could have studied the rules (and this guideline) carefully.

KIND OF PENALTIES**Result Penalties.**

They are applied to the result before using the scoring formulas. Almost all of them are specified (e.g. +50m for Gravity Marker Drop) and therefore they should not be used on an interpretation basis.

Penalty Points.

When the penalty is fixed, live is simple; just apply the rule (e.g. Late Entry 50 points). If not, it is where your judgement is required. Try to apply the before mentioned general observations and the rule specific guidelines following hereafter.

Group B Score.

Apply this 'penalty' when the rule specifies so or when the rule states, "... will not achieve a result." (E.g. Marker in an Out of Bounds area). Otherwise apply this rule when the competitor has not achieved a valid or sensible result.

Competition and Task point penalties (Rule 13.4 PENALTIES)

The differentiation was introduced to point out that the penalty relates either to the competition in general (safety, disturbance etc.) or to a specific task (competition advantage etc.). In case of a combination of both, first subtract the task points and then the competition points. Should the competitor then end up with a negative score, determine what brought him below zero. In case of competition points he will receive a negative score in case of task points he will score zero.

HOW TO PUBLISH PENALTIES?

The GS S-I requires that:

5.9.4.3 The fixed data used in the scoring formulas, for a given task, e.g. P, M, RM, W and SM, shall be printed and penalties given should be followed by a rule reference and a brief description.

Specifying penalties is very important, firstly the competitor has the right to know but more important; it is the best learning method. New competitors (and experienced as well) learn a lot when looking what penalties were given and why.

Therefore it is very important that you specify the penalty with the rule number and a brief description.

For the rule reference we recommend to use following format: e.g. **R12.6** (An R directly followed by the

Nr. 12.6, so that it is as short as possible)

The brief description should specify the infraction as precise and as short as possible. Here are some tips:

Don't use references without information value like e.g. R13.3 distance penalty but tell what distance was abused and if possible how much. E.g. R11.2.2 + 2x40m landing close to marker or R15.4.2b. + 2x 350m min. dist. goal to launch point

Try if possible to say what was done wrong instead of referencing the word only. E.g. **100 R9.17 Take-off without permission** is better than **100 R9.17 Take-off permission**

Try to be consequent in your wording. Because penalties are entered at different times and sometimes by different people there is a risk of using different wording for the same offence. Nothing looks worse than a score sheet with several competitors having made the same offence but referenced differently.

Summary of Rule Specific Guidelines

2.2.2 (Nationality)

First instance a warning, thereafter Group B

2.11 RESPONSIBILITY (S1 An3 3)

First instance a warning (unless; safety, competition advantage or sportsmanship), thereafter Group B

2.12 CONDUCT (S1 An3 4)

First instance a penalty of not less than 200 points, thereafter disqualification from Event.

3.1.3 Vents

Without competition advantage 250 points otherwise 500points.

3.5.2 Any damage to a balloon affecting its airworthiness ...

Generally this rule is seldom abused and when then mostly not deliberate. First instance 50 points (5% GS) if safety is affected otherwise a warning.

3.7 ALTIMETER

Almost all countries require that balloons fly with an altimeter as part of the Certificate of Airworthiness. When observers fly in the basket, they must be able to read the indication. Penalty in first instance should be a warning thereafter 250 points seems appropriate.

3.8 COMPETITION NUMBERS

On the first flight this rule is often abused because competitors did not find (or had) the time to fit them to the basket, in this case a warning should be given. After the second flight a penalty of 50 points seems to be appropriate.

3.10.1 Retrieve Crew shall not be within 100m radius ...

This is a difficult rule to give a penalty guide because the circumstances may vary enormously from a harmless offence to deliberate interference, resulting in anything from a warning to a serious penalty.

3.10.2 All vehicles used to aid the retrieval of a balloon ...

Same as 3.8

3.10.3 Retrieve vehicles shall not be parked within 100m ...

When reported by an Observer or Official, the competitor should get a penalty in first instance. When the crew obviously disturbs the action around a goal or target, 100 or 200 points can be given.

6.5 OBSERVER ON RETRIEVE

The treatment of an observer by the crew (and vice versa!) should be correct and respectful. Problems sometimes originate in misunderstandings and different cultures. Not all competitors have fancy cars but still want to compete. Generally a warning should be given in first instance. Speaking with the pilot and or his crew explaining the problem might help here.

6.5.2 It is the duty of the competitor and crew ...

It is important for the smooth running of an event that the Observer is brought back without delay. Penalty should be a Warning or 50 points when inexcusable delay occurs. Sometimes the refuelling station is on the way back to the competition centre and a competitor loses a lot of time when bringing back the Observer first. In this case try to organise or allow alternative procedures for bringing back the Observer. E.g. by shuttle bus or by retrieve car swap.

6.7 OBSERVER REPORT

Generally this rule does not need to be penalized, because it is in the interest of the pilot to sign and check the sheet. However if correction of the scores becomes necessary because of wrong data that is signed by the pilot, one might consider a warning or penalty of 20 points (2%GS), for not stating the competitor's disagreement at the time of signing the report.

6.8 GPS LOGGERS

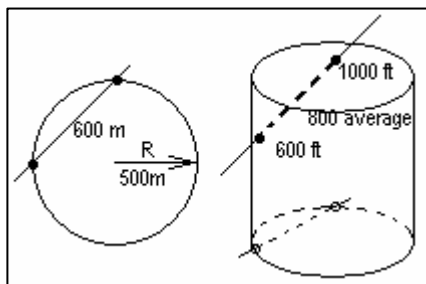
At this moment it is difficult to establish guidelines for penalties because of lack of experience. However it should be quite clear that GPS-Loggers are a substantial part of HAB competitions and not complying, even unintentional, should be penalized as a substantial break of the rules.

7.5 PZ INFRINGEMENT

With the introduction of GPS loggers in 2002 the penalty changed from '500 to 1000' to 'up to 1000'. The loggers enable the director to determine to amount of infringement and what actually happened. The normal penalty is up to 500 points. The amount should be doubled if there is a complaint from the 'owner' of the PZ or if officials witnessed actual disturbance of animals.

In 2003 it was accepted to use the following penalty calculation procedure:

1. Determine the percentage of the horizontal distance travelled through the PZ compared to the maximum. This constitutes half the final percentage.
2. Determine the percentage of the average altitude in the PZ compared to the maximum. This constitutes the other half of the final percentage.
3. The final percentage is the average of the figures from 1. and 2.
4. Take the final percentage on 500 points and this constitutes the penalty (round to 10).
5. Double this figure if there is a complaint from the 'owner' of the PZ or if officials witnessed actual disturbance of animals



Example:

1. $600/1000 \times 100 = 60\%$ 'horizontal %'
2. $100 - 800/1000 \times 100 = 20\%$ 'vertical %'
3. $\frac{1}{2} \times (60 + 20) = 40\%$ 'final%'
4. $40\% \times 500 = \mathbf{200 \text{ points}}$
5. in case of complaints = **400 points**

Altitude infringements of Blue PZs are explained under 10.14 AIR LAW.

7.6 MAPS

When a competitor flies without the competition map simply because he forgets it in the retrieve car e.g., then a warning should be given in first instance. Depending on the circumstances a penalty should be considered if important data such as PZs are not drawn in the map.

7.8 MAP COORDINATES

Competitors should obey by this rule when declaring goals, normally in PDG or FON tasks. There are many known cases in which competitors did declare goals not according to the rule. Examples are: reversing Easting and Northing, declaring unreadable or ambiguous readable etc. Since allowing interpretations only leads to endless discussions, it has become practice to interpret this rule very strict. Therefore a declaration is either OK or not OK, which means no warnings or penalties should be given. In case the declaration is not according to the rule, then the declaration will be considered invalid normally leading to a Group B score. (See also PDG/FON task guide lines)

8.4.2 Unless otherwise specified, tasks in a multiple task flight shall be flown in the order...

This rule has a long history of interpretations. In the beginning it was accepted as being smart to (ab)use this rule. Then during the Worlds in 1993 and the Europeans in 1994 for the first time competitors were penalized for deliberately abusing this rule under the rule of unsporting behaviour. The penalties caused protests and quite some debate. In 1993 the protesters won in 1994 they lost. The penalty was arguable because it was a change of common practise, nevertheless it was felt that it was time to change our appreciation of rules from making 'smart use of them' to 'simple obey them' and this led to the interpretation of today. Normally the Director sets the tasks in such a way that they can be flown in a logical order. However sometimes a reversion or abuse of that order can give considerable advantage. 'Wrong' task setting or a weather change can cause this. Sometimes the competitor is left in a position where with the prevailing winds, flying the task in order makes no sense. So in case of an infraction one should try to analyse whether there was no other option or whether the infraction was deliberate. In the last case nowadays the interpretation is that this is not in line with the sporting idea and should be handled accordingly. Normally this means a hefty penalty 'up to 1000' if deliberate wrongdoing is a fact: In any case this wrongdoing should be penalised in such a way that the outcome is not rewarding for the competitor.

Practically this means that a competitor who wants to give up a certain task to do good in another task should comply strictly by this rule which means dropping his marker in the order specified. However if a competitor chooses to do this, then this should be allowed and no other interpretation should be placed upon his choice.

Do not forget to look into rule 8.4.4, which relates a lot to this rule!

8.4.3. Penalties related to the take off will normally be applied in the first task...

This rule is rather unambiguous and should be applied as written.

8.4.4 If not otherwise stated in the Task Data, the minimum distance from the launch...

This rule was introduced as a clarification to R8.4.2. Which means that a competitor choosing to give up a certain task (or for any other reason) should at least maintain the minimum distance required to his FIN goal, to any other goal. Practically this means that a competitor cannot take-off next (very close) to a goal/target of another task, then throw his markers in order and try to get away with it. If he does not apply the minimum distance to the other goals on his take-off he should be penalised with the appropriate distance penalty (result + 2x infringement).

- 8.4.5 Marker order....**
This rule was adopted in 1993, Dresden and was intended to end a situation where dropping the wrong marker was penalised very differently. Hans Akerstedt proposed a 'soft' penalty of 25 points and won against the hardliners in the committee. This rule is a good example of a fixed penalty rule that ended a lot of discussion.
- 8.11 LATE ENTRY**
Another example of rule allowing a straightforward fixed penalty.
- 9.2 INDIVIDUAL LAUNCH AREAS**
This rule was changed after the Worlds 1999 when a competitor carried his balloon 600m from where he inflated it to where he took-off. The rule implies that a competitor must take-off from the spot (launch field) he has chosen for inflation. The launch field is the physical field or the area within 100m from where he inflated, which ever is smaller. Should he choose to take-off elsewhere after his inflation then, he must deflate his balloon first and re-inflate on the new spot. Since the rule is rather new there is no 'jurisdiction' yet, however we would assume the take-off becomes invalid resulting in a Group B score in the first task of that flight.
- 9.3 LANDOWNER'S PERMISSION**
Check for alterations due to local conditions under Rule 6 in Section II. The penalty depends a little on the circumstances and they vary in some parts of the world. Generally one should say that a genuine attempt must be made to find the landowner, but if he cannot be found and there is no alternative then the Director should weigh the circumstances and penalize from a warning to the full 250 task points if the competitor clearly disregarded common behaviour.
- 9.4 VEHICLES and 9.5 LATE VEHICLES**
These rules are seldom abused. However when abused the penalty is clear and fixed.
- 9.6 PREPARATION OF BALLOONS**
This rule is also rarely abused and if so the Director must use his common sense and penalise accordingly.
- 9.6.2 Quick-release tie-offs must be used for all balloons inflating in a common launch area ...**
An abuse of the rule is more frequent and generally not deliberate. In first instance the Director should warn more as an educational tool. However if other balloons were (potentially) hindered e.g. in a windy condition then the competitor should be given a penalty of approximately of 100 points.
- 9.7 COLD INFLATION**
The rule was introduced to enable all competitors to see the flagpole and hear the audible signals. Abuse should be penalised by a warning in first instance.
- 9.11 LAUNCH PERIOD, 9.12 ADEQUATE TIME and 9.13 EXTENSION OF TIME**
These rules are related. The penalty for late Take-off is fixed and not disputed. However sometimes competitors all wait to the last minute before waiving their white flag and start complaining when not given Take-off permission immediately. A competitor waiting to the last minute and whose take-off is late because of a hard working launch master, is not " ... delayed by the action of an official ...". Hence he should be at least warned or penalised 100 points / minute.
- 9.15 READINESS FOR TAKE-OFF**
Competitors not waiving their white flag should be warned or penalised 50 points.

9.16 OBSTRUCTION

Obstruction is difficult to penalise. Actually a competitor obstructing other pilots with his inflated balloon while not waving a white flag, should be requested to deflate by the launch master. Therefore it is difficult to penalise a competitor if the launch master did not order him to deflate. Nevertheless in this case at least a warning should be given.

9.17 TAKE-OFF PERMISSION

Taking-off without permission should be penalised by a warning or 50 points in first instance and when no disruption of the Take-off process was caused. During a Take-off with many balloons and or when causing potential safety problems, this should be penalised between 100 and 250. However, if actual problems were observed or safety was actually impaired then the penalty should be from 250 to 500 points.

9.22 CLEARING LAUNCH AREA

A competitor should clear the launch area without undue delay (in 3 min or above 500ft). The penalty for infringing this rule should be a warning except when deliberate or when competition advantage was gained, then the penalty should be 100 points or more, depending on the advantage. In case of a minimum distance task, the penalty is fixed at 100 points per min! (See rule 15.13.5)

10.1 MIDAIR COLLISION AND RECKLESS FLYING

The GPS-Loggers provide means to objectively determine what happened when climbing too fast or in case of a balloon collision and should be used in case of observed and/or reported collisions. As a reaction to multiple serious collisions during the WHABC 2006, the RSC at her meeting in 2007 decided to provide strong guidance how to treat collisions. Any collision other than trivial envelope 'touches' as under *R10.1.4 Envelope to envelope contact in approximate level flight will generally not be penalized.*, should be considered dangerous and penalized. Generally the idea is the more forceful the higher the penalty. Also the principle should be that the one that could have avoided the problem best should be the harder penalised, which usually is the higher balloon. However this does not relieve to lower or climbing competitor from responsibility. In general one can presuppose that a pilot climbing fast in competition acknowledges responsibility for collisions. Should a pilot climbing at 10m/sec hit a level flying balloon then we would suggest 75% of responsibility with the climbing pilot and 25% with the level flying one. Should however a fast descending pilot hit a level flying pilot, the descending pilot should take 100% responsibility and likewise 100% of the penalty given.

Although rather difficult and subjective, when possible the aspect off recklessness's and irresponsibility should be addressed. If a competitor is a repeated offender he should be strongly penalised up the Disqualification.

New competitors not used to fly in big events tend to not pay enough attention. This may addressed at the GB and should not be a reason to reduce a penalty.

Taken al of the above into respect the SWG suggests the following penalty:

Lower Balloon		Higher Balloon	
VS m/s	Penalty	VS m/s	Penalty
1	Warning	-1	200
2	100	-2	400
3	300	-3	600
4	500	-4	800
5	700	-5	1,000
6	1,000	-6	1,000

10.3 CLEARING GOAL/TARGET AREA

Certainly a competitor should not block the target with his balloon and should reasonably well clear the area while observing not to climb too fast and abuse the rule of rate of climb. Generally a warning should be given unless deliberate action can be assumed.

10.4 DROPPING OBJECTS

This rule is generally not abused. By law water and loose sand is allowed. Competitors also use pieces of paper, shaving foam etc. All these materials should be allowed as long as they do not endanger people on the ground or should be banned for other reasons (toxically, non-ecologically etc). If safety is not an issue a warning should be given.

10.5 BEHAVIOUR

Behaviour of competitors and crews that may discredit the good name of our sport must be avoided. Judging the magnitude of misbehaviour is difficult and depends on subjective and objective points of view. A penalty guide is not provided because of the wide range of possible misbehaviours.

10.6 LIVESTOCK AND CROP

Judging an infraction of this rule can be very difficult. One should weigh all circumstances like: could the pilot see the cattle (maybe he was surprised to see the cattle just behind a row of trees.), what action did he take (sometimes burning to climb does more harm than gently flying low and burn thereafter), sometimes cattle start running away from another balloon and a pilot ends up flying right over them whereas he could assume originally that his flight pass was free. Unless clear disregard of the cattle is clearly witnessed one should warn in first instance.

10.8 COLLISION

No pilot wants to touch a wire, nor is there any advantage in doing so. Therefore generally he is penalised already by shock or burns to his balloon. We would say a standard penalty should be 200 points. If a pilot however unnecessarily lands in a small field with wires around hoping things will be alright and then touches wires one could penalise him up to 500 points for taking unnecessary risks.

10.9 FLIGHT CREW AND PASSENGERS

Rule 10.9.1 says that crewmembers may perform any duty "... except to act as pilot-in-command." This means virtually anything including operating the burner, dropping the marker or even both. Practically this means there is no penalty for this rule.

When a competitor does not fly "solo" when prescribed by the rule he should be scored in Group B in all task in that flight.

10.10 GROUND CREW

The competitor is responsible for his crew even when in the air. So if his crew does things they shouldn't do according the rules, there is generally little room for interpretation and the competitor should be penalised. The amount of penalty varies from warning to competition points depending on the type of rule infraction.

10.11 DRIVING

The Director is not the police or a law enforcement officer. So generally he should not penalise for breaking traffic rules, like wrong parking e.g. However if a competitor or his crew drives through a red traffic light or races far above the speed limit through a village, the director should intervene if this is reported to him, generally with a warning in first instance.

10.13 ASSISTANCE

This rule is more or less superfluous because handling lines or pushing the basket would constitute a Ground Contact and should be penalised as a GC. What happens now and then is that a competitor forgets his markers or radio etc. In that case sometimes the competitor tries to fly low over a road and the crew throws them to him. As long as there is no physical contact, this should be tolerated.

10.14 AIR LAW

What is said under DRIVING also applies here, that the director is not a law enforcement officer. However infringements that affect safety and/or constitute competition advantage should be followed up upon. The two major stumbling blocks are not flying VFR and abusing altitude limits (Blue PZs).

The GPSs deliver means to more objectively determine who flew in the clouds, provided there is a common cloud base, and in any case altitude infringements of Blue PZs.

Generally the following procedure for determining penalties in conjunction with altitude limits is suggested.

For every track point, the altitude above limit is determined.

Penalties should be given based on the time and altitude above the limit.

For each ft/meter and second, points should be calculated with a penalty factor (penalty per (ft/meter x seconds))

The total penalty is the sum of all calculated track point penalties and should be rounded to the next full ten points. The following variables should be considered in the calculations:

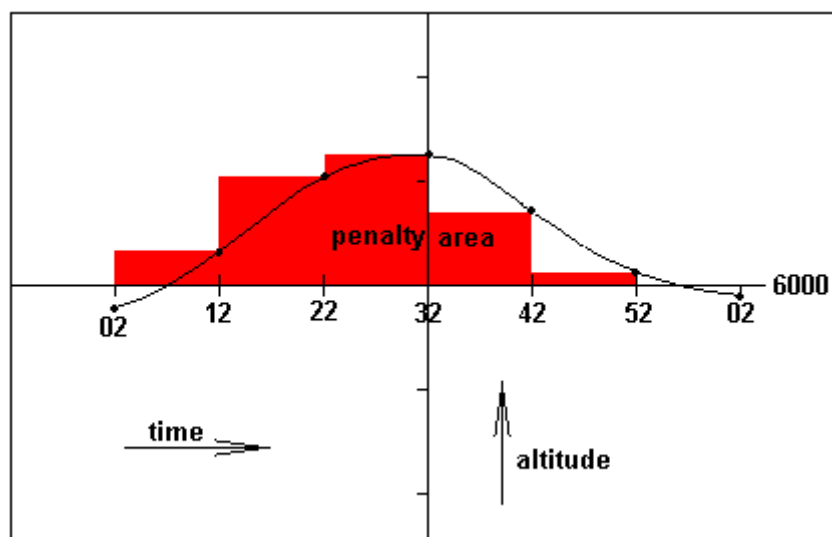
- Time interval of track points.
- Penalty factor.

In March 2006 the SWG agreed that the warning zone will no longer be used and penalties will be applied with a penalty factor of [1pt/1ft/1sec.]/100.

In the following example the penalty would be **190points**

Example: Altitude limit is 6000 (1829m)

Time	Altitude	Infraction	Penalty.	Sum for this infraction
08:13:02	5900 (1798m)	-	-	-
08:13:12	6200 (1889m)	200 (60m)	$200 \times 1 \times 10 / 100 = 20$	20
08:13:22	6550 (1996m)	550 (168m)	$550 \times 1 \times 10 / 100 = 55$	75
08:13:32	6700 (2042m)	700 (213m)	$700 \times 1 \times 10 / 100 = 70$	145
08:13:42	6350 (1935m)	350 (107m)	$350 \times 1 \times 10 / 100 = 35$	180
08:13:52	6100 (1859m)	100 (30m)	$100 \times 1 \times 10 / 100 = 10$	190
08:14:02	5950 (1813m)	-	-	-



11.2 LANDING AT WILL and 11.3 CONTEST LANDING

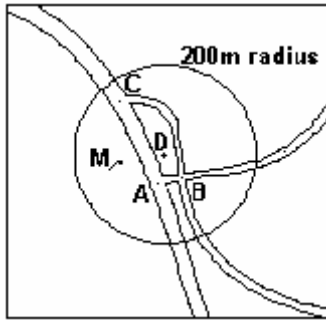
The result penalty is fixed and should be applied for each metre that the competitor landed within the 200m radius from his mark or goal/target.

11.4 GROUND CONTACT I and GROUND CONTACT II

Both rules clearly have fixed penalties leaving no room for interpretations. In 2003 a differentiation was introduced between light and solid contact, the definition of which seems clear. In the past competitors were harshly penalised for arbitrary contacts like blades of grass, marker tail etc. hopefully this differentiation will reduce protests.

11.6 PERMISSION TO RETRIEVE

The same as said before (Behaviour, Landowner permission etc.) is also applicable here. When no complaint is received by a landowner and no damage is done, then a warning should be given in first instance.

12.3 IDENTIFICATION

If the declaration is right on the spot there is no ambiguity even if there are other goals within 200m. However let's assume D is the point complying with the competitor's declaration. A, B and C are valid goals and M is his marker drop. Under Rule 12.3.1 the competitor "... may add descriptive detail ...". In this case he should have done that, then it is really not clear which goal he actually meant. In this case of ambiguity calculate the result to each goal and take the least advantageous result.

12.6 MARKER

What happens mostly is that the competitor forgets his marker(s). In this case he usually throws something else (glove e.g.) or uses a training marker he happens to have on board. In this case a penalty of 50 points should be given unless he had competition advantage (dropping high and falling fast e.g.). Sometimes the marker tail becomes knotted when thrown in this case 50 points should be given. More than 50 points should be given if competition advantage is gained, in case of gross neglect or substantial change of the marker.



In 2003 after discussion in the SWG, it was concluded that a marker that had previously been swirled and was subsequently dropped correctly as a GMD, that this does not constitute a modified marker.

12.7 MARKER TO BE VISIBLE

This rule should be penalised by a warning, unless deliberate attempt to mislead officials or foul play is proven in which case he should be penalised under the rule of unsporting behaviour.

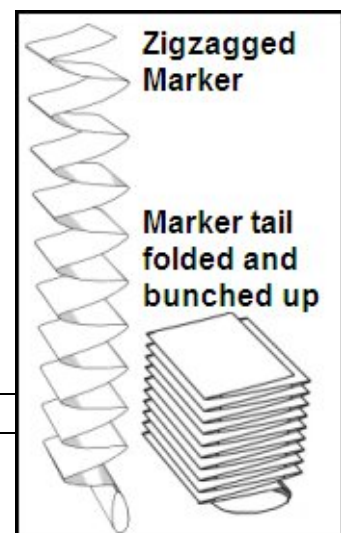
12.9 GRAVITY MARKER DROP

Fortunately the penalty is fixed for not dropping the marker correctly; simply add 50m to the competitors result. In 2005 the AXWG adopted the Gravity Marker Drop rule used in the USA. The method is clearly described in the rule and needs no further interpretation. However after some discussion it was decided that in case a competitor uses the 'old' method of gravity drop it would be harsh to penalise him with 50m and therefore a lighter penalty of 50 points was included. In the past there have been some lengthy debates up to plenary level about whether a thrown marker in a limited scoring area when a GMD was prescribed, was valid or unsportsmanlike. By plenary decision this was considered OK provided the 50m distance penalty is applied. The last sentence of this rule reflects this plenary decision.

12.10 FREE MARKER DROP

It has become practise to accept any method (throwing, swirling etc.), except with a mechanism of course. It may add to the amusement to see competitors' struggling with their markers. However in any case the marker must be unrolled.

Some competitors fold their markers (zigzag pattern) before dropping. A zigzagged marker is considered unrolled. A zigzagged marker that is almost laid on a target when a



competitor makes a low pass over the target is OK even if the zigzagged tail does not completely free up in this process.

12.13 INTERFERENCE WITH MARKER

Normally interference with a marker constitutes a severe infringement of the rules and should be penalised accordingly. However in a situation for example where a pilot with the Observer on board passes over a road junction and the competitor does a good drop on the junction and the crew is able to spray the point while the Observer is still in sight, then it would be rather counterproductive to leave the marker on the road ready to be taken by car or by-passers. In such a situation the Observer should give the crew permission to remove the marker we think without incurring a penalty.

SPECIFIC TASK RELATED PENALTIES

15.1 PDG

Many things can go wrong when declaring goals. Generally the rules should be applied strictly meaning the competitor must declare himself, in writing and clearly readable on the paper specified in the task data (declaration box, Observer sheet etc.). Any unreadable or wrong declaration should lead to a GroupB score, except when declaring late in which case a penalty of 100 points per minute should be applied (See also comments R7.8 MAP COORDINATES). For further guidelines read also FON task.

15.5 FLY ON

Many things can go wrong in FON tasks and they have led to extensive discussions. Because of this and the long history of debate and interpretations, today the tendency is to very strictly apply the rule as written. Here are several mistakes made by competitors and followed by the penalty the SWG think should be applied.

Infraction	Proposed penalty
More goals are declared than allowed.	In 2003 the AXMER changed and the PDG and FON rule is that in this case the competitor will be scored in Group B. (irrespective if the goals are valid or invalid).
Declaration made verbally to the Observer (o.b. = on board) who writes down the declaration in his Observer sheet.	Group B: Because the competitor has abused R 15.5.3 "... write clearly on the previous marker ...") and R15.5.5 "... verbal declaration ... is of no effect ..."
Declaration made verbally to the Observer (o.b.) who writes down the declaration on the marker as requested by the competitor.	GroupB: Because the competitor shall write. "The competitor shall write ..." See also R1.3.1 meaning of shall and R6.3.2 Observer should not handle the marker ...
Marker is found with an unreadable declaration e.g. washed away because non-permanent ink pen was used or very badly (unreadable) written.	GroupB: Because the competitor shall "... write clearly ...". ATTENTION! R15.5.5 provisional goal cannot be applied because the marker is not lost (it was found!).
Marker is found with a goal. But figures do not match. Pilot argues that he reads the right numbers.	Try to find several independent witnesses and ask them what they think is written. If the majority reads the numbers the way the pilot does, give him the benefit of the doubt. Otherwise apply R12.3.3

CIA COMPETITION OPERATION HANDBOOK

Marker is stolen but Observer (o.b.) witnessed what goal the competitor has written on it before dropping.	In this exceptional case the result should stand. Because the competitor had applied the rule as witnessed by the Observer and the Observer saw the drop (apply R12.15.2 assessed result).
Marker is stolen but seen before by another official/observer.	If the official/observer has noted the coordinates use that declaration and apply R12.15.2 assessed result). If the declaration was not noted then use the 'provisional goal' if declared and GroupB if no provisional goal was declared.
Marker is stolen.	Use the 'provisional goal' if declared and GroupB if no provisional goal was declared.
Marker is stolen. Pilot wrote his goal on the marker before take-off and the Observer (f.o.g. = follow on ground) noted this declaration in his sheet.	The pilot claims that the Observer saw him write the goal on the marker. The pilot may have changed his declaration and because we don't know what was exactly written on the marker when dropped, he should be scored in GroupB or to his provisional goal, if properly declared.
More than one goal was allowed. Pilot declares valid and invalid goals.	Measure him to the best valid goal irrespective where he aimed for (he is lucky if the goal he aimed for was valid). Also applies for PDGs

15.6 HARE AND HOUNDS and WATERSHIP DOWN

What often happens is that competitors overtake the Hare balloon and drop their markers before the Hare had laid out the cross. This is not prohibited by the rules and should therefore be allowed.

15.13 MINIMUM DISTANCE

Together with the FON task, this task causes most of the problems, complaints and protests. Directors tend to set this task in light wind conditions and competitors tend to hang around after take-off in order to avoid drifting away. This tends to produce GCs. Also the clearing the launch area is difficult to check although this becomes easier with GPS-loggers. For this reason it is not recommend setting this task in light wind conditions. One problem is that often the balloons clock together to a big group. What happens then is, that the bigger balloons are virtually hanging on (leaning on) the smaller balloons, sometimes pushing them down. The normal heating reaction is then not sufficient because they must burn for themselves and others and GC is more likely. In those cases, interviews with observers or witnesses are necessary to collect information.

APPENDIX A: FORMS**GPS Position Report Form**

Date	Task #
------	--------

Competitor #	Name
Observer #	Name

Map Datum

Name of position (launch, landing, mark, goal etc)			EPE	m
	Easting	Northing	Time (i.e. 16 h 25 m 20 s)	
1				
2				
3				

Name of position (launch, landing, mark, goal etc)			EPE	m
	Easting	Northing	Time (i.e. 16 h 25 m 20 s)	
1				
2				
3				

Name of position (launch, landing, mark, goal etc)			EPE	m
	Easting	Northing	Time (i.e. 16 h 25 m 20 s)	
1				
2				
3				

Note 1: Follow the instructions and complete all information, otherwise position report is invalid.

Note 2: Before reading or storing points, the GPS unit must be stabilized more than 1 minute.

Note 3: Minimum three GPS position readings at each position must be recorded.

Note 4: Minimum time between GPS readings must be 15 seconds.

Note 5: Write full digits (32U 0289117, 5532706) at the first line. Last five digits at 2nd and 3rd line.

Note 6: No GPS is used if EPE is more than 10 meters.

Note 7: Measurements by GPS will not be accepted when result is less than 200m.

However, you shall record positions of all marks and selected goals by GPS with this form.

Note 8: In PDGs and FONs tasks, record all positions of mark **and** goal.

Note 9: If big difference between readings appears, check GPS and read again.

Update: March 2003 FA/CIA MK

Editorial note: When printing a GPS Position Report Form the a.m. notes shall printed on the form!

AXMER FOR GPS LOGGERS FLIGHT REPORT FORM (FRF)

Form may be made available in electronic format in the competition centre.

AXMER for GPS Loggers, Flight Report Form	
Competitor	
<input style="width: 95%;" type="text"/> Number.	<input style="width: 95%;" type="text"/> Name.
Balloon	
<input style="width: 95%;" type="text"/> Registration.	<input style="width: 95%;" type="text"/> Name / Sponsor.
Flight data	
<p>Take OFF.</p> <input style="width: 95%;" type="text"/> Date <input style="width: 95%;" type="text"/> Time(It) <input style="width: 95%;" type="text"/> Co-ordinates (8char) Type of field: <input type="checkbox"/> Common launch area <input type="checkbox"/> Grass <input type="checkbox"/> Harvested field <input type="checkbox"/> Minor road or track <input type="checkbox"/> Other specify below Landowner's name, address and telephone. <div style="border: 1px solid black; height: 100px; width: 95%; margin-top: 5px;"></div>	<p>Landing.</p> <input style="width: 95%;" type="text"/> Time(It) <input style="width: 95%;" type="text"/> Co-ordinates (8char) Type of field: <input type="checkbox"/> Grass <input type="checkbox"/> Harvested field <input type="checkbox"/> Minor road or track <input type="checkbox"/> Other specify below Landowner's name, address and telephone. <div style="border: 1px solid black; height: 100px; width: 95%; margin-top: 5px;"></div>
Estimated results of this flight	
<input style="width: 95%;" type="text"/> 1 st task <input style="width: 95%;" type="text"/> 2 nd task <input style="width: 95%;" type="text"/> 3 rd task <input style="width: 95%;" type="text"/> 4 th task <input style="width: 95%;" type="text"/> 5 th task Estimated results must be entered! When the measuring team will measure the result enter either their given result or estimate your result.	Enter any other relevant information: <div style="border: 1px solid black; height: 100px; width: 95%; margin-top: 5px;"></div>
<input type="button" value="Delete!"/> <input type="button" value="Send"/>	Update: March 2003 FA/CIA MdB

EXAMPLE OF A STANDARDISED TASK DATA SHEET (TDS)

World Air Games
Seville, Spain 22 June - 1 July 2001

FLIGHTDATA

a) Date	10.03.2001	f) Briefing time/place	04:45 / Comp.centre
b) Sunrise / Sunset	05:00 / 21:00	g) Observer	Fly on pilot's invitation
c) PZs in force	All	h) Solo flight	not set
d) Launch area	Pilots choice	i) Search period	4Hrs
e) Launch period	05:45-07:00		

TASK Nr. 1, FLY IN

a) Marker colour	RED	
b) Marker order	-	
c) Marker drop	BY GRAVITY!	
d) Scoring period	-	
e) Scoring area	-	
f) Task data R15.4.2	a. Goal	12345678
	b. Min/Max dist. L. Point to goal(s)	X / Y km
	c. Number of take-offs permitted	1

TASK Nr. 2, HESITATION WALTH

a) Marker colour	LIGHT BLUE	
b) Marker order	-	
c) Marker drop	-	
d) Scoring period	-	
e) Scoring area	radius of 150m around target or goals	
f) Task data R15.3.2	a. Target	12345678
	Goal	12345678
	Goal	12345678

TASK Nr. 3, FLY ON

a) Marker colour	ORANGE	
b) Marker order	-	
c) Marker drop	-	
d) Scoring period	09:45	
e) Scoring area	-	
f) Task data R15.5.2	a. Min/Max dist. previous mark to goal	X / Y km
	b. Number permitted Goals	1

APPENDIX B: STANDARDISED TEXT FOR TASK SCORE SHEETS.

Rule Nr.	Latest version rule reference	Notes
2.2.2	Nationality of flight crew	
2.11	Competitor responsibility	
2.12	Conduct	
3.1.3	R. vents used	
3.3	Balloon changed	
3.4	Airworthiness	
3.5.1/3.5.2	Envelope damage Envelope replacement	
3.6	Automatic Flight Controls	
3.7	No altimeter Altimeter not readable by OBS	
3.8	No basket number No vehicle number	
3.10.1	Crew within 100m of MKR	
3.10.2	No second vehicle number	
3.10.3	Vehicle within 100m of GL/TGT	
6.5.1	OBS on Retrieve Conveyance of OBS OBS no visual contact	
6.5.2	OBS conveyance OBS return	
6.7	xxx	this is a 'should' rule and therefore should not be penalised
6.8	Incorrect use LGR	
7.1	T/O / LND / MKR outside CTA	
7.2	T/O / LND / MKR in OFB	
7.5	T/O / Flight / LND in PZ.	include PZ number or numbers
7.6	Map markings missing Map not on board	
7.8	xxx	generally a infringement of this rule should be penalised under R12.3 Identification
8.4.2	Task ... not flown in order	
8.4.4	+2x350m T/O close to other GL/TGT	
8.4.5	Wrong MKR colour.	
8.11.1	Late entry	
9.1.1	T/O outside CLA	
9.2.3	ILA outside CTA Balloon moved before T/O	
9.3	No LO perm.	
9.4.1	Vehicles-more than one	
9.4.2	Driving speed	
9.5	Late vehicles	
9.6.1	Preparation of balloon	
9.6.2	No Quick Release	
9.7	Fan use/green flg.	
9.11	Late T/O Early T/O	
9.12	Adequate time	
9.13	Extension of time	
9.15	Readiness for T/O	

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9.16	Obstruction	
9.17.1	No T/O permission	
9.21.2	Aborted T/O	
9.22	LA not cleared in 3min or 500ft	
10.1	Rate of climb	
10.2	Right of way	
10.3	Clearing GL/TGT area	
10.4	Dropping objects	
10.5	Behaviour	
10.6	Close to livestock No landowner permission	
10.8	Collision pwr. wires Collision tel. wires	
10.9.3	Not solo	
10.10	Insufficient grnd. crew	
10.11	Driving	
10.12	Disembarkation	
10.13	Assistance	
10.14	Air law CTR	When air law is infringed and penalised reference to specific law should be made.
11.2.2	LND in 200m of GL/TGT or MKR	
11.3.2	Assistance contest LND.	
11.3.4	Contest LND in 200m of GL/TGT	
11.4	GC light GC solid	
11.5	GC in 200m of GL/TGT	
11.6	No LO perm.	
12.2.1	Invalid goal	
12.3.1	Incorrect goal identification	
12.3.2	Ambiguous goal	
12.3.3	No valid goal	
12.4	Invalid goal	
12.6	Modified MKR Unauthorized MKR	
12.7	MKR not visible	
12.9	Invalid GMD	
12.10	MKR not unrolled	
12.12.1	Unaccompanied OBS	
12.13	Interference with MKR	
12.14	SRP exceeded	
12.15.2	Result assessed Result next MKR Result LND position	
12.16.2	Out of SCP	
12.16.3	Out of SCP	
12.16.4	Sunset	
12.17.2	Out of SCA	
13.1	See notes	If possible describe what happened. E.g.: Mislead Officials, Documents falsified
13.2	See notes	When penalising rule infringement for which a penalty is not specified, the reference should be made to the infringed rule and not to R13.2

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13.3	See notes	Competitors should not be penalised by reference to R13.3 but reference of the specific rule. Wrong: '+2x80m R13.3 Distance infringement' Correct: '+2x80m LND close to MKR'
PDG 15.1.2.b 15.1.4 or 5 15.1.4 or 5 15.1.7	Too many goals Unreadable declaration No declaration Late declaration	
FIN 15.4.2.b 15.4.2.c 15.4.4	+2x45m min dist or +2x80m max dist To many goals More than one scoring attempt	
FON 15.5.2 15.5.4 15.5.4	To many goals Unreadable declaration Declaration not on MKR	Many things can go wrong see penalty guide. If the MKR is lost and no provisional goal is declared etc, score him according R12.15 and use that wording.
15.9.4	More than one scoring attempt	When a pilot scores outside the SCP or SCA, just score him to GroupB without a rule ref.
15.10.4	xxx	When a pilot scores outside the SCP or SCA, just score him to GroupB without a rule ref.
15.13.5	Clearing CLA MID Task	
15.13.6	GC MID task	
15.15.4	xxx	When a pilot scores outside the SCP or SCA, just score him to GroupB without a rule ref.
15.16.4	xxx	When a pilot scores outside the SCP or SCA, just score him to GroupB without a rule ref.

**APPENDIX C: SCORING SOFTWARE STANDARDS AND BENCH MARK TESTING
TO BE DEVELOPED.**