PROPOSAL TO IGC PLENARY 2010
Proposed by French Gliding Federation (FFVV)

Concerns: the use of GPS Position recorders for silver and gold badge flights

It is proposed that the Appendix to chapter 4 of the Sporting Code Section 3 be changed from:
Each NAC is to determine the specific types of GPS position recorders approved for use within their jurisdiction and to maintain a current list of them. A copy of the operating manual for each model together with any additional procedures needed to comply with this Appendix must be sent to the chairman of the IGC GFA Committee, who will comment if necessary on whether an individual NAC's proposal does comply. The GFAC will maintain a list of all NAC-approved units and their operating procedures and make it available on the IGC GNSS web pages. Further guidance is given in Annex C, para 6.1.

To read as follows:
Each NAC is to determine the specific types of GPS position recorders approved for use within their jurisdiction and to maintain a current list of them to be sent to the GFAC who will maintain a list of all NAC-approved units and make it available on the IGC GNSS web pages. Further guidance is given in Annex C, para 6.1.

This Proposal affects:
Sporting Code Section 3 Appendix
Other - Nil

Reasons supporting the Proposal:
As shown by the minutes IGC Minutes of 2008 and the proposal on the SC3 (Item 9.4.1):

e. Chapter 4 Appendix. This gives specific rules for the use of COTS GPS for silver and gold badge flights. Included are the criteria that the unit must meet for an NAC to authorise its use. The NAC must ensure the unit complies with these rules.

the plenary wanted to set a regulatory framework and to give to each NAC the responsibility of selecting the GPS position recorders they allow for validating silver and gold badge flights comply with these rules, the NACs having to ensure they comply with the rules.

However the implementation of the rule in Appendix to Chapter 4 of the Sporting Code (See text above) obliges the NAC to send a copy of the operating manual for each model together with any additional procedures needed to comply with the rules and gives to Chairman of the GFAC Committee the right to comment if necessary on whether an individual NAC's proposal does comply.

De facto this results in a rather heavy procedure since the GFAC requires for each model a standardized approval document (See an example in Annex). We believe that the position recorders are approved nationally we should not force the NACs to provide the operation manuals (and in some case to translate all approval documents to English) for publishing them on the IGC website .

Additionally the criteria set by the GFAC are too stringent. For example the GFAC advised the FFVV against allowing the use of IGC files provided by a secure recording

software running on a PDA connected to an external GPS receiver. This is rather strange because such files are accepted at the OLC. We should not make things too complicated and a procedure accepted for de-centralized contests should also be acceptable for such “low level” badges.

For all these reasons we urge the Plenary to modify the Sporting Code in order to come back to the original intent of the COTS proposal which was to set pragmatic and proportionate rules and to give each NAC the full responsibility of selecting the GPS Position recorders they believe to be appropriate for validating silver and gold badge flights.

Gliding Federation of Australia

Position Recorder for Silver and Gold Badge Flights
Approval Document: OzFlarm and miniOZ

Dated: 25 October 2009

1. Introduction

1.1. This document authorises the use of the GPS recording devices described below, for use as Position Recorders in Australia under the rules specified in the FAI Sporting Code Section 3 (Gliders), in particular Chapter 4 and the Appendix to Chapter 4. These rules specify the circumstances in which a Position Recorder may be used for the validation of a Silver and Gold Badge performance only (The use of an IGC-approved GNSS Flight Recorder, if available, for such flights is unaffected).

1.2. This approval covers only the instrument itself and any operational requirements for its use. The process for attempting a badge flight and providing the necessary evidence to the GFA's FAI Certificates Officer is provided in the Sporting Code and in other GFA documentation.

2. Equipment Approved

2.1. **Name of equipment:** **OzFlarm and miniOZ**

Manufacturer: **RF Developments or Swift Avionics**

2.2. Both of these instruments are built using internal components sourced from the original Swiss Flarms, with the difference being that miniOZ is packaged as a "Black Box" (no display) version designed to supply GPS and Flarm information to a PDA or other navigational instrument. The OzFlarm is no longer in production. Details of these instruments can be found at:

http://www.swiftavionics.com.au/product_detail/3/MiniOz/Flarm/Engine

2.3. This approval applies to the flight data recorded internally in the instrument and downloaded directly in the form of an IGC format file with a verifiable security record.

2.4. It has been determined that, in order to comply with the Sporting Code for Position Recorders:

2.4.1. These devices record only in the WGS84 datum (ellipsoid Earth Model) and that other Datums are not selectable.

2.4.2. Fixes in the downloaded IGC file are always derived from GPS data. No predictive fixes are recorded without GPS data.

2.4.3. Pressure Altitude calibrated to the ICAO ISA is required and can be obtained either from a separate Barograph or by using the Pressure Altitude function provided by the pressure sensor in the Position Recorder. Both GPS and pressure altitude are recorded in the downloaded IGC file. In addition, the recorder outputs a digital sentence containing data including the current altitude reading once per second while the device is switched on, and this can be used for calibration of the pressure altitude sensor when required.

2.4.4. The downloaded IGC file can be electronically validated at any time to ensure that the file is identical to when it was initially downloaded.

3. Approval Limitations

3.1. This equipment is approved as a Position Recorder for Silver and Gold Badge Flights only, as specified in the documents referenced in Paragraph 1 and Annexes B and C to the Sporting Code for Gliding.

3.1.1 GPS altitude, or uncalibrated pressure altitude, may only be used to demonstrate flight continuity, and not as evidence for any height gain claim or to demonstrate other height related evidence such as start and finish heights. For Calibrated pressure altitude, see Paragraph 3.4.

3.2. Data from this equipment which is stored in an intermediate device (such as a PDA or navigational instrument) may not be used to validate a claim unless the device in which it is stored is itself approved, either as a Position Recorder or as a secure IGC Flight Recorder – in which case the approvals and limitations applying to that device will apply.

3.3. This equipment is not able to detect the operation of a Means of Propulsion (MoP). Gliders with a functioning MoP must do one of the following:

3.3.1. Disable it prior to flight to the satisfaction of the Official Observer

3.3.2. Carry a separate device acceptable to the Official Observer and the FAI Certificates Officer that records MoP use, or

3.3.3. Seal the MoP is such a way that the Official Observer can detect if it has been operated.

3.4. The Pressure Altitude functions of OzFlarm and miniOz may be used for pressure altitude evidence for a claim only if the Pressure Sensor is calibrated in accordance with Sporting Code Section 3. The procedures for doing this are in the Sporting Code for Gliding (SC3), Chapters 4 and 5 (particularly paragraph 5.3.2) and relevant Annexes. Otherwise, pressure altitude evidence from a separate barograph must be provided. Whichever way pressure altitude evidence is provided, a valid and current Calibration Certificate must be produced and the

barograph function must conform to the requirements of the Sporting Code including its Annexes.

3.5. If the Calibration Authority is unable to download the calibration data in IGC File format, an alternative electronic format acceptable to the GFA may be used, as detailed in the document GFA Calibration Guidelines for Pressure Sensors in Position Recorders.

4. Operational Requirements

4.1. This equipment may be mounted anywhere in the glider, however the Official Observer must be able to guarantee that the device was present in the glider throughout the flight for which the performance is claimed, and that the downloaded IGC flight file used to evaluate the flight came directly from that device.

4.2. Files downloaded from this equipment must be in IGC file format (so that they can be read unmodified by the SeeYou evaluation program) and must contain a security record that passes the check in the program vali-flarm-nonigc.exe. This program can be found at:

http://www.flarm.com/support/updates/flarm-igctools-1.4.zip

5. Authority

5.1. This approval has been issued by the Sports Committee of the Gliding Federation of Australia to permit the use of the specified equipment to be used for the validation of claims for Silver and Gold Badges (for which an IGC-approved Flight Recorder may also be used.

5.2. Any questions in regard to this document should be addressed to Tim Shirley at tshirley@internode.on.net or on 0417 268 073.

References: Sporting Code for Gliding, main volume and annexes B and C.
GFA Calibration Guidelines for Pressure Sensors in Position Recorders.