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.