Briefing to CANS

Ian Strachan, IGC CANS Representative

Scope: IGC structure, Policy on CANS matters

Briefing to CANS

All competition gliders carry GPS Recorders - this one carries 3

plus two PDAs with moving map

GPS: 1. Front panel 2. Rear panel 3. Flarm

Moving Maps: Front Cockpit, Rear Cockpit, driven by GPS

Briefing to CANS

Front cockpit of Nimbus glider

with 2 GPS read-outs & PDA with moving map

International Gliding Commission Structure

IGC BUREAU

|

Sub Committees

1. Sporting Code Section 3
2. ANDS (Airspace/Navigation)
3. GFAC (GPS/GNSS Flight Recording)

International Gliding Commission Structure

IGC BUREAU

|

Sub Committees

1. Sporting Code 2. ANDS 3. GFAC

2. ANDS = Airspace, Navigation & Display Systems

Chair: Bernald Smith (USA)

Members: Dr Angel Casado (Spain), Bruno Ramseyer (Ireland)

3. GFAC = GNSS Flight Recorder Approval Committee

IGC GNSS Flight Recorder Approval Committee (GFAC)

Created: March 1995

Members: Angel Casado PhD (Spain)

Marc Ramsey (USA)

Tim Shirley (Australia)

Ian Strachan (UK, Chairman)

Hans Trautenberg PhD (Germany)

Plus Technical Advisors

3 permanent, others as required

All the above will help FAI,

for instance by participating in CANS Working Groups

IGC GNSS Flight Recorder Approval Committee (GFAC)

IGC-approvals

43 types of GPS Recorders

from

16 Companies

First IGC-approval January 1996, latest August 2008

IGC GNSS Flight Recorder Approval Committee (GFAC)

IGC-approvals

43 types of GPS Recorders

from

16 Companies

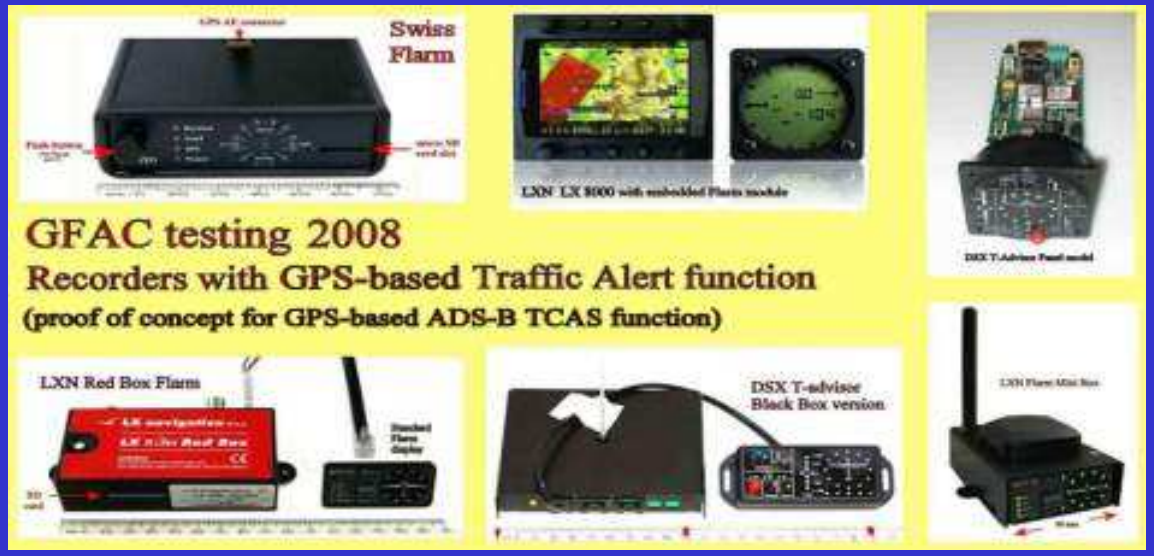
First IGC-approval January 1996, latest August 2008

Documentation: Each recorder has a comprehensive IGC-approval document describing its characteristics and limitations and showing how to use it.

Example - Flarm-IGC was 5 pages + annexes for pilots & OOs.

All on the web at fai.org/gliding/gnss

IGC GNSS Flight Recorder Approval Committee (GFAC)



GFAC Testing of GNSS Recorders

FAI Commission on Airspace and Navigation (CANS)

IGC position

Keep airspace as free as possible for Sport aircraft

FAI Commission on Airspace and Navigation (CANS)

IGC position

Keep airspace as free as possible for Sport aircraft

but

Where restrictions apply, work to gain access

by

1. Understanding the technology
2. Use of low-cost avionics designed for Sport aircraft

(that is, not designed for airliners)

FAI Commission on Airspace and Navigation (CANS)

SatNav systems

- Keep under review
  - GPS, Galileo, GLONASS, Beidou/Compass
- Understand the technology
  - Accuracy, area enhancements (WAAS, EGNOS etc)
  - (continue CANS Glossary)
- Use existing expertise within FAI
  - IGC ANDS & GFAC knowledge is available to all

FAI Commission on Airspace and Navigation (CANS)

Radar Transponders (Mode S - Selective)

- avoid mandatory fit for Sport aircraft if possible
- but recognise existence of
  Transponder Mandatory Zones (TMZ)
- low cost Mode S versions if forced to use.
  Battery power taken into account for
  gliders, hang/para gliders, balloons

FAI Commission on Airspace and Navigation (CANS)

GNSS-based systems - Flarm & ADS-B

Flight Alarm (Flarm) now in extensive use

- Short-range (5km) GPS-based traffic alert system
- Swiss Flarm claim 10,000 sold
- Short range/low power - can use non-air frequency
  - Frequency controlled through software
- Other products - 1. OzFlarm - 2. DSX Traffic Avoid system
- Need for stable R/T protocol for position data (Italy paper)

FAI Commission on Airspace and Navigation (CANS)

GNSS-based systems - ADS-B

Automatic Dependent Surveillance - Broadcast

Future need for low-cost ADS-B for sport aircraft

ADS-B is the system of the future

** This is probably the most important point **

FAI Commission on Airspace and Navigation (CANS)

GNSS-based systems - ADS-B

Future need for low-cost ADS-B for sport aircraft

ADS-B is the system of the future.

We need to work with it or we will be excluded

from much future airspace.

Need to work with ICAO, Regulators & advisors

Regulators include FAA, EASA/JAA

Advisors: include RTCA (USA), EUROCAE (Europe)

FAI Commission on Airspace and Navigation (CANS)

GNSS-based systems - ADS-B

Future need for low-cost ADS-B for sport aircraft

ADS-B is the system of the future.

We need to work with it or we will be excluded

from much future airspace.

Need to work with ICAO, Regulators, advisors

Persuade Authorities of need for

ADS-B equipment designed for Sport aircraft,

say below 170 kts, possibly VFR only.

Propose CANS form Avionics Working Group

to study future ADS-B and SatNav developments.

Utilise existing FAI specialists.

FAI Commission on Airspace and Navigation (CANS)

Aircraft battery technology

- Need for Gliders, Hang/para Gliders, Balloons
  - also Motor Gliders, Powered Hang/para gliders
- Review technology/cost/capacity
- Safety & cost issues - Lithium types
  - Some safe, some maybe not
- Who has knowledge within FAI?

Conclusion

1. CANS is important area for FAI

   literally vital for some sport aviation activities

2. Utilise existing expertise in FAI
3. Vigilance needed to preserve airspace
4. Future avionics needed -

   ADS-B suits many sport ac better than Transponders

   but ADS-B designed for sport aircraft, not airliners.

   Need to work with ICAO, Regulators, advisors

Questions?