TO: IGC Delegates 08Jan07
SUBJ: Mar07 IGC Meeting ANDS report
FROM: Bernald S. Smith,
IGC ANDS Committee Chairman
FAI & SSA RTCA representative
OSTIV/SSA Technical Soaring Coordinator
SSF/SSA EGU co-representative with Gene Hammond

Acronym List in Appendix I

ACTION ITEM- We will present nominations at the meeting for your consideration for election to fill the expiring terms of GFAC members. Current members are Ian Strachan (UK), Hans Trautenberg (Germany), Angel Casado (Spain), Tim Shirley (Australia) and Marc Ramsey (USA).

A - GALILEO The plan for a satellite system similar to GPS moves forward with much wrangling over details, not the least of which is industry liability issues. Of course, costs and who pays are at issue, but seem to be not constraining eventual satellite deployment. But negotiations twixt parties will be strenuous. EGNOS, to augment GALILEO when the latter becomes operational, is expected to be fully operational this March.

B - GLONASS As of this report's preparation date, as near as I can determine, and the sources of information don't always agree, there are 10 operable satellites. This Russian PNT system remains unsuitable for IGC worldwide use.

C - RTCA Same old, and some new, RTCA Special Committees and Task Forces and other activities, on which I serve for FAI and SSA, all of which are deemed of some potential import to the sport aviation community. I'll be attending RTCA's GPS SC-159 meeting this week (9-12Jan07 as you read this), and an ION meeting the following week, where likely I'll pick up some interesting tidbits, too late for this report, but given orally, or in a written addendum to this report, at your meeting.

As I continue to report on SC186, re ADS-B, it's interesting to see others in the glider community and sporting aviation are starting to pick up on it as something I've been talking about for years now, a system of likely great importance to sporting aviation for not only airspace access but to provide position info to other traffic. As I've mentioned in my report to FAI, it's potential importance to the airsport community is of import in discussions taking place re a mid-air between a glider and a bizjet near Reno, NV last year. It was a very close call, with loss of the glider and extreme bizjet damage, but no fatals. Transponders, or ADS-B, or both?

See Appendix II when you have nothing else to do, to read a recent series of emails referring to RTCA and EUROCAE and how important it is to be where the initial action takes place regarding rule-making.

D - TRANSPONDERS The USA gliding community continues to call for a nationwide glider transponder code and battery-saving turn-off approval. It looks like both the UK and Europe are going down the path of mandatory Mode S transponders

in much airspace. Kenya is fighting a battle re government imposed restrictions harmful to sporting aviation re transponder requirements.

E - MISCELLANEOUS
There are 30 operational GPS satellites as of the writing of this report and WAAS is alive and well.

Have I mentioned before that China plans to put into operation its own satellite system? It's called Beidou (compass) and will utilize 5 GEO and 30 MEO satellites. Three test satellites are already in orbit, with two satellites scheduled for launch this year which may be operational ones. 2491.75 MHz is their current transmitting frequency altho they say they're planning on broadcasting in the L band.

The latest I have on FLARM is that more than 5000 have been delivered. For more info on this ADS-B type device, see <www.flarm.org>.

A bank robbery was defeated, that is the money was recovered, because a small GPS/cellular modem was slipped into the robbers' cash bag. The tracking capability eventually led officials to the stashed cash!

F - FLIGHT RECORDERS (FR) A major concern right now is determining how to have FRs work with electric-powered MGs. Up to now, engine noise has provided a means to determine engine operation, but that doesn't work when the engine noise is less than just opening a vent window! In addition, several new FRs are under test pending approval. See the GFAC report for detail on their activity.

G - EGU I attend EGU meetings representing SSA's Associate member status, including Copenhagen on 25/26Feb06. Thusly, my report about RTCA and related activities to FAI last fall at the General Conference in Chile, included an extensive report on EGU. The report was very well received, with a request that it be made electronically available, which we did directly to some and to the FAI office for distribution. We plan to attend the EGU meeting this year prior to your plenary. I trust all you Europeans see the EGU reports and thus know of the marvelous leadership of Roland Stuck (France, EGU President) and David Roberts (UK, EGU 1st VP), who, along with other gliding experts, have had great success in ameliorating some of the EASA onus. I do note that some of 'our' important gliding people are joining EASA, so it's nice to know that we'll have some competency therein.

H - COTS I think many of us have received messages from disgruntled COTS GPS adherents bemoaning any indication that IGC will accept any COTS units for flight recording purposes. I have not been privy to what, if anything, is taking place from others within the IGC community, altho I see occasional strong commentary opposing any use of COTS for any level of badge/record/competition purposes.

-end of report-

Appendix I
ACRONYMS & DEFINITIONS
(a relatively short list of 33, compared to the long one we use)

ADS-B - Automatic Dependent Surveillance - Broadcast
ANDS - Air Traffic, Navigation and Display Systems
ATC - Air Traffic Control
COTS - Commercial off-the-shelf, particularly re GPS receivers
EASA - European Aviation Safety Agency
EGNOS - European Geostationary Navigation Overlay System
EGU - European Gliding Union
EUROCAE - European Organization for Civil Aviation Equipment
FAI - Federation Aeronautique Internationale
FLARM - no acronym could be determined
FR - Flight Recorder
GALILEO - no acronym meaning could be found anywhere
GEO - Geostationary Earth Orbit
GFAC - GNSS Flight Recorder Approval Committee
GHz - Gigahertz, one billion Hz
GLONASS - Global Orbiting Navigation Satellite System (Russian)
GNSS - Global Navigation Satellite System (generic)
GPS - Global Positioning System (USA)
Hz - hertz, a unit of frequency of one cycle per second.
IGC - International Gliding Commission
ION - Institute of Navigation
L band - frequency band of 40 - 60 GHz
MEO - Medium Earth Orbit (similar to GPS orbit distance)
MHz - Megahertz, one million hertz
Mode A/C - Transponder: A transmits one of 4096 codes set by pilot, as assigned by ATC; C, includes altitude
Mode S - Transponder; Selective, by aircraft's assigned address
PNT - Position, Navigation, Timing
OSTIV - Organization Scientifique et Technique Internationale du Vol a Voile
RTCA - no separate meaning, a private non-profit corporation addressing aviation requirements and technical concepts to advance the art and science of aviation and aviation electronic systems for the benefit of the public, with nearly 300 volunteer organizations, more than 25% of which are non-US, from the entire worldwide aviation community, functioning as a Federal Advisory Committee, to develop consensus-based recommendations on contemporary aviation issues, whose documents are most often used as the basis of government-issued TSOs
SC - Special Committee
SSA - Soaring Society of America
SSF - Soaring Safety Foundation
TSO - Technical Standard Order
WAAS - Wide Area Augmentation System

Appendix II
A recent series of emails recent series of emails
Date: Wed, 20 Dec 2006 08:27:27 -0700
From: bernald@juggernaut.com
To: Ian@ukiws.demon.co.uk, acasado@acm.org, hans.trautenberg@t-online.de, marc@ranlog.com, tshirley@bigpond.net.au, bruno@tcw.ie, dickie@bas.uk.net, tnp@spsys.demon.co.uk, bob.henderson@xtra.co.nz, 106025.2661@compuserve.com, emozer@deltamold.com, vladimir.foltin@lps.sk, eriksen@cegetel.net
Subject: multi-year notice
All,
I hate it when somebody says: "I told you so", but, I told you so. Anybody who has been reading my annual reports to SSA/IGC/FAI about my RTCA/EUROCAE activities, and the associated entities such as ION, CGSIC, etc. might remember some things said in those reports over the past several years that entirely support what Hans says about who controls the air. It's those who attend/participate in the activity that takes place prior to any regulatory action, to wit: RTCA and EUROCAE. In EUROCAE, there has been no one at any of the meetings I've attended, whether solely EUROCAE in Europe, or joint RTCA/EUROCAE in both Europe and the USA, representing anything but airline interests in Europe, except me, as FAI representative, and I've gone to very, very few EUROCAE-only meetings in Europe. OK, maybe I'm overstating it for dramatic impact, once in awhile the European IAOPA guy was there in Europe, roaming the halls of Eurocontrol, but with hardly ever anything to say and certainly nothing re airsport interests. And, FVHaaff was at a couple of EUROCAE meetings which discussed the low power transponder.

I negotiated a 75% discount in the EUROCAE membership fee for FAI/IGC/EAS/EGU and tried thru several folks to get someone to take it up, but was unable to persuade anyone to come up with the money (about Euro500 as I recall; EUROCAE membership fees are very expensive compared to RTCA, whose fee for FAI is USD475) so that an official presence could obtain. If you don't have the marbles, you can't play the game. Exceedingly bad advice from certain circles kept EAS/EGU out of EUROCAE, IMHO.

So, what success have we had w/RTCA? Who knows, at this point. Even tho we were able to set the stage with means of identification separate from just what size airliner there was in the sky (the original concept did not have any codes for sport aviation types, with only 4 codes; now we have 15 codes.) Even tho we insisted and won approval of low power units, will they be built in sufficient quantity to get that price break necessary for our adoption?

It's so interesting to see ADS-B being touted by some others at this point in time. I've given multi-year notice about it, and especially why the UAT system is likely to be so much better, but no voices in Europe or the Australian/Asia region were being heard so the radar community (air traffic controllers, etc.) won again such that no one outside the USA, or North America probably I should say, will enjoy UAT but instead be forced onto 1090E (read Mode S transponder, altho technically the transponder function would not be necessary).

And, I feel compelled to make this point again: transponders are interrogated,

they do not send a signal unless interrogated by some incoming signal, like ground radar or airborned TCAS. ADS-B is not interrogated to operate; it sends out signals without the need for any incoming interrogation signal. It is misleading to the uninitiated to label ADS-B as being something that transponds.

Oh well, I'll have another report for the upcoming IGC meeting, long again probably, to dissuade anyone from reading it. But, it's sure a lot shorter than the 3cm-thick documents that we produce in RTCA and EUROCAE. (now in electronic format - makes nice reading on those cold winter nites).

Bernald

PS: recall I mentioned earlier the interest in my report at the Santiago FAI meeting which was requested be resubmitted in electronic format by several attendees and to FAI for distribution. The latest version with updated material will come to you for the IGC meeting.

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Date: Wed, 20 Dec 2006 13:20:25 +0000
To: hans@trautenberg.net
CC: "'Bob Henderson'" <bob.henderson@xtra.co.nz>, "'Eric Mozer'" <emozer@deltamold.com>, "'Vladimir Foltin'" <vladimir.foltin@lps.sk>, "'Peter Eriksen'" <eriksen@cegetel.net>, "'Ross Macintyre'" <106025.2661@compuserve.com>, "Tim Shirley" <tshirley@bigpond.net.au>, "'Bernald Smith'" <bernald@juggernaut.com>, "Bernald Smith" <bernaldstephen@yahoo.com>, "'Angel Casado'" <acasado@acm.org>, "'Bruno Ramseyer'" <bruno@diginet.ie>, "'Dickie Feakes'" <dickie@bas.uk.net>, "'Tim Newport-Peace'" <tnp@spsys.demon.co.uk>, "Marc Ramsey" <marc@ranlog.com>, "'Pete Purdie'" <petepurdie@aol.com>, "Dickie Feakes" <dickie.feakes@btinternet.com>, "Fransois van Haaff" <fransois@interstroom.nl>
From: "Ian Strachan" <Ian@ukiws.demon.co.uk> Subject: Re: IGC Plenary 2007 - proposals that might need a vote

In message <4588F44B.10706@trautenberg.net>, Dr. Hans L. Trautenberg <hans@trautenberg.net> writes
>Hi Everyone!
>
>I know that it would be possible to build low end >receivers, but the requirements formulated by EuroCAE will >be so, that the low endsolutions can not be approved by >regulatory bodies. As long as there is no strong technical >involvement of sport aviation in standardization, the >situation will prevail. As far as I know, non of the >companies producing navigation equipment or even >transponder for the gliding community is taking part in >standardization. The standards are written by persons >paid by the big aviation industry, and the needs of the >gliding community are not reflected in the standards. >There is not even a class defined that would allow to >build GNSS receives suited for the need of gliding.

Precisely.

You make the case for urgent involvement of the GA and Sport Aviation community worldwide in this important area.

In some areas in or near controlled airspace, this could mean the death of much of GA and Sport Aviation if the Regulators simply go with the demands of "big aviation" and ignore out sector.

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Ian Strachan