



IGC 2019 Plenary Meeting
Agenda Item 6.2.4 (Annex)



FAI RTCA Specialist

Mr Bernald Smith

Annex to ANDS Report to the IGC Plenary 2019

January 2019

FAI RTCA Specialist Report to the IGC Plenary 2019

**Acronyms - see Appendix I*

RTCA – Drones! Who's in charge? Are (more) rules needed, and if so, when will they be adequate? Your daily papers have the reports about closings of major airports, based upon sightings of nearby drones.

The RTCA SCs, EASA, FAA and everyone is trying to keep up with the demand inherent with the variety of opinions as to how much airspace to 'give' to drones, what the requirements for drones should be in that airspace, how much to 'restrict' them/their operators from, and how to differentiate rules between drones within view and BVLOS.

I attended ION and CGSIC meetings in Miami last fall, picking up the usual amount of info pertinent to GNSS as it may affect our airport community.

FLIGHT RECORDERS – GFAC will be reporting on their activity including corresponding with FR manufacturers re IGC-approval updates and security matters to evaluate whether there is any need to change the approval level (all flights, badges up to diamond, all badges and distance diplomas) (including cancelling approval) of a particular FR due to the need for continual upgrading of security coding to keep up with the world's hacking capability as well as any need for updating to other improved/changed requirements.

I have made a request thru ANDS for IGC to change the HAFR requirement for pre/post flight validation with a GPS simulator because it is unnecessary, costly and a time-consuming procedure. The electronics involved are well-known for stability by experts, including SLAB# which did the Perlan validation, but I don't know whether my request is on your March IGC meeting agenda or not.

**See Appendix II*

OSTIV – The OSTIV President Rolf Radespiel is holding a special meeting called for your upcoming IGC meeting in Turkey where the matter of safety in contests will be addressed. He has invited SSF Chairman Rich Carlson and me to attend that meeting, which we will.

UNOOSA ICG – As FAI's appointed representative, I attended the annual meeting in Xi'an, China where the usual subjects of jamming, interference, spoofing, UAVs, etc. were extensively addressed. After speaking on how FAI is dealing with the issues of its new group of UAVers* who want airspace access and how all the other airport disciplines are concerned about the dangers of unseeing and unseen UAVs, it was interesting to note how many other groups are concerned about, and addressing, such issues. And other groups are mostly non-aviation as GNSS is worldwide in use for much, much more than we use it in aviation. FAI's Visa Matti attended most of the meeting with me; we have some ideas on how FAI can contribute to the discussions at ICG.

**See Appendix III*

FAI GENERAL CONFERENCE - I attended the Luxor, Egypt FAI GC last fall, notwithstanding many problems communicating with Egypt. Immediately thereafter, at FAI's invitation, I went to the 1st FAI World Drone Racing Championships in Shenzhen, China, preceding the above mentioned ICG meeting. The next FAI GC is 25/26Oct19 in Marrakech, Morocco which I plan to attend. The last time I was in that country was with a US Navy C118 (DC6) decades ago of the last century!

**See Appendix IV*

Bernald Smith

See also the Appendixes are on the next two pages.

Appendix I ACRONYMS & DEFINITIONS

ANDS	- Air traffic, Navigation and Display Systems
BVLOS	- Beyond Visual Line Of Sight
CGSIC	- Civil GNSS Service Interface Committee
CV	- bio
DC	- District of Columbia
FAI	- Federation Aeronautique Internationale
FR	- Flight Recorder
GC	- General Conference
GFAC	- GNSS Flight Recorder Approval Committee
GNSS	- Global Navigation Satellite Systems
GPS	- Global Positioning System (USA)
ICG	- International Committee on GNSS (United Nations)
IGC	- International Gliding Commission
ION	- Institute of Navigation
JED	- Jidda, Saudi Arabia (Jedda)
NAA	- National Aeronautic Association
OAK	- Oakland, CA
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 to develop consensus-based standards for contemporary aviation issues
SLAB	- Space Rendezvous Laboratory
SSF	- Soaring Safety Foundation
UAS	- Unmanned Aeronautical System
UAV	- Unmanned Aerial Vehicle
UNOOSA	- United Nations Office for Outer Space Affairs
VA	- Virginia

Appendix II

In late November I attended in Arlington, VA (near DC) the NAA dinner presentation of an FAI award nomination I made re Stanford Prof. Simone D'Amico, the FAI Group Diploma. He had made his SLAB available to me for use managed by Todd Walter and grad students for GPS simulator testing required of the FRs used in the successful 2018 glider altitude record flight to 76000' in Argentina by Jim Payne/Morgan Sandercock in the Airbus-sponsored Perlan II glider, which has a pressurized (8.5psi) cockpit.

Appendix III

As a result of the kind invitation from FAI Secretary-General Schodel I had a half-week w/VIP status at FAI's First World Drone Championships in Shenzhen, China. This allowed me unlimited access to everything at the drone racing site: the pilots*, judges, jury, media, everything behind the scenes and the extensive electronics utilized for everything, including dual scoring equipment in case of need for backup. Watching it on a video/TV is not even close to how much better a look I got by my access right in the thick of things. Forget daytime viewing; you've got to see it at night with lites on the drones and the track to be able to follow their flight. There wasn't a single race in which at least one drone crashed due to being mishandled by the pilot running into something usually! There was netting over all the operations trackside area of the arena (a soccer field size place); I saw why because several times pilots lost control of their drone which then flew wildly until crashing! (They were quad rotor drones, about 16 inches in width with 6 inch 2-bladed rotors.)

* Drone racing is a sport type where participants control drones equipped with cameras while wearing head-mounted displays showing the live stream camera feed from the drones. Similar to full size air racing the goal is to complete a set course multiple times. The matter of control loss is of import to all of aviation!

Appendix IV

Luxor, Egypt – a week-long FAI GC including me meeting w/HRH Prince Sultan Bin Salman Bin Abdulaziz Al-Saud of Saudi Arabia (Saudi astronaut & very experienced pilot including gliders), with much pilot talk, picture taking, TV, insistent invitation to visit him for us to go flying together, CV submission, and a video interview, all because of my 1952 connection w/his grandfather King Ibn Saud, which is a long different story.

Prince Sultan, in his early 60s, was invited to come from Saudi Arabia to Egypt for the GC because of his involvement in aviation (he has 8000 pilot hours). He was very affable and pleasant to visit with; he gave me books about gliding in Saudi Arabia. The reason for our connection is that in 1952 I flew/delivered from OAK to JED a DC4 with a special hydraulic-operated throne to transfer a person from ground to aircraft, for his then very ill grandfather King Ibn Saud. Prince Sultan wants as much info as I can supply about that experience for another book he is writing. I guess I'll go fly gliders there w/him! In gliding, one never knows where/when the fun will come!

Egypt was interesting in that it was almost impossible at first to make reservations/contact due to problems in that country that were finally overcome allowing credit card for registration/hotel use and bank transfer for ticket payment for travel on a once-a-week-service Egyptian Airlines non-stop from UK to Luxor, thus bypassing Cairo. Security is VERY high - from the airport to our hotel we had many road stops for military checking of us and a visible military presence. Our hotel was always guarded by 4 military men heavily armed w/visible heavy arms + an airport-like security check to get into the hotel. Travel outside the hotel did not look hospitable! Except we did do the tour, well managed and security-based as described above.



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