IGC 2018 Plenary Meeting

Agenda Item 8.2.2.1a

Proximity Analysis Report to IGC Plenary 2019

Terry Cubley. Australia

Jan 2019

Proximity analysis

During the Benalla world championships, Australian pilot John Wharington developed a method for analysing igc files to detect and measure how often pilots fly close to other pilots. It identifies pilots who are more tolerant of risk, and there is good alignment with feedback from other pilots as to who they would like to avoid flying with on task. This was displayed at Benalla and was well received by pilots and Team Captains and enabled some good conversations.

1. The analysis allocates a "safety bubble" of radius 25m around each glider.
2. It measure the number of times that one glider penetrates another glider's bubble, and for what time and distance.
3. If a glider enters and then leaves and then re-enters the bubble within 10 seconds, this is counted as one penetration, not two. ie. 'one incident'.
4. The top and bottom of the sphere is cut off to reduce excess incursions whilst thermaling, and also because of the lower accuracy of altitude measurement.
5. The diagrams in Annex B below shows the scale of the sphere which indicates that it is relatively small and most pilots would be very uncomfortable if others flew into their bubble.
6. We note that the team pilots are not getting raised proximity reports compared to those who are not team flying. Team pilots tend to treat each other with respect.

Data analysed

The program uses all data from all igc files on each day and detects and measures any incursion between any two gliders, within a class and across all classes. This data is used to create a chart showing the number of incursions and the total distance involved for each pilot.
This provides useful data on any one day, and the totals over a number of days gives a clear picture of pilots who are seen to be too comfortable flying close to others.
See Annex A for charts for Open Class and for Club Class in the recent 2018 world championships.

It is proposed to provide this data to the Championship Director and Safety Officer and Chief Steward at all of our championships so they can talk to pilots who are consistently getting a high proximity score.
The CD could show the results of this analysis at briefing so that pilots with a high proximity score can determine to change their own behaviour.

Web page for analysis

The guys are proposing to set up a web page which will access soaring spot for the IGC files and then publish the proximity analysis for all comps that are listed. The organizers/steward could then access the data directly from the proximity web page, so no technical skill is needed. We could put a password to limit who can access if that was beneficial?

They suggest that the server costs etc would be something like $50 per month, so we would need to find the money - maybe a sponsor? maybe a fee to the comps? maybe payment from IGC?

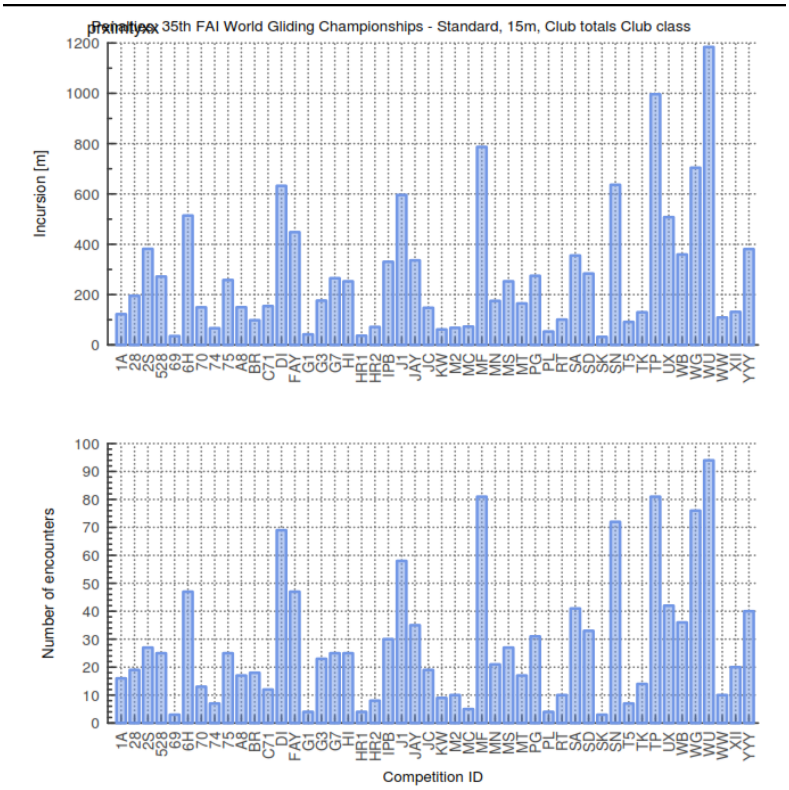
They also say that the web page could produce a short video of the close encounters which could be used by the steward or safety officer to review incidents.

We should put something into the rules or Local Procedures which advises pilots that this data is being collected and will be used for this purpose. We should consider seeking support from Naviter so they are happy for us to access the data directly from soaring spot - we don't want them stopping us accessing it.

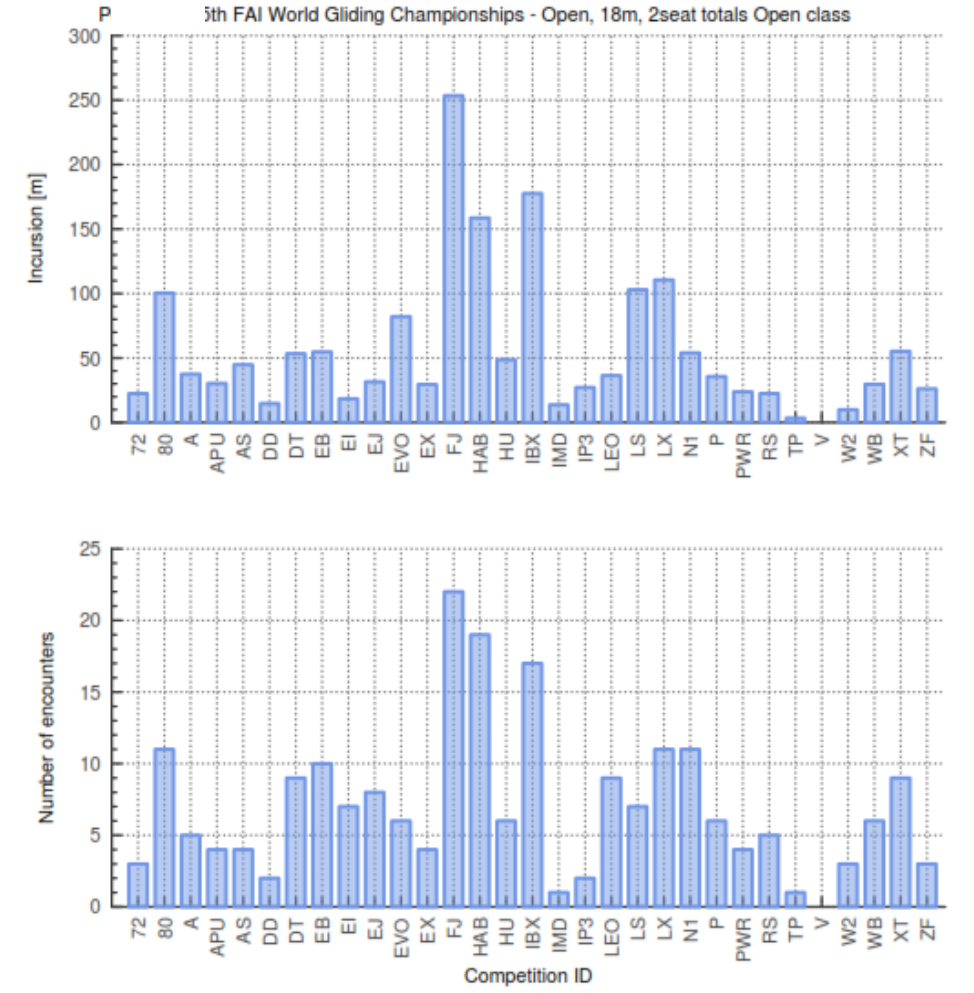
I seek Plenary support to use this proximity analysis for the 2019 Junior worlds and Women's worlds.

Annex A

Proximity report for 2018 Club Class at Ostrow



Proximity report for 2018 Open Class at Hosin



Appendix B: Safety Bubble

Radius of bubble is 25m. Drawing to scale

None of these situations would be counted as an incursion