20th FAI EGC 18m, Open and 20m Classes.
IGC's Stewards Report.


Turbia airfield at Stalowa Wola is in the south eastern part of Poland and while it has been used as venue for Polish Nationals on many occasions this was the first time they hosted an International competition. It was obvious that a great deal of work had been done on many parts of the facilities, briefing hall, information centre and adjacent ablution facilities, and the tie down area, in preparation for this competition. The Competition organisation was staffed by volunteers from the club who worked very hard to make the competition a success. Sadly the weather did not cooperate and 8 of the scheduled 14 competition days were unflyable.

Angel Casado, (AC), was the Jury President and his expertise with tracking, Silent Wings, and many other IT related issues was an invaluable resource to both the competition in general and to this Steward in particular.

The Championships were organised by The Aeroklub Stalowa Wola (ASW) who operate the airfield. The club have professional secretarial, management and technical personnel, but the remainder of the organisation was made up of volunteers who had given up their time to run the competition. Most of the young people spoke some English, while the majority of older people only had a limited command of the language. Despite this, there was friendly and welcoming atmosphere and competitors clearly enjoyed themselves.

The designated Contest Director was Darius Lukawski, but as his ability to speak English was limited, the Deputy Director, Jaroslaw Rudzinski, who was a fluent English speaker, took over as the front man for the organisation at the end of the practice period. Despite the fact that he had neither competition

experience as a competitor nor as a director he did a really good job and was very willing to both seek and take advice. The competition organisation worked very well. The only negative was that the airspace briefing on the first practice day was sub-standard and as a consequence a number of competitors misunderstood the status of some of the airspaces. This became the subject of the only protest of the competition.

The hangar used for scrutineering was large enough for the 18m gliders to roll straight in, but the larger, 20m, 21m, 29m span gliders were more difficult and time consuming to manoeuvre in and out of the hangar. The scale system worked accurately and efficiently. The Safety Pays list of safety features was part on the form used for scutineering, but pilots were left to complete this without explanation. Some pilots seemed remarkably ignorant about the safety features built into their gliders. See attached spread sheets for details. The majority of the pilots completed the simulated bale out exercise preceded by a general discussion on decision height, and categories of situation. See attached notes. Some pilots were missed because the CS couldn't be in two places at the same time. Tow out reference weights were calculated accurately and no problems were encountered with the daily weighing on the way to the grid.

The opening ceremony was a public event at a recreational centre in the city. The teams were introduced to several hundred spectators by a number of local politicians. AC, as Jury President opened the competition on behalf of the FAI. Most of the ceremony was conducted in Polish and was not understood by the majority of the competitors who were kept standing for the duration of the ceremony which lasted for almost an hour.

WhatsApp was used as the primary communication channel with competitors. Messages were clear and sent out timeously. The Official Notice board was maintained in the Information centre and duplicated on another board in the Briefing hangar. Airspace and turn point files were maintained on the Competition web site.

The pilot briefing room was a newly converted hangar. Teams were provided with their own tables and chairs. The sound and projections systems were good and all participants were able to see and hear the presentations.

Met Briefings were provided by forecasters from IMGW, the Polish meteorology service. Forecasts were generally accurate. There were no occasions where there major unexpected changes in the weather. In addition to the morning briefing, teams were provided with tokens to access the Topmeteo's gliding weather site.

There was a Safety Presentation at every briefing. Some were general points, others were specific to incidents that occurred in previous days.

Despite their bid only referring to airspace restriction to the south associated with the airport of Rzeszow, there was significant piece of military airspace to the north of Turbia on an east west axis. This was active during the practice period and tasks were restricted to tracks on an east/west axis. AA's were use to mitigate the risks created by having reciprocal tracks but as the corridor was relatively narrow this wasn't effective. This airspace was open during the days of the Championships providing more task flexibility making it possible to have tasks with north south legs to create lateral separation. Assigned areas were used on 5 of the 6 competition days and alternative tasks were provided on days when the start of launch was likely to be delayed. A sniffer was used to determine conditions before launching the grid.

For all practical purposes the grass airfield consisted of a single runway12/30 that was 260m wide at the west end and 600m wide at the east end. The surface was quite rough in places and some of the takeoff runs and landing rollouts looked quite uncomfortable.


After the period of prolonged heavy rain the surface became quite soft making it impossible for the self launching gliders to accelerate fast enough to self launch. On the last day, after 5 days of heavy rain, all gliders needed assistance to get rolling after the tugs had taken up slack. Fortunately there was sufficient young muscle available to give the necessary push!

Clearly a lot of thought and expense had been put in to the provision of water and electricity points that were conveniently placed to serve all tie down areas. There was a small restaurant facility on the airfield that provided good quality food at a reasonable cost, but had a limited capacity to serve customers.

The camping area was relatively restricted, tents, caravans and motor homes were closely packed. There were enough good quality toilets and showers. After persistent heavy rains conditions underfoot became very muddy and the rising water level became a challenge for people in tents. Electricity and internet were available.

The tug fleet consisted of three Zlin turbine C'melaks, a Yak 12 and a Wilga. The Wilga proved unsuitable for the 18m class gliders, it just didn't climb at the tow speeds required by these gliders and the situation was worse for the Open and 20m gliders. The Yak 12 was slightly better, but the climb performance was still weak making the climb out off runway 12 very uncomfortable as there were no options for a safe landing in the event of a launch failure. After a couple of days the use of the Wilga and Y12 was discontinued. The C'smelaks however, were superb, and were able to turn round launches to 600m in just less than 4 min. The time to launch the three classes was adequate when the airfield was dry enough for the self launching gliders in the Open and 20m Class to use their engines, but after several days of persistent rain the surface became soft and the self launchers couldn't accelerate fast enough to get flying speed. Self launchers resorted to taking aerotows and this extended the total launch time to 1hr and 40min.

Two scales were positioned en route to the grid and all gliders were weighed on a daily basis. Their weights were checked against the reference weight calculated at scrutineering. Local Procedures prescribed "Free Gridding" within each class, this seemed to work quite well and relieved the organisation of the admin involved with rotating grid rows. There was an accusation that some gliders that had joined the grid after the grid had closed and were launched before the countdown to the gate opening was started. Once reported, this situation was monitored on the remaining competition days and it did not recur.

The comprehensive and well structured web site was up and running well in advance of the start of the competition and was kept up to date as the competition built up. The Face book page for the competition was used as the primary channel of communication that included live screening of every briefing with sound. The opening ceremony was broadcast on National TV. National radio carried extensive coverage of the first competition day and there were live interviews on the grid.

OGN was used for tracking and there were options on the web site to watch races by class. The Local Procedures specifically didn't prescribe the mode that competitors should select for their Flarm's, and some chose not to be tracked. Angel Casado was trialing a limited number of his new OGN Tracking units and these performed very well. There were no public screens displaying the races.

Jonker Sailplanes opened the social events by providing food and beer to brighten up the evening after the first scrubbed contest day, later in the week the Polish team invited everyone to their National Evening. During the second week Teams put enormous effort into the International evening and it was a great success. In addition the organisation arranged a number of interesting excursions for teams on the non flying days.

The LP's were approved by the IGC Bureau well in advance of the start of the event and were specifically changed after the IGC Plenary meeting to give effect to the decision to give pilots the option to select "no tracking". During the course of the competition an addendum to the LP's was agreed with team managers to allow gliders with MOP's to use them for virtual relights. This rule only applied to the 20m class, being the only class where all the competitors had a MOP.

During the course of our other work on Flight Records we found that some Flarm signals were only giving a limited range, so pretty much useless for collision avoidance purposes.

SeeYou Competition was used for scoring and all results were checked by the JP, AC. The protocols for publishing results were correctly observed.

Only one protest was received, this related to warnings given for airspace infringements on the first practice day. The protest was upheld by the jury on the basis that the pilot briefing on the first practice day did not properly define the prohibited airspaces.

The Safety Committee was constituted on the first contest and met on an as required basis. It was extensively involved in the discussions surrounding the incident on day 4 in the 18m class. In addition to the Safety Box that was placed in the briefing hall. Flytool was set up for the competition and the AC built a PowerPoint presentation to guide pilots through the registration process. However the registration process does require some effort and not many competitors took the trouble to complete the process. After some discussion, AC wrote an App that would do this from the SeeYou competitors list, the idea being that this could be done at the start of the competition and a fully populated system could be handed over to the organisers and safety steward.

Statistically this was a safe event in as much as there were no accidents, but there were a number of incidents one of which could have had a really serious outcome had it not been for the element of luck. The Proximity Analysis system is giving us a detailed insight to competitor's behaviour and over the period of a competition we can identify pilots who are push the safe proximity boundary to the limit. However, close proximity in gaggles are not always a consequence of reckless or aggressive behaviour and as we discovered in discussion with a number of pilots involved in these encounters is not noteworthy enough to be remembered. The major incident occurred when a group of three gliders ran into the start and had a very close encounter with gliders thermaling close to the start line. Judging from their altitudes it is almost certain that the thermaling gliders had reached cloudbase, with all that implies. So it looks as though these pilots were pushing the limits of VFR flight and were prepared to sacrifice safety for a few additional meters of height advantage. In summary, pilot skill is not questionable, but attitude to safety is.

The incidents we investigated are detailed in appendix 1.

The organisers produced a procedure to manage emergencies in the event of an accident. In the event of an incident the primary response would be from the local emergency service. There is a state hospital within a few km of the airfield.

Suggestions for future Championships:-

- During the official practice while both scrutineeering and practice competition days are going on there is too much work for just one Steward to be able to attend to the necessary detail. So if a second steward isn't available the organisation should be required to provide a surrogate steward for that period.
- A Flarm check report should be included as a mandatory document to be submitted during scrutineering.
- Some form of height limit to stop thermaling at, or close to cloudbase prior to the start, but I don't have any suggestions that don't introduce other complications that are equally dangerous.

R. Bradley
IGC Steward.

Appendix 1 – Incident report investigation.

Practice day 1 incident between GT and LEO. The incident did not show up on the PA and was not reported for investigation until later in the competition . GT & LEO on reciprocal courses same altitude closing speed 360kph and 400m apart. GT saw another glider and pulled to climb above LEO's flight path. Separation at point of crossing ~70m. Both pilots remembered the incident but didn't know who the other glider was. GT Flarm was not functioning due to being the old version, We were not aware of the incident until the pilots brought it to our attention. The task that day was an AAT with areas to both the east and west of Turbia, so the risk of conflict between gliders on reciprocal tracks was high. The task geometry was created by airspace restrictions.

Incident 16/5 between LV, Berhard Leitner and EX, Riku Rissanen Incident did not show up on PA. Investigated after report from pilot of EX and the analysis of the FR showed that LV, the glider joining the thermal only just missed EX who was already established in a thermal. There were a number of other gliders in the same thermal above EX. Discussed incident with two pilots, pilot of LV said he did not see EX. LV apologised for the incident.

Incident 17/5 18m Class Day 3 between 110 and i7. Proximity analysis showed the two gliders very close together in a thermal for half a turn. The two pilots concerned were shown the event but neither could remember a moment when they thought that they were in danger.

Incident 18/5 – Start line gaggle. After Briefing on morning of 19/5 pilot of PES came to speak to me about an incident he had just before the start on day 4. He wasn't very specific. I said I would look at the FR's. He didn't mention any other gliders so I just pulled the FR's of a few gliders that started at about the same time as PES.

I didn't get the opportunity to start working on this until that evening, when the seriousness of the incident became apparent. We then downloaded the FR's of all the 18m class and realised the seriousness of the situation.

On morning of 20/5 we prepared a video that we shared with the three safety pilots before briefing. We decided to invite all the affected pilots and team managers to the meeting to show them the video. This was scheduled for 15:00hrs but was brought forward to 12:30 when the open class, the only class scheduled to fly, was cancelled. The pilot of PES was reported to be suffering from ear infection and was not present. As the video reached the critical point there was complete silence which lasted for minutes before the blame game started. There was considerable discussion some quite aggressive about the uselessness of Flarm and that the gaggle was flying in cloud and couldn't be seen. Conclusion was that we would make some recommendations and that the video in unedited form would be shown at the next briefing on 21/5. We shared this with BS there was a telephone conversation to confirm.

21/5 - CD declared the day a rest day, so briefing not compulsory. The majority of teams were present but not the pilots of PES and D3. The pilot of PES was at the doctors with an ear infection. We made the point that showing the incident was not to try and apportion blame, but to highlight a dangerous situation to ensure it didn't happen again.

22/5 - Showed video again at Briefing. Pilots of PES and D3 were not present. No tasks were set. Met with the Safety pilots after Briefing and we agreed that the three pilots coming into the thermal against the direction of turn should be censured and that a start height limit should be imposed for remaining competition days. This recommendation was passed on to the director verbally. Discussed later in the day with the CD. He reported that he had spoken to the Polish TM about the absence of the pilots concerned and the anger this had generated with some pilots and would make a statement at the next briefing.

23/5 - CD's statement - as the pilot of PES was honest enough to alert us to incident and that as there was doubt about whether or not the gliders that were in the thermal were in cloud or not we should not blame any specific individuals but use the incident as a lesson. The pilot of PES was at briefing and we subsequently we went through the video with him.

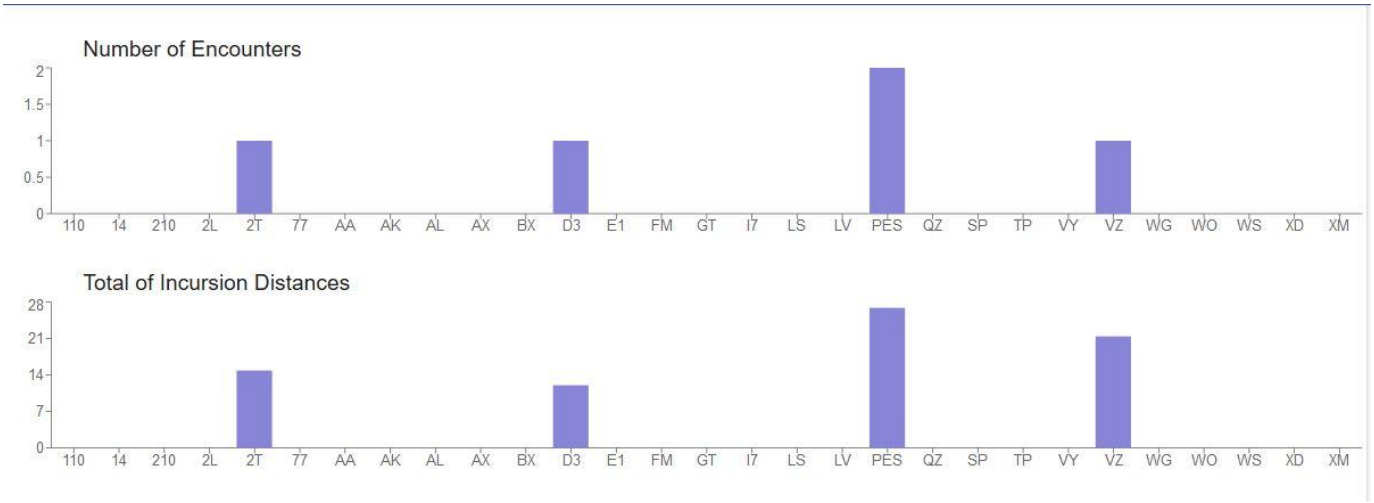
He apologised for the incident, but said they didn't deliberately set out to fly through a thermal to cross the start line, they just didn't see any of the gliders that were shown on the video until the very last seconds and then only the two or three that were very close. This begs another question, but I think we have reached the point of exhaustion.

23/5 - AC ran all our flight records from Day 4 through the Flarm range tool. We found that PES's flarm was virtually useless, but in a broader context 50% of those tested had a range of less than 4km which is considered as sub optimal for Flarm.

## Appendix 2 – Proximity Analysis.

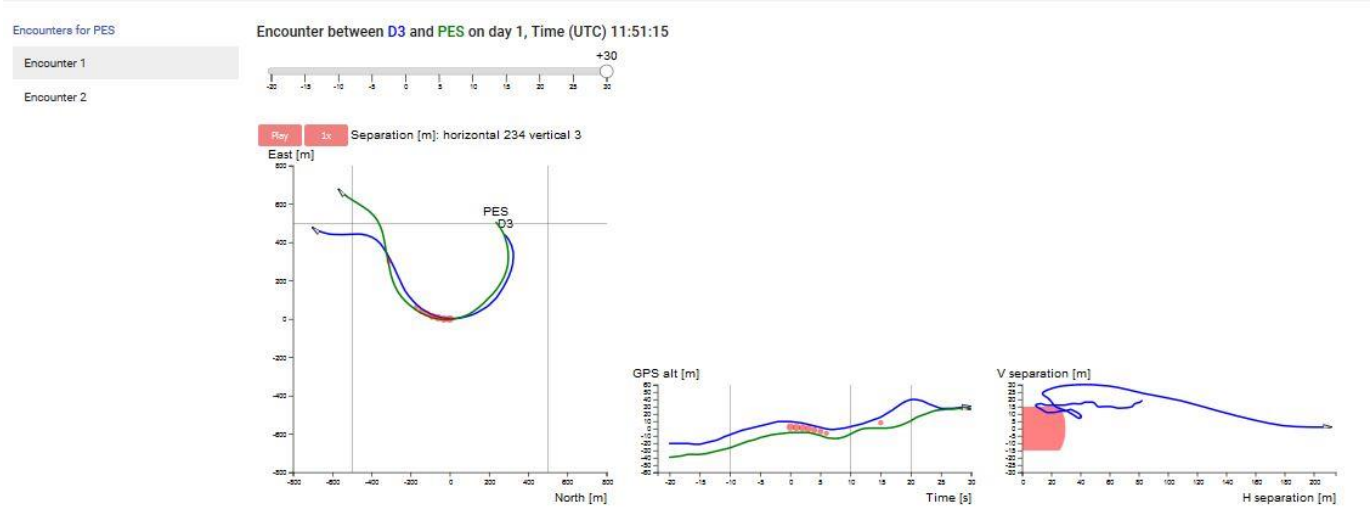
We must give a vote of thanks to Matt Gage from Australia for his excellent work not only making his Proximity Analysis package available to this competition but for development work he undertook during the course of the competition to enhance the value of presentation. The *.IGC record used for the PA also includes some valuable data about Flarm warnings, but this is encrypted and not in open format. AC however, was able to arrange a Non Disclosure Agreement between Flarm, AC and MG that will make it possible for Flarm warning data to be included in the PA. This will add a new dimension to future versions of the PA.

The PA draws a 30m diam sphere around each glider and looks for situations where one gliders sphere overlaps with that of another glider. This is called an Encounter. The flight records from all gliders in all classes are analysed to look for situations where spheres overlap and to calculate the incursion distance. Height calculations are based on GPS altitude and while this may not be correct in absolute terms it is accurate in relative terms. The analysis is available on a daily and overall basis by class and in histogram form that shows the number of encounters per glider and the incursion distance per gliders.




There are options to look at where the encounters occurred geographically.

Or to drill down in to the individual encounters to be able to look at them in detail.




This is an impressive amount of information, but we need experience working with the data and correlating what we are seeing on the analysis with the pilot's perspective. The problem is that unless the encounter was dramatic enough to get the pilots attention it's difficult for them to recall non events. What is clear, is that in a stable situation pilots are quite relaxed flying in close proximity to each other.