



February 2017

Report from Safety Group (SFG) to the IGC 2017 Plenary

We always talk about safety and the risks our pilots take at championships. We have the feeling that the risk and the accidents rate are not acceptable in our main competitions, but we do not handle the hard data to make a good analysis.

If we feel that information is important, then we need to make better storage data procedure and analysis every time we have an accident, incident or even further, to analyse the unreported incidents. There is a lot of information on every report that our stewards, referees and juries make after the championships take place.

Now, there is also a new software developed in Australia during WGC in Benalla by Mr. John Wharington, the possibility to have all the unreported incidents plus many more information as will be presented during this plenary (proximity, near miss, geographical factors to gaggles, meteorological factors to gaggles, personal behaviour, etc.

The intention of this report is to show some statistics about the accidents/incidents in our main championships. Its is difficult to make strong conclusions at this time, however it provides good approach about where to go to find the main issues we should address for the future.

At the end of the report, we make some recommendations about improving safety, to be tested in competitions. If they get validated after implementation, they could turn into proposals for the near future.

Statistics:

In order to start with some information, we choose major championships from 2010 until today. In total 26 reports were studied. These reports have standardized content, however the way the information is added varies a lot between IGC officials.

The challenge is how to extract valuable and simple information to make some statistics. The first step was to establish a quantitate classification of accidents and incidents. We are not inventing the wheel, but tried to make as close as our championships work.

	ACCIDENT		
	LOW	MEDIUM	HIGH
PILOT OR ANYBODY IN THE COMPETITION (PUBLIC, STAFF, MEDIA, ETC.)	Small injuries. No medical attention	Injured pilot. Some scratches. Medical attention on airfield only.	Severely injured, medical attention on Hospital or even killed
GLIDER	Slight damage. Fixed overnight	Damage to glider: parts to be changed. Not easy to fix, but still on competition. Maybe skips one or two days of competition	Severely damaged. Glider out of competition
THINGS AROUND THE AIRFIELD OR OUTLANDING FIELD (cables, animals, irrigation, poles, houses, glider trailers)	Slight damage	Things that can be fixed fast and does not require resources.	Huge damage. Normally requires important resources, time and money

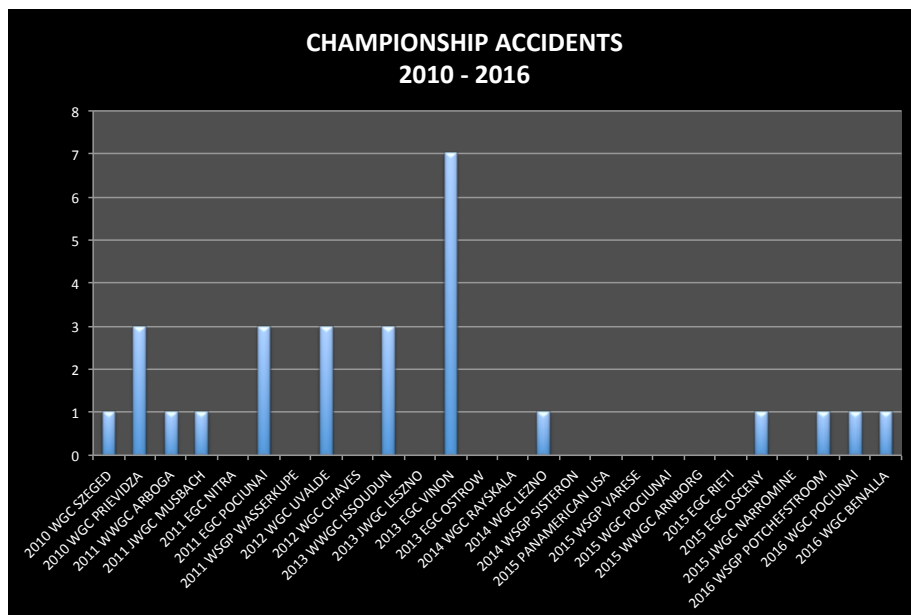
Note: This is just a guidance for statistics purposes. An accident can have a mixture of above classification, to be selected by IGC Steward when making report as per his/her judgment.

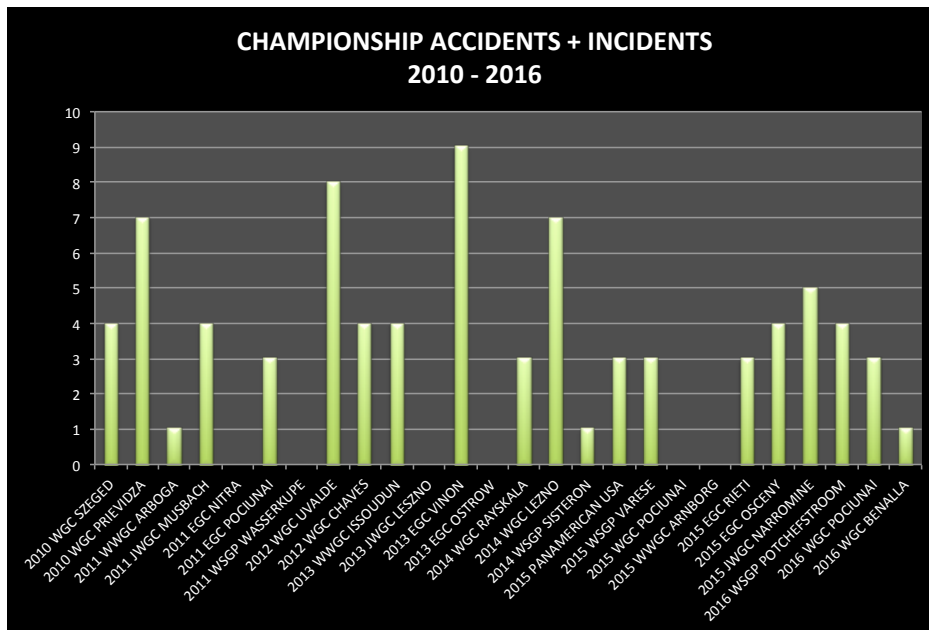
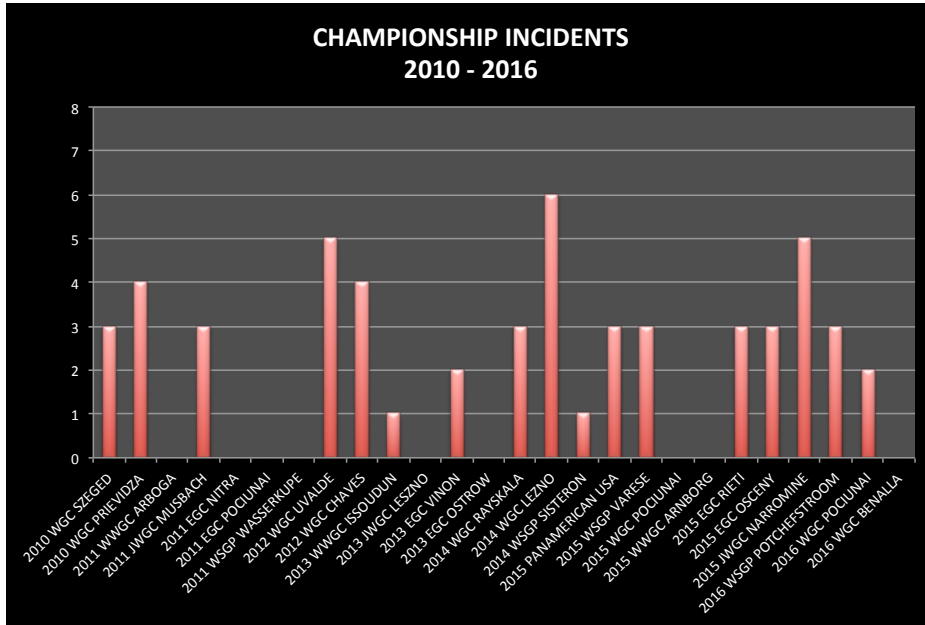
Using above chart, we considered incidents as the risk of having accidents. Example: Incident that can cause MEDIUM accidents will be considered as MEDIUM.

Please find attached ANNEX 1, which summarizes the information extracted. It includes: competition name, summary of important comments, classes, n° of accidents, n° of incidents, classification of accidents and incidents, additional information.

From ANNEX 1, we made some graphics:

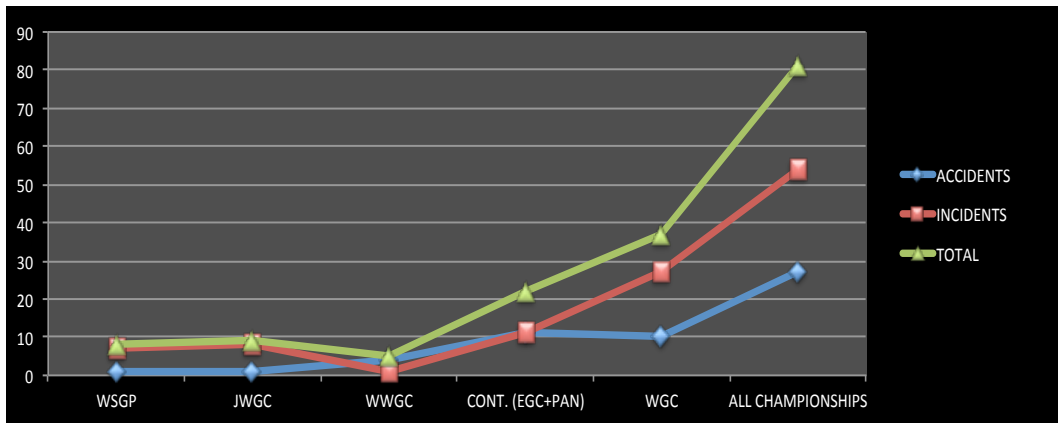
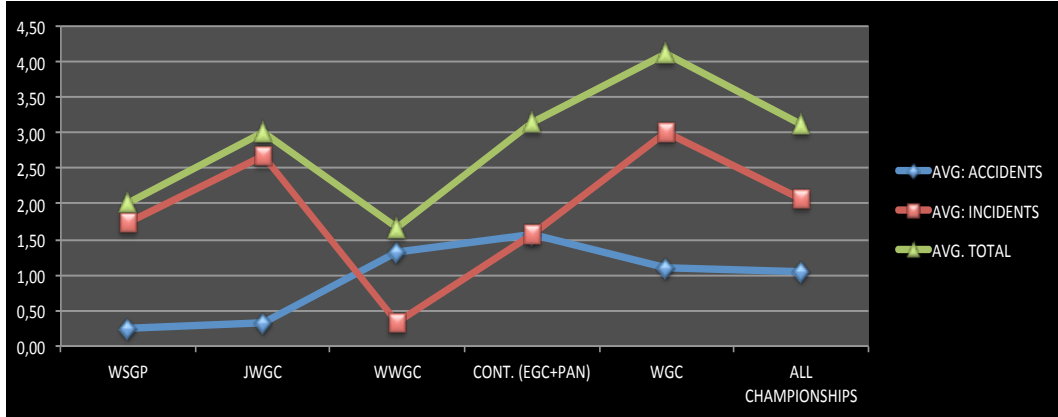
a.- considering each championship, focusing on number of accidents/incidents:





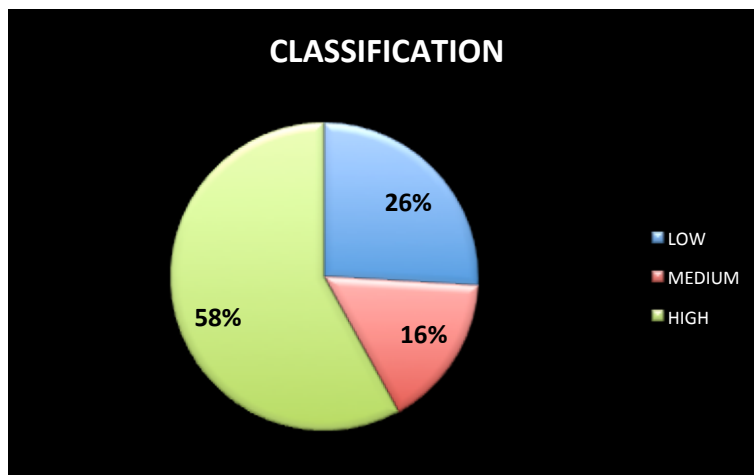
b.- considering type of championship, focusing on number of accidents/incidents:

CHAMPIONSHIPS 2010 TO 2016	TOTAL CHAMP.	ACCIDENTS	AVG. ACC.	INCIDENTS	AVG. INC.	TOTAL	AVG. TOT.
WSGP	4	1	0,25	7	1,75	8	2,00
JWGC	3	1	0,33	8	2,67	9	3,00
WWGC	3	4	1,33	1	0,33	5	1,67
CONT. (EGC+PAN)	7	11	1,57	11	1,57	22	3,14
WGC	9	10	1,11	27	3,00	37	4,11
ALL CHAMPIONSHIPS	26	27	1,04	54	2,08	81	3,12



c.- considering all championships, focusing on classification of accidents/incidents:

CHAMPIONSHIPS 2010 TO 2016		ACCIDENTS	INCIDENTS	ACC+INC	TOTAL ALL CHAMP. (ACC+INC)	% ALL CHAMP.
LOW		1	20	21	81	26%
LANDING/LAUNCHING	Landing wheel up		6			7%
	Hard landing		5			6%
	Checking engine		1			1%
	Hard launching	1				1%
OTHERS	Others		8			10%
MEDIUM		6	7	13	81	16%
ARRIVING / FINAL STAGE	Flying low arriving		3			4%
	Outlanding near airfield.		2			2%
	lake outlanding		1			1%
LAUNCHING	Grib staff hit while launching		1			1%
HIGH		20	27	47	81	58%
FLYING	Mid air collision	3	2			6%
	Spin unrecovered	1				1%
	Flying pattern		2			2%
	Flying in clouds		1			1%
	Before starts		3			4%
	Dangerous flying gaggles		7			9%
ARRIVING / FINAL STAGE	Collided to mountain	1				1%
	Collided with house	1				1%
	Final turn		3			4%
	Hazardous approaching		3			4%
LANDING/LAUNCHING	Collided on final glide	4				5%
	Self launching problem	4	2			7%
	Hard landing	5	4			11%
OTHERS	Car/retrieve	1				1%



d.- Fatal accidents:

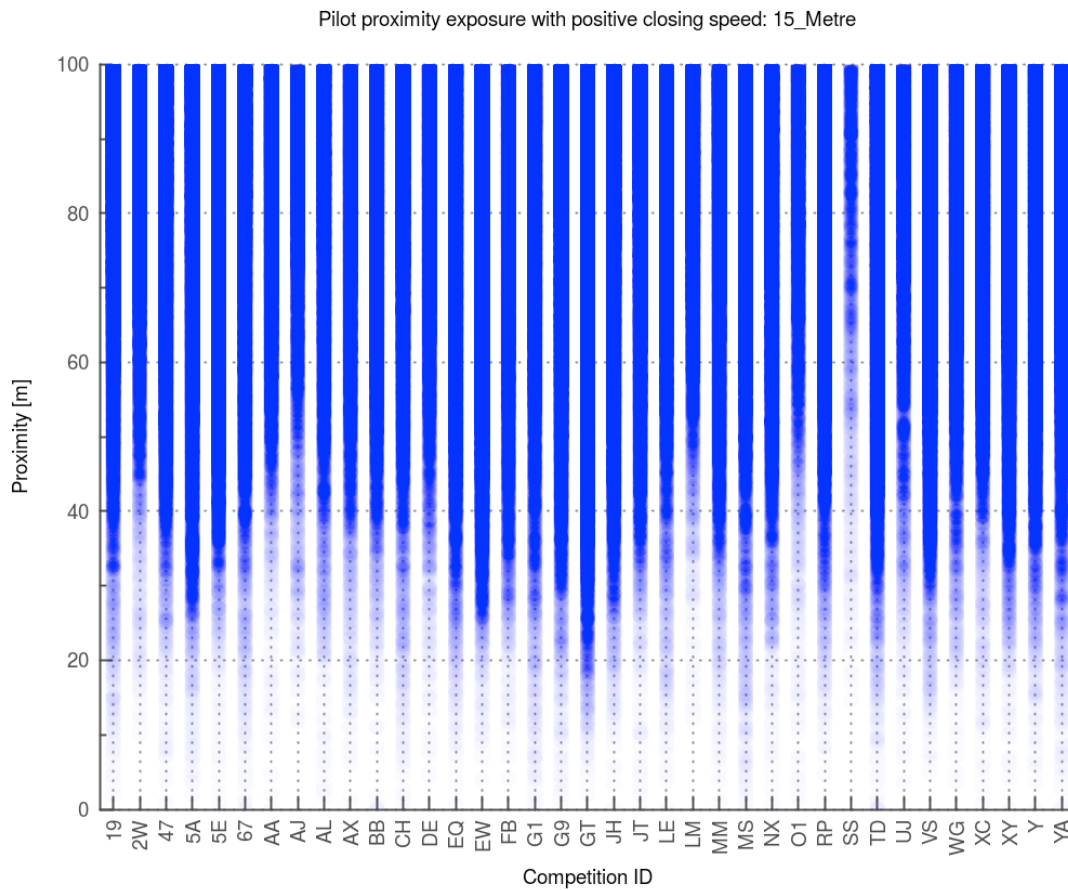
- One fatal accident in 2010 WGC Priedviza. Alexander Martynov (RUS). Spin unrecovered.
- One fatal accident in 2013 EGC Vinon, Alexander Nielles (ESP). Mountain collision.

There is no information to analyse these accidents.

Flight analysis

As mentioned before, we have recently seen an interesting work made in Australia by Mr. John Wharington. The software he developed will provide lots of information to analyse IGC flights during competition, which will help to make fast decision to reduce incidents. Since incidents are the source of possible accidents, to analyse them on time will be very important for the future. Also non-reported incidents will be seen, which can be many times in quantity, than the reported ones.

During the plenary, more information about this project will be shown, however we want to show one graphic as example of this tool. This graphic shows how close pilots flew during one competition day in Benalla (january 2017). The darker the blue, the more time/events the pilots flew close to another glider. The pilot's bad behaviour can be identified now.



Approach to the obtained data:

1.- The incidents/accidents varies depending on many human factors. It is impossible to identify them with the information obtained, however when putting the data into groups, we can see that the main issues are located in:

- Flying gaggles
- Mid air collision
- Outlanding procedures
- Final stage (final glide, approaching etc.)

These four groups of events represent 40% of ALL accident/incidents and 69% of all HIGH rated events in 26 major competitions.

2.- At a glance it looks like:

- Small competitions, less accidents/incidents (Grand Prix and Women´s). However JWGC are rated similar to continental championships.
- Women championships have the less accidents/incidents.
- World championships have the most accidents/incidents.

3.- More investigation needs to be done to find the main root of the problems.

4.- Two fatal accidents in eight years (2008 to 2016), 26 major championships.

Recommendations:

1.- To continue gathering information from reports and flight analysis.

2.- To establish strategies to reduce incidents and accidents, focused on most relevant issues (flying gaggles, mid air collision, outlanding procedures, final stage).

4.- To share statistics and proximity analysis with pilots and ask for their view. A pilot´s survey has been always a good tool.

3.- To continue developing behaviour´s survey during competition at briefings. Pilots know who are the bad apples. In Argentina and Benalla, survey was performed and the bad apples appeared easily. They behaved better after talking to them.

Regards,

SFG (full members):

- Marina Vigorito
- Terry Cubley
- Vladimir Foltin
- Brian Spreckly
- René Vidal

ANNEX 1. SAFETY GROUP REPORT FOR IGC PLENARY 2017

CHAMPIONSHIP / COMMENTS	CLASSES	ACCIDENT	QTY	INCIDENT	QTY	CLASSIF.	INFORMATION
2010 WGC SZEGED	15, 18, OPEN		1		3		
100+ Competitors		Collided on final glide	1			HIGH	Colliding with a truck. Truck driver severely injured. Glider destroyed. Pilot not injured.
8 comp days				Dangerous flying. Gaggles	3	HIGH	Poor weather conditions. High speed gaggles at cloud base before start
Flatland							
Poorly prepared competition. Resources.							
No good practice period. Briefing with bad acoustic. Safety jeopardized.							
Safety briefings and improvement in general during competition.							
Safety box adopted. Positive recommendations were received.							
Incorporation of finish ring after serious accident. Recommendation to be mandatory for major competitions.							
Poor weather, low cloud base, huge gaggles							
Several LP changed during competition (7 procedures)							
Not required constant descend on final glide							
2010 WGC PRIEVIDZA	CLUB, STANDARD, WORLD		3		4		
100+ Competitors				Hazardous flying before start	1	HIGH	No qty explained on report
11 comp days				No following circling pattern	1	HIGH	No qty explained on report
SMS messages worked well.				Flying in clouds	1	HIGH	No qty explained on report
Dynamics used for towing gliders with success		Mid air collision	1			HIGH	Gliders severely damaged but both returned home. One pilot entered the thermal interfering other's circle.
Mid air collision: one glider had Flarm				Near miss collision	1	HIGH	One glider did not see the the other. Felt a collision but did not.
Near miss collision: one glider had Flarm		Spin unrecovered	1			HIGH	Spin unrecovered during thermaling. Pilot killed. Lack of experience is a possible cause.
Recommendations to use Flarms mandatory.		Hard landing	1			HIGH	Final glide for outlanding tried to avoid a fence. Pilot and glider seriously injured
2011 WWGC ARBOGA	15, CLUB, STANDARD		1		0		
47 competitors		Mid air collision (tug planes)	1			MEDIUM	Tug's different performance, created point of collision not seeing by the pilots but the gliders being tugged. Gliders release before the impact. Tugs with small damages
11 comp days							
Possibility of opposite landing.							
No Flarm on tugs that collided							
2011 JWGC MUSBACH	CLUB, STANDARD		1		3		
Poor weather. Well organized				Hard landing	1	LOW	No injuries to the pilot. No information about the glider
Finish ring was adopted. Criticism at the beginning		Hard landing	1			HIGH	Pilot injured taken to Hospital
Safety committee elected				Near miss collision	2	HIGH	Near miss collision during towing.
Received comments in the safety box: cloud flying, bad behaviour in thermals							
2011 EGC NITRA	CLUB, STANDARD, WORLD, 20		0		0		
4 comp days on all classes but world class.							
Finish ring was adopted.							
Briefings mainly safety focused.							
Finish ring was determined as contest side boundary. Landing inside had no penalty, releasing stress to pilots.							
Poor weather.							
World class could not achieve minimum valid days. No European champion on World class was announced.							
Aggressive flying comment but no reported as incident							
2011 EGC POCIUNAI	15, 18, OPEN		3		0		
Finish line was adopted		Launching loss of control	1			LOW	Glider loss of control before taking off (ground loop). Glider broken and pilot not injured
Outlanding briefing was given on last practice day		Landing on a tree	1			HIGH	Glider severely damaged. Pilot injured
		Hard outlanding	1			MEDIUM	Glider damaged
2011 WSGP WASSERKUPE	15		0		0		
Minimum altitude between reporting point and finish line to be adopted in future GP rules							
No information on weather							
No information on accidents nor incidents							
Poor weather							
2012 WGC UVALDE	15, 18, OPEN		3		5		
Incorporation of Safety Pays Initiatives		Mid air Collision 1	1			HIGH	1 pilot bailed out, 1 pilot returned home
Egress cockpit training to all pilots		Mid air Collision 2	1			MEDIUM	Light touch during practice

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CHAMPIONSHIP / COMMENTS	CLASSES	ACCIDENT	QTY	INCIDENT	QTY	CLASSIF.	INFORMATION
Start limit rule was changed during competition as noticed to be dangerous. Look out preference		Self launching failed	1			HIGH	Glider damaged out of competition
Finish ring extended upto 15 Km				Many incidents	4	LOW	No information available
Safety briefings							
Less pilots/gliders finished competition							
100+ Competitors							
2012 WGC CHAVES	CLUB, STANDARD, WORLD		0		4		
Left turn upto 10 Km from airfield				Dangerous flying. Gaggles	1	HIGH	Several events verbally reported. Critical during start area
Rules: change or modification to improve safety				Landing wheel up	2	LOW	No glider damage
Safety briefings with videos				Mid air collision	1	HIGH	Light touch. No glider damage
Safety survey: Feed back from pilots							
Survey to nominate "dangerous pilots". One pilot severely warned							
Pilots safety committee elected							
Same pilots/gliders finished competition							
2013 WWGC ISSOUDUN	CLUB, STANDARD		3		1		
10 comp days		Landing long crash	1			HIGH	Crashed against a glider at the end of the runway due to ground loop. Both gliders out of competition.
No mandatory training.				Ground loop	1	LOW	No glider damage by the ground loop. However it was hit by landing glider, leaving both out of competition.
Safety launches		Crashing on a tree	1			HIGH	Pilot taken to Hospital until next day
Operations very well managed		Hard landing	1			HIGH	Stalled before airfield. Injured pilot taken to Hospital
Safe finishes and landing even during mass finishes							
LiveTrack24 was available							
Safety covered during all briefings							
Information about outlanding possibilities were given to pilots							
Safety committee was established							
Great approach on accident. Pilot was taken on a two seater to check her abilities and also to support her psychologically.							
No homogenous level of pilots							
2013 JWGC LESZNO	CLUB, STANDARD		0		0		
84 competitors							
8 comp days							
Finish ring was adopted.							
Safety minute every briefing							
Egress cockpit training to all pilots							
Safety committee was established							
Incidents mentioned on reports, but no details to table							
2013 EGC VINON	15, 18, OPEN		7		2		
9 comp days		Self launching engine failed	1			HIGH	Engine belt failed. Engine with smoke and flames. Pilot left glider with no injuries. Glider out of competition.
100+ Competitors		Self launching engine failed	1			HIGH	Engine problem (bad operation?). Forced outlanding, glider severely damaged. Out of comp.
No information about the FATAL collision accident in the mountains.		Self launching engine failed	1			MEDIUM	Engine problem. Outlanding but slightly damaged
More experience required for flying in the mountains		Hard outlanding	1			HIGH	Landing on a non approved field. Glider out of comp.
100+ Competitors		Hard outlanding	1			MEDIUM	Late decision to outland on finish. Some damages.
				Hazardous manoeuvring	1	HIGH	Dangerous landing pattern
				Checking engine during aero tow	1	LOW	Not recommended to be done
		Hard outlanding	1			MEDIUM	Outlanding with damage to the glider
		Collision to mountains	1			HIGH	Fatal accident. Was it Giorgio Galetto who survived?
2013 EGC OSTROW	CLUB, STANDARD, 20		0		0		
90 competitors							
10 comp days							
Flying aggressive bellow cloud base.							
Aggressive behaviour on gaggles							
Safety committee was established							
Recommendation for finish ring with minimum altitude							
2014 WGC RAYSKALA	CLUB, STANDARD, 20		0		3		
Permanent safety messages				Dangerous flying. Engine operation	1	HIGH	Low altitude engine operation
Safety committee				Landing wheel up	1	LOW	Glider damaged. Fixed overnight
In general a safe competition				Blocked rudder after landing	1	LOW	Fixed overnight
100+ Competitors							
2014 WGC LEZNO	15, 18, OPEN		1		6		

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CHAMPIONSHIP / COMMENTS	CLASSES	ACCIDENT	QTY	INCIDENT	QTY	CLASSIF.	INFORMATION
Communication (English) problems		Crushed car/glider during retrieving	1			HIGH	Car accident. Pilot broke an arm.
Meeting with identified dangerous pilot. Warning given.				Launching incident	1	MEDIUM	Grid boy hit by glider wing
Complains that Flarm was turned off.				Launching incident	1	HIGH	Grid boy caught by tow rope.
Six safety briefings given.				Dangerous flying. Gaggles	1	HIGH	Close encounter. Same pilot that bailed about in Uvalde
10 Km finish ring radius, in stead of 3 km				Arriving attitude	3	MEDIUM	Flying low before airfield. Car traffic stopped.
100+ Competitors							
2014 WSGP SISTERON	15		0		1		
Safety briefings				Low finish, slow	1	MEDIUM	No dangerous finish but not following the LP
Single class, 15 MM, wing loading 50 kg/m2							
21 competitors							
Good weather							
Mountain flight							
2015 PANAMERICAN USA	15, HANDICAPPED		0		3		
Safety briefings				Landing wheel up	1	LOW	Glider slightly damaged
26 Competitors				Hazardous manoeuvring	1	HIGH	Wrong direction entering the thermal
Poor weather				Outlanding near finish ring	1	MEDIUM	Minimum altitude penalty, encourage to take risks for not crossing low.
Only 3 valid days (out of 12)							
Emergency plan to pilots (who-do-what-when)							
Finish ring under non landable fields.							
Not well established finish ring/distance-altitude							
2015 WSGP VARESE	18		0		3		
Safety briefings				Dangerous manoeuvring	2	HIGH	First thermal, circling different directions. Simultaneous start.
19 competitors				Final glide above hospital	1	HIGH	Dangerous reporting point. Changed after second day.
Poor weather, 5 valid days							
Bail out exercise							
Wing loading limit							
2015 WGC POCIUNAI	13.5		0		0		
Good weather. 12 comp days							No incidents, no accidents
Small competition. 12 pilots							
7 Microlight. 5 15 m gliders cut wings							
No cross country training							
No safety committee							
2015 WWGC ARNBORG	15, CLUB, STANDARD		0		0		
Bail out exercise performed							No incidents, no accidents
Bad weather. 9 comp days							
Several outlandings, no problem							
40 competitors							
2015 EGC RIETI	15, CLUB, STANDARD		0		3		
64 competitors				Hard outlanding	3	HIGH	Gliders out of competition
102 outlandings							
No information about safety briefings							
2015 EGC OSCENY	18, 20, OPEN		1		3		
82 competitors				Landing wheel up	2	LOW	Caused by rough terrain
9 comp days				Microlight crushed glider wing	1	LOW	Serious accident from the microlight point of view, but low risk if considered out of the competition.
Communication problems (English) affected safety				Self launching engine failure	1	HIGH	Forced to outland. Severe glider damage
"Safety council" established							
2015 JWGC NARROMINE	CLUB, STANDARD		0		5		
59 competitors				Hazardous manoeuvring during training	1	HIGH	After crossing finish line, very close to mid air collision. Penalty during training could have been carried to the official competition
10 comp days				Hard outlanding	1	LOW	Minor damage
Good initial safety briefing				Landing wheel up	1	LOW	Minor damage
Many penalties on minimum altitude on finish ring				Hazardous manoeuvring	2	HIGH	On final turn
Organisation encouraged the use of Flarms on stealth mode, but was not compulsory.							
Look out reasons?							
2016 WSGP POTCHEFSTROOM	18		1		3		
Safety briefings				Final glide, collided with a tree	1	HIGH	Wrong landing pattern, too low, tail wing. Serious glider damage. Pull up after crash and landed "normally".
19 competitors				Landing wheel up	2	LOW	Minor damage. Fixed overnight
Variable weather				Hazardous manoeuvring, final glide	1	LOW	Low above the fence to airfield. Warning given.

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CHAMPIONSHIP / COMMENTS	CLASSES	ACCIDENT	QTY	INCIDENT	QTY	CLASSIF.	INFORMATION
Wing loading limit or max w							
2016 WGC POCIUNAI	CLUB, STANDARD, 20		1		2		
7 comp days				Hazardous manoeuvring	1	HIGH	Overtaking gliders from bellow
100+ Competitors				Lake outlanding	1	MEDIUM	Glider took two days to dry and be fully operative.
Flarms turned off during competition		Collided into a house	1			HIGH	Pilot injured taken to Hospital
Difficult weather. Several low cloud base days							
Finish ring established for 5 km							
2016 WGC BENALLA	15, 18, OPEN		1		0		
100+ Competitors		Mid air Collision	1			HIGH	Both pilots bailed out
Safety briefings							
Not much information when this document was done. Waiting for complete steward report to complete spread sheet							