

PARAGLIDING WORLD CUP ASSOCIATION

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# PWCA /Air Turquoise Expertise minutes Villeneuve - Switzerland - February 13rd, 2014

Present :

Air Turquoise - Alain Zoller Air Turquoise - Test pilot - Gilles Perrioux PMA - Advance - Rolf Zeltner PMA - MCC Aviation - Alaxandre Paux FSVL - Bennie Stocker Ozone - Luc Armant Niviuk - Olivier Nef Gin Gliders - Hans Bollinger PWCA - Goran Dimiskovski PWCA - Denis Cortella PWCA - Laura Sepet World Cup pilot - Ulrich Prinz

After welcoming us in Air Turquoise, Alain Zoller explained that Air Turquoise had anticipated our visit. Gilles measured again yesterday the 3 stored samples : full distance lines + risers.

### **1- Procedure :**

Alain asked for PWCA request.

Laura replied to start with a comparison of the gliders to the stored samples and then next step will be defined if needed.

Alain is proposing to start with some measurements on the 3 SF13 gliders, to compare the results with Air turquoise measurements and if doubts or questions to take physically the stored samples and compare.

### **PWCA Office**

364 Route d'Annecy – 74210 MARLENS – FRANCE Phone: ++ 33 (0) 4 50 32 83 83 Fax : ++33 (0) 9 55 95 65 74 Web : www.paraglidingworldcup.org Email: <u>pwca@pwca.org</u> Denis is asking to get a video record. A video from Air turquoise is finally set in the corner of the room. Air turquoise proposes to send then the video on Dropbox but doesn't want to organize the video. Rush will be provided.

denis explained that our goal is not to manage a proper and nice video but just to keep the record in case someone gets doubts about our actions, conversations or methods.

1st step : Air Turquoise proposed to measure the total length (lines +risers) of half wings. In case of difference the second half can be checked.

2nd step : Ozone reminded that we should also measure the risers. Air Turquoise agreed but we should also to measure the max course of the speed system.

Air turquoise stated that measuring the risers is one thing but Air Turquoise has certified the Boomerang 9 with risers that were not original ones. Of course the risers of the stored sample will not be teh same of the final risers of serial Boomerang 9. That's also the reason why Alain proposed to measure the total lenght (lines + risers) instead of 2 separate measures. In addition course of the speed system can be measured.

Air turquoise reminded that he's fully transparent. There are files that are recorded. Alain recongnise that Air turquoise made some administrativ mistakes. He proposed to go step by step. (Vocal 006)

3rd step : Air turquoise proposed to measure the trailing edge and leading edge.

## 2 - Measurements : Icepeak 7 Pro 24 Serial nr J370034 - Pilot : Caron J-Marc

Gilles started to measure line lenghts of half wing with 5kg pressure.

While Gilles was checking, Alain reminded that EN norm set a tolerance of +- 1 cm. He added that because those wings flew already and haven't been readjusted after flying so we could be a little permissive about the tolerance. Defining how much should be the tolerance on this tolerance is subjective and is another question...

Luc added that the tolerance of +- 1 cm even on a brand new glider is not really ...

Laura proposed to adopt the tolerance that are displayed in our 2014 rules. Housi proposed to let Alain decide. Laura agreed.

Alain disagreed and reported that the problem is that there is EN norm and that each entity adds his own rules. We're asking for EN certified wings and if we define additional rules, then it's no longer EN.

Denis and Laura mentioned that we're today asking for a conformity or non conformity to EN. Then people who subscribe to our Association, adopt our rules and we can add what we want into those rules. If we ask Air Turquoise to check something that is different from EN, if you provide us a Pro forma then check according to our request with your skills, that could happen. Alain agreed but reminded that in that case we can't say that it is still complying with EN. Housi disagreed because our tolerances are not conflicting with EN ones. We just added some measurements to avoid problems in rapport to the stored sample. But in case of doubt the stored sample is the reference.

Denis added that following our rules, the wing must be EN certified and in addition no changes are accepted.

Alain referred to a previous conversation he had with Joerg. Joerg proposed to stick to EN with +- 4 cm. Alain insisted that if we refer to EN then tolerance is +-1 cm, not something else. Denis stated the pilots flying FAI comp are referring to Section 7. PWCA gets its own rules. Alain disagreed on the fact of using EN denomination + additional personal rules. Then some organism will state that this is no longer EN.

Alain would have preferred to have adopted some different parameters like +- 4 cm that will fit the competition, something more or less open class, more or less in accordance with EN but fitting the competition needs.

Some organism will say that EN is En. Adding anything to EN is no longer EN except if it is more strict but setting a bigger tolerance is not being more restrictive.

Denis : That's our case. Our rules says EN + no changes by any mean on the glider. Alain is asked to measure and to provide a measurement report. Then they will be analysed if needed.



Step 2 : Measurement of the maximum course of speed system



The maximum course of speed system is checked again after having expertised the 3 wings because we discovered that croc splits did not allow full course during 1st checks.

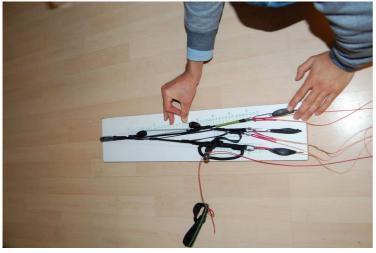


= SF13 IP7Pro : speed system max course



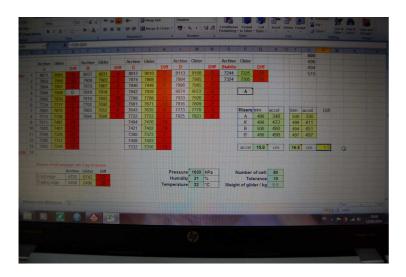
= IP7Pro stored sample

The stored sample allows a max course up to the axis of the pulley. SF13 IP7 allows a bigger course : 1.5 cm more.



Measurement of the risers

Here are the collected measures :



Gilles explained that measurements are matching and there is a small difference on the maximum course of speed system : 1.5 cm.

The SF13 IP7Pro can push 1.5 cm more than on the stored sample.

The tip of the wing is a little bit more accelerated on the SF13 wings but it is still within the tolerance (Vocal 007).

Now the trailing edge and leading edge of the wing are measured.

Gilles to Laura : The EN norm doesn't indicate any tolerance for the front edge or leading edge measurement. If we've got 50 cm difference, it's sure that there is a problem but here we've got 2 and 3.8 cm so it's only coming from production standard.

As that wing has been checked in Brazil, the measurements of the trailing edge from Brazil and today's one are compared and are very similar (6496 in Air turquoise - 6487 in SF13)

#### 3 - Measurements : Boom 9 M Serial nr K620003P- Pilot : Miyata Ayumu

Same process with the Boomerang 9





SF13 Boom 9 :



Stored Boom 9 :



SF13 Boom 9 :

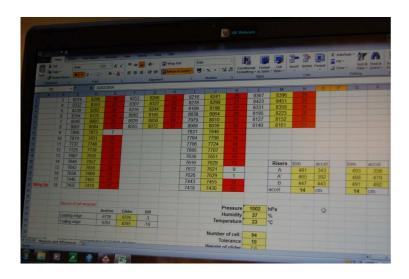
As previously mentioned, the certification has been proceeded with trim risers. After the certification, Gin expressed the wishes to provide risers which legs will have equal sizes. In the documentation, Air Turquoise corrected the line lenghts but did not correct the risers one. The problem today is to set back the trim risers to the precise certification position. According to the light folding on the strap the position may more or less justify the 34 mm difference.



## Stored Boom 9 Risers :







Later during the day (Vocal 008) = Alain Zoller explained to Laura why they accepted trim risers.

The manufacturer arrives to testing house at the last minute. If the laboratory asks for final risers, and if the wing fails, the manufacturer had to go back home, build new one and come back...etc...To make it easier for the brand, the manufacturer comes with trim risers, adjust the trim according to manoeuvers results. When test is final, measurements are recorded and wings are produced accordingly. Manufacturer is allowed to adjust lines to produce risers with all legs at the same dimension.

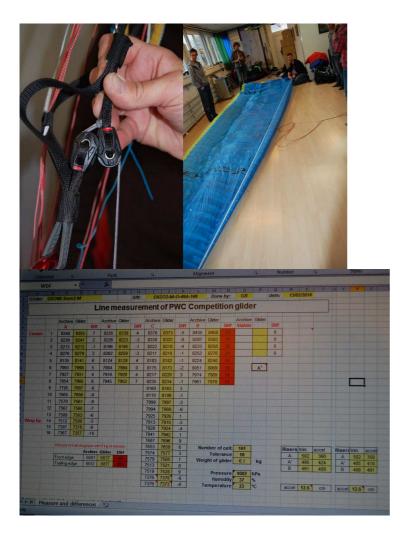
Laura : What happened with Gin then because the process seems to be fluant and accepted by all ?

Alain : Air turquoise did an administrative mistake. Measurements of lines have been corrected but risers dimensions have not.

This means that if you catch the total lenght (risers + lines) of Boom 9 on Air turquoise, then it doesn't match...

### 4 - Measurements : Enzo 2 M - Serial Nr Enzo2-M0-49A-149

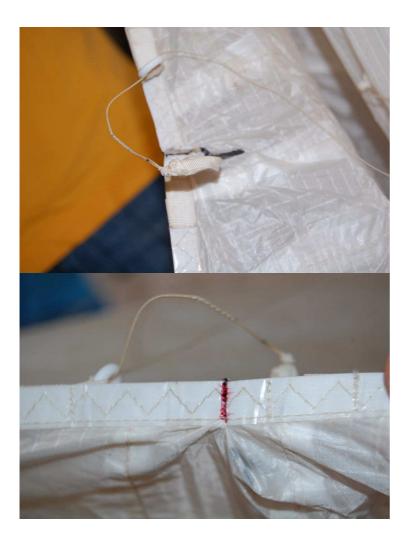
Pilot : Reina Lagos Francisco



Leading edge measurement shows a difference of around 4 cm; trailing edge 20.5 cm.

Alain Zoller explained (Vocal 10) what he did on the stored sample on the last SF13 day : he showed us the Enzo 2 stored sample : the wing that has certified had pinches on the trailing edge. When the problem appearred in Brazil, Air turquoise with the witness of Denis, Fred Escriba and Ozone team unstitched the pinches. they cut and made an red arrow. The wing has been flown and after that, the wing has been stitched back to its original configuration. The photos below show the marks and reference that has been done when the sample has been unpinched. The wing has been measured again when back to its certification size and difference was around 1 cm. The wing is back to its original and certified configuration.





## **5** - Line attachment position

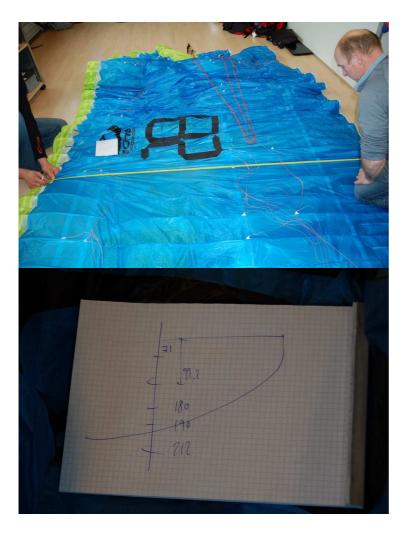
Alain : We could wonder if the line attachments are correctly set.

Denis added that during the SF11 in Mexico they compared 2 Niviuk gliders and all attachments points had 1 cm difference in position. They concluded that it was a production mistake. They compared only 2 wings so which one was the correct one, we never knew. Denis mentioned also that there was a significant difference in the trailing edge in between the

We started to measure the line attachment points on Enzo2

Vocal 11 (no real interest)

2 enzo they compared.



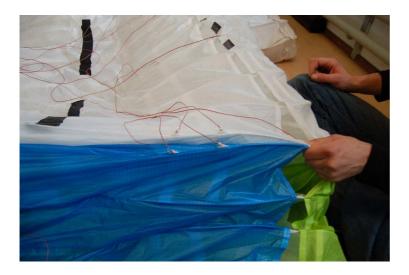
but in order to avoid difference in measurements and to make it easier, it is proposed, like Denis did during the SF11, to compare physically the stored sample and the SF wing.

We started with Enzo 2 gliders : center of the wing :

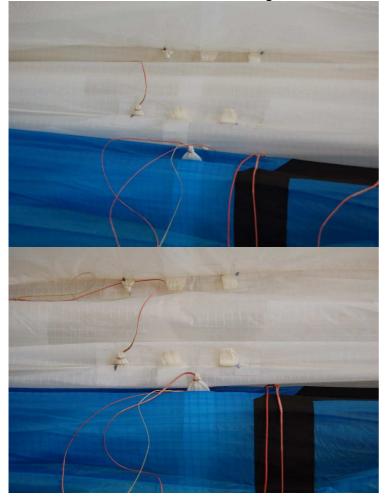


Blue wing is SF13 Enzo 2 - White wing is stored Enzo 2

A line attachment point : center of the wing



B line attachment : center of the wing



C line attachment : center of the wing

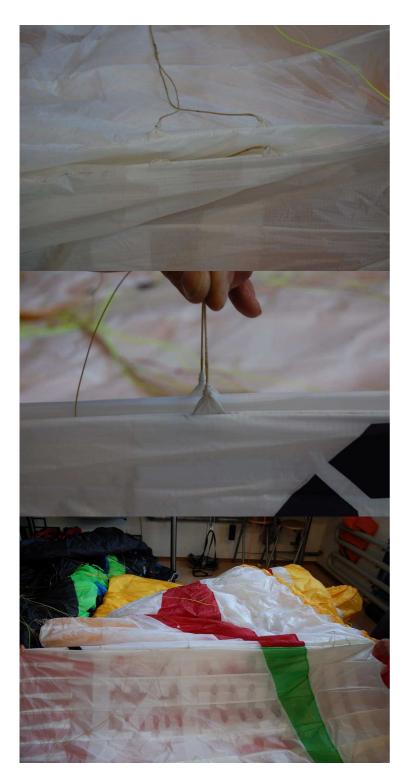


B & C line attachments :



We compared attachments points positions on half wing and found differences.

The same process is reproduced comparing the SF13 Boomerang 9 and the stored Boom 9 :



No difference.

Same process on the SF13 Icepeak 7 pro and stored icepeak 7 pro :



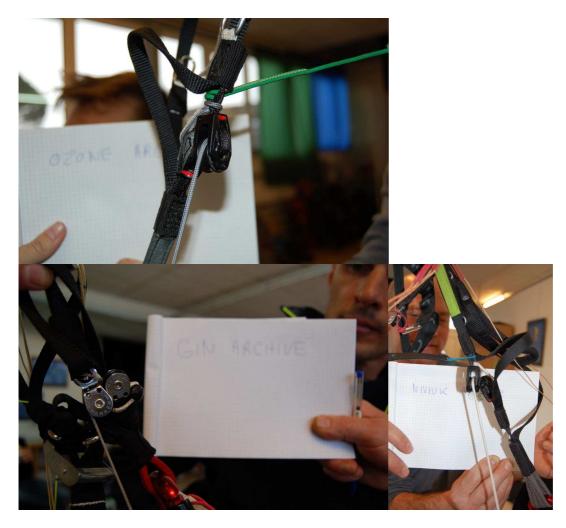
No difference.

Gilles to Luc (end of vocal 007 : it should be 5 mm max...)

## 6 - Photos of the speed course during test flights

We can see on the following photos that test flight of Enzo2 and IP7 Pro were done with pulley to pulley and not more...





It looks that SF13 gliders offer the possibility to push more...





Goran is joining the meeting.

7 - Summary ---All parties around :



Vocal 012 follows...

Alain Zoller :

"I guess we did quite a lot of measurements, quite a good job. I don't know, it's not necessary may be to repeat everything but what I can realize is :

-the total lenghts of every gliders are in the tolerance, are correct

-we have discussions about the risers because what is possible to do in a flight test is one thing about the maximum possibility we have to push on the pulleys against pulleys.

-we spoke in the certification about mechanical limit : mechanical limit is to try to go as strong as possible. If we can put the pulleys over the pulleys, we try to do it. But actually what you see on the pictures I did, in flight, it was a normal mechanical limit we can achieve in full speed that means pulleys on pulleys. this is one fact.

-we compared the attachment points and Niviuk and Boom are correct and Ozone doesn't fit, doesn't match the attachment points on the glider. The trailing edge also. Just the story about the trailing edge (talking to Goran): you heard about I opened the trailing edge, it was under the witness of Fred Escriba, Denis Cortella and Luc was here; we marked everything if you want to have a look on the archieved glider, you can check it and now it is back to the same configuration as before when we pass the certification.

That means that from my point of view the Enzo 2 is not conform as the certified model. This is clear.

The other ones we can consider as conform.

Now we have something, I mean, pending : it's the speed. What is using during competition and what we certified.

What I suggest if you want to go further because we did not of investigation but that doesn't speak too much this one, because OK it's conform : 2 gliders on 3 are conform but for me I guess it's important to have a kind of at least flight test comparison for to check the speed. If the glider used in Superfinal are faster than the certified model, we can just say : cannot consider as certified. It's not for to blame the manufacturer or to blame anybody, any it's just for to show the certification are a kind of really limit, is very limited. And if we want to use the term that the gliders are EN certified, it should be EN certified. It's not allowed for the pilot to stand of the pulley for to get more speed.

Housi : In the same time, you can't control what he's doing in the air. If he's pulling himself, you can't control

Alain : Actually you're right but in the other hands we have the glider confirm the competition and we already saw it's not pulleys against pulleys. But like I said also it's difficult to reproduce exactly what we have in flight, the same distribution on the risers and to have the really effect on the pull during the flight, from my point of view, we should fly the glider.

Goran : You know, this issue about going further than the certified speed is present on a day by day basis and then when we try to enforce this and to speak with the pilots and everything, issue rised that "am I allowed to pull the B lines as much as I want during the steering"? the answer was of course...so why should I not be allowed to pull the A lines. What's the difference ? Of course, they are affecting in different way but like a mechanism pilot are doing this. Even if we prove, whatever we are doing regarding the speed, even if we're really precise with measurements, there will always be an option for them to grab the risers and to go faster. I think it's super difficult and super proving nothing if we just testfly the gliders with these parameters going faster than the certified speed. I'm quite aware that going faster than certified speed is XXXXXXXXX the whole certification process because manoeuvers are performed at certain speed but in reality that's happening everyday everywhere.

Alain : Yes you're right but actually I guess it's important to show also...it's not to be against the competition or against the pilots or against everybody. Now it's much more complicated at the moment : we have the politics who say that we must have certified glider during competition. From my point of view, I would like to say, OK now we can show that every glider from competition is not certified at all. We don't speak about tiding the B, pulling something. This is competition. But to have some loops, to change the mechanical way, this is ...I don't want to

make the folding line on the glider and to repeat everything. This is not the point but at least to have something for to show.

Housi : But we can show that the wing we flew is the same wing than you stored here

Alain : We already saw that it is not the same because the rope on the pulleys is not the same. We saw that. On the competition glider you can pass the pulleys like this and certification is like that. May be here we can see it's a little bit over but it's not full.

Housi : In the same time, the pilots know they have pulley to pulley and if they pull more they know they do something which is not allowed.

Alain : It's not against the pilots. It's just about the system, to show .. I guess it's a nice opportunity to say : OK now look at this, the glider is certified, little modifications that nobody can see and the glider is not certified at all. From my point of view it's important to show that.

Housi :You told us if the wing is faster it is out...and in the same time you tried the Ozone with the opened pinches, and you make the manoeuvers and you said the wing was faster and it was no problem. How do you explain this ?

Alain disagreed. He said that he never wrote that. It's not me. Check. I just said the manoeuvers I did with the open pinches (full speed trim speed asymetric and front collapse and other one) fit the standard but I clearly said also that doesn't mean the glider is certified in this configuration. Luc can confirm because Ozone disagreed when I said that. For them it was a confirmation but I was very clear about that. My feeling was yes, probably the glider was little faster but I never wrote that.

Goran : You know I went to PMA meeting in St Hilaire this year with the motion from the World Cup pilots to implement rigid limiters in between A and B or in between lines, so not this pulley over pulley game anymore but it was mutually refused by everyone. If we continue with your proposal, I fully understand your point, it's very logical. If manufacturers already refused us directly implementing the limitors which is solving the problem, it means that this problem is going on the manufacturer level and not on the pilot's level. and if you prove that all these gliders are faster, that will reached the pilot's level and we don't want this.

Alain : But I don't want to hear that test laboratory did a bad work because it's possible to cheat. I want to avoid that because the whole world is looking at us because we had some administrative mistakes. I'm very clean, if you want to see all videos about the flight tests. I have summary of 3 of these gliders. I'm very clean and open to publish that but we know the publishing of video is not... I want also to make more credibility to the work that we did. When you know that it's possible of cheating like this, it's not cheating it is to modify for to get a little bit more speed, our work is not good. because at this moment what we will do, we will change by ourselves the way of the manufacturer brings the wing and we say it fails. Manufacturers won't be happy because it's not the configuration they wanted. We know that. Now we should decide something.

I can imagine the pilot : the pilot doesn't want to fly less than 55 km/h with his glider. That's what we measured about the speed. You take a C category it's faster. 55 less than 55 ok margin instrument 2,3 4, 5 km/h. It's far below 60 km/h. I can understand, you've got a 7.8 aspect ratio, you don't want to fly like a B glider.

My concern is I would like to have this way, to be fair with everybody also. I'm sorry but I have also to save the work we did and make the big reflexion for the future like you said to limit the risers and there won't be any valid excuse and it will be much more easy for you for to control that when the pilots land.

Goran : So as far as I understand, now you're proposing to test-fly these gliders in order just to measure the speed

Alain : in order just to compare the speed. We keep the SF gliders here. We take the SF Boom 9, archieve Boom 9, same harness, same weight and we push. we have the gopro, we will film that from the ground. All 3 gliders : Boom, Enzo and IP. May be I'm wrong. I don't say it's totally cheating, it's totally messy, I just want the confirmation to be clear about that.

Goran : OK, so we're here for the World Cup. You are observers, I'm President and one World Cup pilot. Alain : PMA

Goran : Honestly speaking I think we reach our goal which was to prove that the SF13 as they are are conforming or not to the stored samples because our committee voted exactly on this. Our vote that we have credibility to act is exactly this : to compare those gliders with the stored model and then to say it's conforming or not dimensionlywise. I support what you're saying but I think that is really not going into direction of what pilots themselves can do on the glider. Because we are a pilot organization,, we do not want to compromise more the pilots action or to introduce some more measures. All companies representatives are here, so I will suggest that this question is going to the companies. Because they are the ones who are designing the glider in that manner. This discussion should go to the company representatives if they want to go into that direction.

???? : In my opinion, we measured physically the gliders but basically the same glider will suddently fly 5 km/h faster it means that something we could not measure is different.

Goran agreed with this but again....

??? : It's part of the comparing the archived model and the SF model to make this try of the speed because something we can measure on the gliders something we can not and if the speed is 10% different, then there is a difference on the glider.

Housi : But we know from what it is coming. Alain is pushing from pulley on pulley and in competition we are pushing pulley below pulley. So it makes 4-5 cm difference and that's the reason why we are faster. You know it. Housi agrees with Goran.

Alain : In that case the glider is not certified at all.

Housi : But who knows if the pilot pushed pulley on pulley or pulley below pulley... Perhaps they stopped on pulley....you can't prove that they pull more

Alain : That's why I want to test fly the gliders

Goran : But what you will prove is that is possible. So you will prove that this pulley over pulley is designed by the manufacturer. If the system is designed to make it one over the other then they should have to manage non movable pulleys. So you can not go pulley over pulley.

Alain : This is not made for certification. It is made for to have the possibility to go further.

Goran : I understand but as I said my duty is to preserve what is voted, agreed and explained. What is voted, agreed and explained is that we will bring the gliders to be compare to the stored models.

Alain : Compare can also be flying.

Goran : I agree that these steps are needed but I will clearly say that this is further than the World Cup intention. If the manufacturer representatives that are here agree to continue in that direction, I have nothing against but I want to be clear our World Cup intentions and what I declared in our statement and what is voted by the committee and what we are ready to do is finishing at this stage.

Rolf (PMA) thinks that Alain has to do these tests because here we have one glider here with total lenght we cheked the same but the speed system with the lenght of the risers could be different so we can not say if it matches or not so I think you have to do it because if someone knows about the risers difference....

Everybody knows. Air Turquoise already said they did a mistake with that.

Luc to Alain : So you said that one glider here is not conforming and that 2 gliders are conforming ?

Alain : Yes

Luc : But just looking at measurements...Did you look at the tables ?

Alain : yes.

Luc : And what is the conforming criteria ?

Alain : We can see for the used glider we have may be +-1 and someone has one or 2 lines 1 cm difference. We can play on the word, we can play on the measurements but the trimming of the 3 gliders are good.

Luc : what about the measurements of risers ?

Alain : That's why we measured the trim of the gliders and not the risers.

Luc : Risers are measured and I think there is a mistake in the measurement of the Niviuk because on the speed system there is few cm difference.

Alain explained again that it's Air Turquoise second mistake. When Alain flew the glider it was pulleys against pulleys. Gilles did not fly the glider. He measured the glider, he was thinking to be nice, he pulls everything that is why we have published 18 cm when the reality was 15cm. I already prepared an official statement about that. We did a mistake. We have a part of responsability when we published the document.

We have a mistake on the Boom 9 trimmer, we did a mistake on the measurement of IP7 Pro speed system and we did a mistake to accept Ozone pinches. Additional mistake is administrative when published Niviuk's loadtests. No excuse. We do not hide anything.

Alain repeats again that in the past many brands went to certification with trim risers and that's why we measured today the total lenght.

Alain to Luc : you can make a complain against Gin to say that their wing is not conform because they should produce the same risers according to the certification.

Luc : My point is that EN text set tolerances for lines and risers but doesn't set them for the canopy. And now you cannot say we forget about the tolerances for lines and risers and ...

Alain : You should stop there. We also played with Ozone accepting trim risers on some wings.

Luc : It's not about that particular case ....

Alain : We can check the drawing about the risers of the Boom 9 and what we have on the sample here, it matches. The single difference is explained by Air Turquoise mistake

Denis to Luc : The dimension of the 5 Enzo 2 trailing edge that have been measured in Brazil was within 2 cm. The tolerance should be only on the production concern, stiching etc...It means it's around 0.92 % ....All the factories here seems to be able to have a production tolerance less than 1%.

If we go back to the difference in measurement we found in SF13 and add the difference in line attachment points we found today, you have 2 options :

You did it intentionally

You did a mistake in your files somewhere

Anyway, it's not a tolerance.

If you're going to the judge with this, you're going to loose. Mike knows.

Vocal 013 :

Alain : We should clarify and fly the gliders : there are differences on the risers of niviuk, on Enzo 2 A2 B2....it's quite limit so we should clarify. At least to investigate full deep of what we use and what we're doing. After that WG6 will be in charge to define better parameters for measurements. And that could be use also for the testing house. Good relation with DHV. We learned a lot from that story. We may do something on the same way.

We have the possibility to show that we are on the same way and we can save the image of our sport. Now it's just passional. We have the possibility to react. The system miss something and we have possibility to react.

Laura to Alain : Is it accpetable for you if we consider that the World Cup reaches the points we had to check today and then you go further with the manufacturers.

denis : It depends on saturday's world cup committee decision. We can decide saturday that we want to test fly teh gliders.

Goran : we arrived at this point due to certain complaints. we are acting beside of complaints from pilots, from a group of pilots who left the comp. Our interest is to solve our competition problems which mean give an answer to those pilots which is supported by your opinion and stop this drama.

Then if you make a proposal and if you've got the support of the manufacturers to go further in order to create a better world for the future, we will support you.

Alain to Goran : I will be hard with you. I don't care about the competition. I don't care about 125 pilots. I care about 90% of the pilots who are suffering of this.

Goran to Alain : We would like to support further actions but for us, we need to stop this because we have a competition in 2 weeks. We bring the problem to the expert level. We respected our promises. We reached our goal. You did what you've been asked for, you have some conclusions, then you give us some conclusions. We will meet on saturday. You make a proposal what you want to do and then we will support that but for us it's important to close the book of the Superfinal and this drama because if we do not do this, in the next competition, again provisional results and we have to take care about our customers as you are getting care of yours. I think we are on the same line.

Alain : The book will not be closed until we compare the speed of the wings. Now it's half answer. It's not enough. OK you will decide about what to do saturday (committee meeting), you will do what you have to do but again we should work together to save the sport.

Alain is concerned because 99% of the pilots doesn't trust the testing houses, dosn't trust the wings nor the manufacturers...He stated that the big damage is coming from those 125 competition pilots.

Ulrich : Politicians and Federation forced us to use EN D. We did not want to, we did not ask to. We were forced.

Alain : agreed and we had the opportunity to change that in Briegens during the PMA meeting because there was no certified gliders. all were in process but then Torsten argued that 2 risers are safer than 3 risers. Academy did not test those wings...

Alain would like to bring something concrete for the competition and that's why he would like to go further.

Goran : We agree, we don't need to talk 2 hours. If you get the approval from the manufacturers, we will support you but not in order to disqualify these gliders, not in order to disqualify the comps. This is not our goal.

Alain's goal is not to disqualify neither.

Goran : If we agree on this we can continue about that direction. you don't care about the 0.2 % that are competition pilots but you have to understand that this 0.2% is our core business.

Goran : We have a meeting on saturday. i expect that we are going to support it with a good statement that we are doing this for the sport, to avoid anymore problems like this.

???? : We started some investigations. Measurements are finished. Second part of the job is to measure in the air. Then the job will be finished. Not before.

Alain would like to keep the wings.

Laura will bring the glider back to World Cup Office and they will be delivered immediatly if the Committee decides to go further. PWCA is organized with democracy. We refused as they are not our property.

PWCA will be cooperative to deliver the wings if committee approves those flight tests.