

## NEWS FROM THE SKY

No. 4/October 2011

Stay in Touch with the SKY.



### Bumpair, Airbag – What is the **best** protection, is the protection **effective enough?**

New test rig installed and calibrated recently in Sky Paragliders headquarters will be used for all pre-tests and studies that must be done to understand the vertical impact better. The research carried out so far does not provide sufficient information how should the vertical impact be absorbed and there is no clear answer to the question what is the best system to absorb shock.

So, the new test rig will be used to deliver not only fully certified harnesses but also help us to understand what is in fact happening.

During the test, we drop a 50 kg sensed dummy from a height of 160 cm and drop it. The sensor is linked with the computer and the crash value is recorded at a very high speed (>500 Hz => more than 500 recorded points/sec.). **From this data we can get a chart, max. value, energy, average..**

**The harnesses is successfully certified** (based on LTF requirements) if the impact does not reach more than 50G ([you can study G force details](#)) G in fact is used to describe and qualify acceleration (or deceleration).

Human body has its limits. We can sustain a lot of G force impact as long as it happens only for a very short time (1/100 s), for example knocking on your neighbour's door could reach 50 G and is not dangerous as long as you have a nice neighbour. On the other hand, spiralling down with your glider more than 15 seconds could be over the limit for an untrained body even if you do not enjoy more than 5 G.

In fact, this is not only G as a main actor in that question, we have to also consider **energy and how many times during a certain period the G force is applied**. Nevertheless, the amount of G force cannot quantify the back protection efficiency.

Should we imagine that during the LTF test the dummy is replaced by a real human body, most of impacts would be fatal. However, if you fall from exactly the same height while standing on your feet, you do not even realize the impact.

But the real impact is far from the LTF defined impact.

We all know that the protection could be efficient, especially during small impacts. But the experience we have gained in the last year is that it can never be relied on totally.

**A safe landings, using your legs...are much more efficient than any protectors.**



### SKYLITE BI – Light Tandem Reserve

Distinctive technical specification:

55.9 m<sup>2</sup>  
20 panels  
2.7 kg

What is the actual improvement?

- 1) The large flat area, which enables the SKYLITE BI to achieve excellent sink rate.
- 2) The weight of 2.7 kg for 55.9 m<sup>2</sup>. This real performance is due to a new fabric developed by Porcher Sport – PN9, apart from the light weight, **this fabric reaches 2 other vital criteria**
  - A) very low level of porosity, and
  - B) the structural strength.

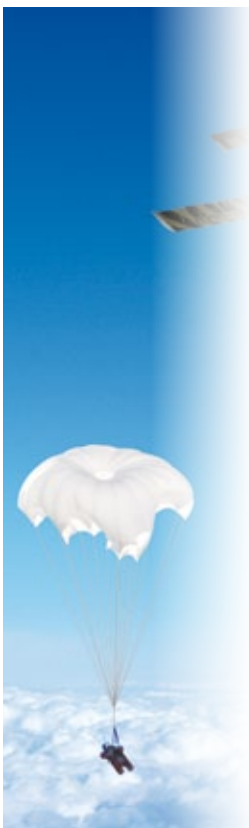
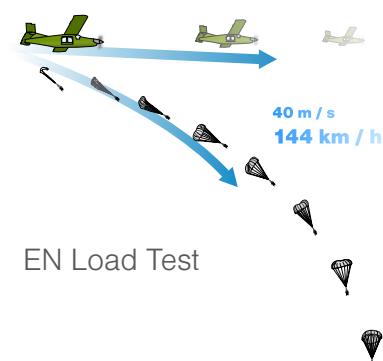
So far nobody else has been able to make fabric that combines these 3 features : light weight, low porosity and high tenacity.

3) Last but not least, the **EN certification**. Our SKYLITE BI meets the EN requirement and passed all required tests with PARA-TEST and Alain Zoller.

When we started this development, in 2008, we thought that we would not have to face such difficulties and that our knowledge would enable us to get the final solution in a very short term. Unfortunately reaching the stability and strength was not easy at all. During winter 2008-2009 we were in snow at the take-off **wearing** our water-proof neoprene to perform and test all new proposals and ideas and materials over the frozen lake.

After a long development process and new material solutions we were really proud to introduce the SKYLITE BI at the end of 2010.

We hope that you will never experience a highly critical situation that will force you to use it.



Wishing you cloudless skies and a lot of flying adventures.

Your SKY Team