

## Safety Bulletin 3

Welcome to Safety Bulletin No 3. This will be a departure from the earlier bulletins, it is shorter and is included as part of the Nation's Favourite Read. The relative brevity is down to the fact that I am packing my kit for a trip to Spain, departing tomorrow. More crucially, at the moment of writing it looks flyable on Barton so something has to give.

I had undertaken to provide a summary of Chris Little's Columbian accident in this bulletin. However, for reasons which I will explain I have decided not to provide a summary but use the example as a more general discussion on the Club's approach to safety and the value of forum discussion.

It was my hope that we, as a flying community, could adopt a more open attitude to safety. In particular I hoped that our forum would become the principal means of achieving this openness. In Bulletin 2, I analyzed at some length Rick's mini-wing accident on Wolf Crag. We should be particularly grateful to Rick whose openness demonstrated the value of this approach. It provided a number of important lessons in the areas of glider choice, pre-flight checks, emergency and first aid procedures, the restorative effects of gas and air and much more. The result has been greater awareness of important safety issues and a demand for more club based activity in support of safety training and awareness: first aid, mountain rescue, safety focused social evenings, SIV training. My hope is that this is not a short term surge in interest in response to the recent accidents. There are encouraging signs that this is not the case which is demonstrated by the forum response to Chris's Columbian accident. After initial discussion on the accident it became clear that the main area of interest (and controversy) was his choice of wing. As a result, Ali Westle initiated a secondary thread on Glider Choice. The combined total of posts on the two threads exceeded 70 with just short of 1000 viewings.

In summary; Chris was flying his Ozone M6, an EN D wing. Several pilots challenged this choice arguing that such a choice is intrinsically unsafe. Furthermore, the intricacies, physical and mental, of flying such a high performance glider actually detract from the flying experience and can reduce the potential achievement of the actual flight, measured by, say, distance achieved. Much of the discussion was conducted by some of the club's most experienced pilots. Strong opinions were evident. Chris robustly defended his choice but it is probably fair to say some of his critics were not convinced by his argument. This highlights an important issue with paragliding safety. As pilots, where does our responsibility to other pilots lie? We call it free flight. We are all free to fly whatever wing we want. Equally, if we see a pilot doing something which we feel is unsafe we must have some degree of moral responsibility to speak out. Equally, if criticized, we are fully entitled to argue our case and carry on. As CSO my view is that I (we) are required to inform pilots (in a polite, non-pontificating manner) where we believe their choices are unsafe. It is not my (your) job to harass and harangue. I believe the forum, in spite of some initial misgivings, can achieve this function and in this instant succeeded. And again I would like to thank Chris Little for airing the subject.

As to the content of the discussion, it was wide ranging but at times fairly nuanced. It would be hard to produce a summary that does justice to all the views expressed, so I won't. I suggest any pilot thinking of moving up an EN category takes a look.

As one of my contributions to the discussion I said

“This latter part of the discussion on the thread, Wing Choice, is probably the least relevant to most of our pilots in that it has become focused almost entirely on the wisdom of upgrading to an EN D wing. How many of you out there are thinking of flying an EN D? Well good for you, I'm sure you know where/who to go to for advice in the unlikely event you need it. For the rest of us mere mortals what advice is there for pilots considering going from A to B or perhaps C? Or it, seems more relevantly, to climb the performance ladder within the EN B category”.

I still think this is true. One of the interesting and important lines of discussion that did emerge from the thread was the massive variation of performance (and hence safety) within the EN B classification with several comments along the lines that EN rating is not a useful start point for choosing a low/mid-range glider. As evidence it was pointed out the 2016 Ozone Comp at Chabre will base its classes on aspect Ratio. Simply put, it's all about Aspect Ratio! (the ratio of the flat Span/Average chord.)

There is a great deal of information on this issue out there. I chose to look at the February – March edition of Cross Country Magazine No 157 for enlightenment. It contains details of a discussion and comment by various paraglider designers. Here is a flavour:

“The higher the aspect ratio, the more intelligent the conversation between you and the wing has to be.[...] but you need to be able to understand the conversation.”

“In the last few years there has been a revolution in glider design, plastic rods, sharknose, more efficient line layouts, 3D panel shaping and cleaner aerofoils. Wings are punchier, easy to fly and more collapse resistant. An outcome is that performance wings are regularly getting EN C or even EN B ratings. The upside is safer wings however it has implications for pilot education. The Gin Carerra is often used as an example of the problem. It was designed as an EN C class glider but was given EN B certification although the manufacturer insists that it is for experienced XC pilots. Although that is how it was marketed there were cases of EN B pilots getting on board and getting a fright. Being a B wing does not mean it is for B pilots”.

“It is all about balancing the progression of longer skinnier gliders becoming safer because of advances in design with the need for pilot education. The message is slowly getting through. Pilots need to make themselves much more aware about the characteristics of the wing before flying them”.

“Relying on EN Class was never enough, and is even less important now”

### **High Aspect Versus Low Aspect**

Given the same overall weight, in general a pilot can expect:

#### **Lower A/R**

- The glider will roll more easily and will be more maneuverable; you can turn more easily in a thermal.
- Has more induced drag. (drag created by wing tip vortices etc)
- ... but less parasitic drag. (drag created by lines, wing surfaces etc)
- .... Hence performance is not so good.
- Has easier launch characteristics.
- Will be more forgiving of pilot error.

## Higher A/R

- Has less roll so takes more space to turn.
- Has less induced drag ...
- ... but more parasitic drag
- ... which results in a better glide performance. Has more demanding launch and flying characteristics.
- Needs more precise piloting and will be less forgiving of errors.

“low A/R wings are more forgiving in every situation ... when the glider moves [on launch or in the air] if the pilot’s reactions are late then they can have problems”

For interest, here are a few examples of wings and ENB ratings:

Manufacturer	Glider	Aspect Ratio	EN Rating	Comment
Ozone	Atom 3	4.26	A	
	Buzz Z5	5.16	B	
	Rush 4	5.55	B	
	Delta 2	6.0	C	
	Mantra 6	6.9	D	
Advance	Alpha	4.8	A	
	Epsilon	5.15	B	
	Iota	5.5	B	
	Sigma	5.8	C	
	Omega X Alps	6.9	D	
Gin	Bolero	4.8	A	
	Atlas	5.21	B	
	Carerra	6.2	B	“performance class”
	Boomerang 10	7.7	CCC	
				Data taken from manufacturer web sites.

The key point for pilots thinking of changing gliders particularly in the EN B classification is to seek advice from a trusted source. (and perhaps avoid a bargain Carrera on E Bay) There is a massive choice out there, particularly in the EN B classification. The key to making the right choice is to be absolutely honest in your self-assessment; you have to balance your flying aspirations with your ability. If they don’t match make the effort to balance the equation.

But returning to the theme of safety on the forum! Not all the discussion has been about accidents. There have been a number of posts referring to incidents and situations not resulting in an injury but which could have done so in slightly different circumstances. The full details are on the forum for those interested however:

<http://www.cumbriasoaringclub.co.uk/forum/viewtopic.php?f=20&t=3709> Ali starts a thread "4 bad things happen to me". Each event could have caused a serious problem but everything worked out for the better. It's worth looking at if you haven't already but the lessons are:

- Do your pre-flight checks.
- If you land, do them again.
- If you're flying and things look weird, don't panic.
- Review all your new equipment for potential inflight problems (even gloves).

James Harrison continued the movement with a confession that having landed and removed his helmet he failed to refasten. It fell off in flight. Happy ending, he managed to find it in the snow. Pre-flight checks - again!

Simon Blake then responded with the stronger advice along with evidence for his view – "NEVER under any circumstances, be strapped to a paraglider without a helmet fastened on your head".

James Jackson joined the fray with his description of a Winter fly-down from Blease. "Anyway, within 2 minutes I was at cloud base on big-ears and full speed bar with the wing thrashing around. Oh, and by now it was snowing!" The lesson he identified was if your head says "it feels a bit weird, don't take off in this" but your heart says "go on, it'll be a laugh".... listen to your head!

Actually there are no new lessons in any of this. It is a reiteration of all the lessons learnt when we started out as pilots but subsequently have lost sight of due to over-familiarity, over confidence, a blasé attitude or perhaps rushing to get in the air.

This is the value of our Forum Discussion. It serves as an ongoing reality check and an aide memoire. Because we share a familiarity with the pilots involved and the sites they are flying it resonates and is more likely to sink in. Please read the Club Forum even if you don't intend to post.

*Fly lots, fly safe!*

*CSO*