



Photo: Mike King

attitude

# EN C paragliders and folding lines

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In February this year the European Committee for Standardisation (CEN) published an amendment to the Paraglider Flight Safety Characteristics Standard (EN 926-2)\*. This brought about a small but potentially significant change to the way certain paragliders are tested.

EN A, B and D class wings tested under the amended standard are largely unaffected, although it's worth noting that the method EN test pilots use to induce test collapses has been adjusted. However the significant change comes to the C class.

Manufacturers can put a wing forward for testing in the EN C class fitted with 'folding lines' to initiate the standard's asymmetric and symmetric collapse tests. Prior to this amendment, any wing that needed folding lines for the tests was automatically classified EN D. At the time of writing at least one manufacturer has a new EN C wing on the market that takes advantage of this amendment. Given the interest, other manufacturers will undoubtedly follow suit.

## Why folding lines?

The need for folding lines results from manufacturers designing gliders whose line layouts prevent the EN test collapses being made in the normal way described in the standard. These line arrangements have most commonly been found on high performance paragliders, particularly those known as 'two-liners'. Two-liner gliders have been around for several years and most of the major manufacturers have one in their range.

Two-liners usually have two risers per side. Unlike a traditional setup, where the front riser is connected only to lines from the leading edge, the front riser of a two-liner picks up the lines from the A and B

attachment points on the wing's bottom surface. The rear riser picks up the lines further back along the chord. This rear riser often incorporates handles as an alternative means of control to the traditional brakes attached to the trailing edge. Two-liner gliders are designed to be flown actively using the speed bar to race; correct use of these handles can have a competitive advantage at higher speeds.

Historically, two-liner EN D gliders have high aspect ratios, many cells, complex spanwise reinforcement, extreme shark-nose leading edge profiles and rods along the chord to enhance structural rigidity and collapse-resistance at high speed. They are designed to be solid in flight, but when they do misbehave, collapses and other departures from normal flight can be very dynamic. Like traditional (non-two-liner) EN D class gliders, two-liner EN Ds are intended for highly-experienced pilots who can precisely pilot their wings in turbulent air, and who have mastered the various SIV skills.

## Be aware

With the introduction of two-liners in the EN C class, much of the technology used on D class two-liners will find its way into these new C wings. The BHPA FSC anticipates a lot of interest from pilots considering moving from their EN B to a two-liner EN C. For pilots wishing to take advantage of the performance of two-liners with rear riser handles, it is important to be aware that they will need to adapt their

piloting skills to embrace control inputs made with B handles, as well as the normal paraglider controls.

This should initially be practised in calm air, as vigorous or deep B handle input may bring about a stall. Depending on the line layout, big ears may be initiated by outer lines on the rear riser rather than the front, so consult the manufacturer's user guide before attempting this manoeuvre.

Remember that most two-liners can only be intentionally collapsed for training purposes with additional folding lines, and this may tempt you to stop practising collapses. However, every glider can collapse and training is important and should still be practised, for example during SIV/Advanced Glider Control training. In addition, the line layout will prevent B line rapid descents.

When a glider is presented for testing under EN 926-2, the manufacturer must supply each production glider with an additional set of lines. These can be attached to tabs close to the leading edge for the purpose of inducing collapses in accordance with the standard. If you want to initiate collapses like the ones in the EN standard on an SIV/Advanced Glider Control course you will need to install the folding lines supplied by your glider's manufacturer.

\* See *What is EN 926-2?* on Page 10 of this issue