

# How to choose the right paraglider

TOBY COLOMBÉ CUTS THROUGH THE FLUFF TO OFFER SOUND ADVICE. PART 2: USABLE V. QUOTED PERFORMANCE, HANDLING AND OTHER VARIABLES



Photo: Martijn van Dijk

Last month I cleared up some myths about certification, discussed how to work out the right wing rating for you, and where to aim for on the glider's weight range. But no discussion on choosing a wing would be complete without discussing performance.

## Performance

What do we mean by performance? There are two important aspects to a wing's performance that need to be discussed. These are speed and glide (angle). The sink rate of a wing is by definition a function of the other two (or vice-versa if you like). Speed is useful to get places quickly and glide lets you arrive there higher – or just get there as opposed to not quite making it.

Performance is almost impossible to measure accurately. This is because paragliders fly so slowly, are so susceptible to even the smallest airflow changes and because totally still air is almost impossible to find. Even on still days the air is usually sinking or rising slowly. It is easier to measure the relative performance of a wing, comparing its performance with another wing and swapping pilots and so on several times to obtain a statistically valid picture.

Whilst the performance differences between classes are very apparent, within a class (i.e. between brands) the differences are usually very small indeed. Also bear in mind that manufacturers' performance claims should be treated with plenty of scepticism. For most pilots flying EN B or even EN C wings (assuming the wing is of a modern design and in good condition), performance in unaccelerated flight shouldn't even be considered. Any noticeable performance differences at this level are more easily influenced by wing loading (where you are on the weight range), and perhaps even harness profile, than any other factor.

Where performance differences become more noticeable is when the speed bar is used. In fact there is very little performance difference between an EN B and an EN C wing until you apply the speed bar! On lower-end wings, applying speed bar (particularly lots of it) will, in still air,

greatly reduce your glide angle. The higher the wing rating then, generally, your speed bar will give lots more speed without reducing your sink rate too much. Unfortunately manufacturers rarely if ever publish glide angle on bar (and even if they did the difficulty in measuring it would leave the data open to doubt).

So given that published performance data is hardly worth bothering with, and the fact that the most important data – a glider's performance at speed – is never even published, where should we start? And what do pilots mean when they talk about 'useable performance'? Increased speed or increased glide is not worth having if a wing can't turn or if it collapses all the time. There are three aspects to consider when it comes to useable performance.

**1. When thermalling.** In XC flying a significant amount of time is spent thermalling. One question you should ask



A significant amount of time is spent thermalling ...

yourself is how easy it is to thermal with a wing? How does it turn? How does it bite into thermals? How easy is it to manage in thermals of different types? Some wings 'bite' into thermals better than others.

**2. On bar.** If a wing cannot be flown on full bar in anything but the smoothest of conditions because, for example, of a propensity to collapse, what use is the so called top-speed? How well does the glider deal with turbulence on bar?

**3. In thermic air.** Similarly, in normal flying conditions, can you let the wing fly hands-up or does it always need reining in? Manufacturers' claims are made even less

significant if the wing needs so much managing that its claimed performance can only be achieved in relatively still air. Turbulence, no matter how light, will always reduce a wing's glide - and how a wing's performance changes with turbulence is even harder to measure!

When it comes to quoted performance, I suggest you give it little attention at all, unless you have hundreds of hours and regularly fly big distances or in competitions. Consider instead the factors surrounding a wing's usable performance, and most importantly of all how it handles.

## Handling

A high-performing wing is of no use at all if it won't turn, if it collapses all the time, or behaves like a beast and leaves your nerves frayed. Flying is all about having fun and being safe. Indeed, having fun and being safe are the two most important factors that will influence how you improve and develop as a pilot. So pick a wing whose handling you like.

When it comes to choosing a car, for example, whilst you might prefer how a certain car drives, your friend might prefer another. There's not necessarily a right or wrong answer. There's room for taste. The same is true when it comes to choosing a wing. However the challenge, when it comes to choosing a wing, is how to appreciate handling differences, especially if you lack experience.

If you want to develop your skills as a wine taster, be critical, be aware, and drink lots of it! And so it is when it comes to critiquing wings. As a starting point though, once you've more or less decided on which category to aim for, what are the handling characteristics that you should be considering? These might then lead you to at least start asking the right questions. Let's look at some wing characteristics worth considering.

## MENTOR 4 - gets you further

More technology, more know-how, more performance: The MENTOR 4 is the next milestone in the XC intermediate class. As well as improving its performance across the whole polar curve, the MENTOR 4 also offers refined handling in thermals, balanced roll damping and even better climb characteristics. And thanks to its compact sail, the wing has gained efficiency and is also faster.

Better glide. Better climb. Better handling.  
MENTOR 4 (EN B) - the XC machine.

[www.nova-wings.com](http://www.nova-wings.com)



## South America Trips 2015 & 16



**Chile November 2015**  
(for CP+)

Iquique delivers the most consistent flying conditions in the world. Superb XC start points, 3000' sand dunes and a lively nightlife.  
[www.activeedge.co.uk/advanced-courses.php](http://www.activeedge.co.uk/advanced-courses.php)



**Brazil January - March 2016**  
(for P+)

One of the world's premier free flying destinations. Offering smooth, reliable and user-friendly thermals all the way to a warm cloudbase, above a beautiful green landscape. 3 x combined tours with  
[www.xcbrazil.com](http://www.xcbrazil.com)



*Both trips will be guided by Dean.*



**BHPA Paragliding Courses**

Based in the beautiful Yorkshire Dales, run by Dean Crosby former British Paragliding Champion and multiple XC Champion.



[www.activeedge.co.uk](http://www.activeedge.co.uk)  
Email: [dean@activeedge.co.uk](mailto:dean@activeedge.co.uk)  
Mob: 07793 678133  
Tel: 0845 129 8286

**NOVA UK distributors**

## Wing weight: lightness v. heavy?

Some wings are heavier than others. This is not just a result of the type of cloth with which they are made but also how much internal construction there is, and of course the amount of line used, risers and so on. Recently there has been a move to heavier construction in the leading edge, but thankfully the heavier Gelvenor cloths are now rarely used. A light wing will tend to be easier to launch and have a crisper, more dynamic, less sluggish feel to it than some of the weightier wings.

What about the very lightweight wings? Those weighing less than 5kg tend to fall into two categories: the 'travel' wings (4 - 5kg) and the 'mountain' wings (less than 4kg). Be careful about going too light - such wings tend to be made from material that is so light that the life expectancy and durability is very noticeably compromised.

## Brake pressure

Some pilots like brake pressure that is light and others heavy. Heavy brake pressure can make a wing feel more reassuring, but can also be tiring if you spend a long time in the air. Heavy brake pressure is a particular feature that can be found more often in lower-end wings, but is sometimes found at the higher end too these days. Some manufacturers have heavier handling than others. Some have a direct feel where you feel very much 'in touch' with your wing, and others a more damped feel. I generally prefer a more direct feel, but that's just me.

## Brake travel

The higher-end wings generally have shorter brake travel. Indeed there is a strong correlation between brake travel and rating which is inherent in the certification systems. The shorter brake travel common in higher end wings means that corrections and piloting require only small inputs which can be less tiring. It also means that is a wing is easier to stall either inadvertently (!) or on landing when you need to collapse it. The long brake travel common to EN A wings can make them cumbersome and difficult to 'kill in stronger winds.

As well as length of travel, some wings have very progressive 'pressure' and others feel more on or off. Most pilots prefer a more progressive feel.

## Pitch stability

A very stable wing is very difficult to manoeuvre. A completely unstable wing would be a nightmare to try and keep in the air. The question then is how stable should your wing be? Stability in pitch usually means it's more efficient and smoother to fly, but some instability will allow for more manoeuvrability and playfulness.



Photo: Gareth Shaw

How a wing launches is also a factor to consider

## Roll stability

Most lower end wings are quite pitch stable, but suffer from more roll instability. Roll is more difficult to pilot, but it can render a wing more playful and 'wangy'.

## Launch characteristics

How a wing launches is also a factor to consider when making a purchase. Most low-end wings do not have a tendency to overshoot, however some of the less pitch-stable wings will require a more polished launch technique.

## The turn

How a wing turns is surprisingly complicated. It is a function of its pitch, roll, yaw, and responsiveness to brake inputs. Although some wings tend to dive more on turning than others, none of them turn totally flat. If a wing tends to dive on turn, how it recovers (and climbs) on exiting a turn is the real question to ask. In the end this is a complicated area of dynamics. There are different ways to turn

different wings. Experiment safely. Enjoy ... and never stop learning.

## A final word

In conclusion, if you want the best wing, pick one that's not going to scare you. Be honest about your current level. Maybe the wing you currently own is just fine and your money would be better spent on some decent training. Don't be tempted to think too much about performance. Instead focus on where you'll be on the weight range and how the wing handles.

By all means test fly three or four wings (no more or you'll probably confuse yourself). If you lack the experience and time, consider the opinions of trusted pilots more than the reviews!

All that's left is to choose a snazzy colour, make sure you've got swivel brakes, butt holes(!) or whatever other little features you think you might need, and enjoy!

*Toby Colombé is a British Team Pilot, tandem World Record holder, BHPA instructor and proprietor of adventure paragliding and post-CP development company Passion Paragliding. Toby can be contacted by e-mail at [toby@passionparagliding.com](mailto:toby@passionparagliding.com).*

If you want the best wing, pick one that's not going to scare you



Photo: Al James

Extract from Skywings Magazine July 2015 ©BHPA