

Choosing a glider

Dennis and Gillian Trott take a close look at certification classes

Having discussed harnesses (Skywings, March), we now move on to gliders. Paraglider design is anything but static; it is continually evolving as innovative designers and developers pursue higher performance, better handling and advances in construction.

We need to begin at the certification level. Our aim is to help you recognise your own pilot skill level, and to equate that with a suitably-rated glider to keep you safe whilst improving your skills at your own pace.

Through working with beginners (and intermediate and advanced pilots) we are well versed in the type of errors that occur in a pilot's early days. Designers take these into account and develop gliders to serve a certain level of pilot.

As the pilot progresses those early errors are less evident and designers can address more advanced skills. They really know what they are doing; the result is a spectrum of gliders that are precisely calculated for our safety and enjoyment at every level.

Every glider has to withstand rigorous testing to qualify for its certification rating. The tests are designed to establish the limits of controlled flight and a glider's behaviour when bent out of shape. The classification achieved enables the pilot to make an informed choice, balancing their skill and experience against the handling and recovery characteristics of the glider.

If you are serious about your flying, we suggest you adopt a little humility and learn to walk before you run. Honesty is always the best policy, and the case of learning to fly well is no exception. Wanting to run before you can walk is all part of human nature, but tempering your eagerness to fly a hot ship before you're ready will be beneficial in the long run. In this article we hope to assist you in making that informed choice, keeping a level head to select a wing that serve you well as you progress.

Gliders are rated, by both the EN and similar LTF systems, in four categories from A to D. These are arrived at by putting the wing through up to 24 controlled exercises. Each exercise evaluates how a glider responds to the test pilot's control inputs. How the glider reacts, and the recovery time before stable flight is regained, are noted. Some exercises cover big collapses, stalls and spins. A glider designed for inexperienced pilots should recover rapidly without pilot input; gliders designed for experienced pilots require exacting pilot inputs to recover them. Test reports are available online for all certified gliders and it's well worth looking at the report for any intended purchase.¹

However these exercises are only simulations, deliberately provoked in relatively smooth flying conditions. Real problems occur in turbulent, thermic or windy conditions, often a combination of these, with an anxious or inexperienced pilot at the controls.

Even if a glider will recover to stable flight, serious accidents can happen when there is insufficient height for full recovery. Most problems occur as a result of a pilot's



An up-to-date EN A is the ideal beginner wing (Independence Cruiser 2)

PHOTO: CAPRA/SOLUK

reactions, either under or overcorrecting. This can slow down the recovery process or make the problem worse by not giving the glider time to recover. This is most likely when a pilot is flying a glider they are not ready for, having moved up the performance scale prematurely.

Which gliders are suitable for beginner training?

Beginner courses up to BHPA Club Pilot (CP) level are normally completed on an A-rated glider.

However, there are some "low end" B-rated gliders that may be suitable for beginner training.

Beginner training courses qualify a pilot to a basic level at which the new pilot should be able to launch, fly fairly confidently and land within a given area. A-rated gliders are perfect for initial training as their ease of use is very inspiring and a new pilot can gain confidence whilst learning the ropes.

Such gliders are "bullet proof" and will recover quickly from any upset without the need for pilot input. *But they still require height to do so.*



Another take on the ubiquitous EN A wing, the perfect glider for your first steps in flying (Nova Prion)

PHOTO: NOVA

After a pilot qualifies, should they stay with an 'A' rated glider?

A-rated gliders are not only for school and training use but can be very good first post-school wings for the new pilot. They fly and handle well, not just for ridge soaring but for thermalling and XC flights. A-rated gliders turn and thermal as well as many higher-rated wings; they are just a little less efficient in the turn and on straight-line glides.

Such gliders should not be underestimated; they are stable and fun to fly. They will look after the new pilot and teach them a lot about flying in a variation of conditions. They have been designed to launch easily, and launching is the most difficult of all paragliding exercises.

Gradual progression is vital at this stage, and the new pilot needs keen ground handling skills and near-perfection on launch before moving up to a higher-performing glider. If the pilot is struggling to launch an A-rated glider with either forward or reverse techniques and cannot land in a specified area, they still have a lot to work on. A higher-rated glider will not be any easier!

A new pilot needs to be realistic about their future flying requirements. How much time will they really have available for flying? Where they will be flying and what do they hope to achieve? Interestingly, a good A-rated wing holds its value well and is usually easy to move on when trading up.



A high-end, lightweight EN B is all most pilots will ever need for fun and XC flying (Ozone Swift on the slopes of the Eiger)

PHOTO: OZONE/ALAIN ZENGER

B-rated gliders

The B rating is a broad church. A low-rated B glider will have one or two B results in tests with the rest at A. Handling and performance will be similar to an A-rated wing and any differences may be very hard to discern!

Conversely the high-rated B wing will have a number of B test results. This doesn't make it an

unsafe wing, it just reflects its more dynamic handling. For instance it may have more pitch and roll movement and feel more lively in boisterous conditions. It will definitely have more dynamic launch and landing idiosyncrasies, and the glide and its speed will be noticeably different to a lower-rated wing!

B-rated wings are good for the active club pilot, and their performance will probably be all they would ever need for fun and XC flying. But a high-end B glider is not for the new CP, especially if they are not entirely confident with their abilities, ground handling and general flying skills. Far better to stay with an A or low-end B glider until they have accumulated at least 30 hours airtime in mixed conditions, or until they feel ready for the move up.

Often the mistake is in moving up - or being sold - a high-end B-rated glider and being told, "You'll be all right. Just to be careful - you will grow into it." We grow *out of* rather than *into* gliders!

For most intermediate pilots a B-rated glider will satisfy all flying requirements. Popular makes that have been looked after will hold their value quite well. However nearly all manufacturers plan a three-year design cycle. Models are updated every three years, and the newer model will have better performance and, usually, easier handling. Once a glider has been superseded the second-hand value plummets, so the choice is between a long-term investment or a two-year turnaround, selling it on while it still has some value.

What about lightweight gliders?

Most of today's lightweight gliders are B-rated. Lightweight wings often feel a little more dynamic than the standard B-rated wing as they have less internal support, lighter fabric and fewer lines to save weight. These differences give the gliders less rigidity, making them feel much more lively in the air. This doesn't detract from the rating - it's still a B-rated glider. They can feel especially lively if used with a lightweight harness as these are not as stable as the conventional-type harness, as discussed in our earlier article. The combination of lightweight glider and harness can have a sporty feel and we wouldn't recommend it to the new CP.



A low-end EN B will take you through your first 30 hours or so and will not hold you back (Advance Alpha 4 even stays with hangies!)

PHOTO: CROWN COPYRIGHT/GABRIEL MORENO

¹ Test reports for certificated gliders can be found at the sources below. Most manufacturers also carry test reports of their gliders on their own websites.

DHV (German) tests to LTF standard

FFVL (French) tests to EN standard

Air Turquoise (Swiss) tests to EN standard

Air Turquoise (Swiss) tests to LTF standard

Para Academy (German) tests to LTF standard

www.dhv.de/typo/Testing.19.0.html

<http://federation.ffvl.fr/techniques-et-securite>

www.para-test.com

www.para-test.de

<http://para-academy.eu>



EN C wing: OK if you are a seasoned and current pilot with lots of experience, including SIV training

PHOTO: AIRWAYE

C-rated gliders

Certification reports on C-rated gliders can vary enormously. There are "low" and "high" rated wings and a glider only needs one C-rated result for it to be classed as a C. At the other end of the scale the glider could carry a number of Cs indicating that it could be a real handful in lively conditions. C-rated gliders can be great to fly but it takes a seasoned and current pilot with a great deal of experience, including SIV training, to get the best out of one.

We recommend that the LTF/EN exercises are studied and understood for all classes, especially ratings for C and D gliders. Read "between the lines" so that recovery times and necessary pilot inputs for recovery are understood. Go to the manufacturer's website and study the glider manual. Second-hand values of C and D rated gliders are poor even if the glider only has a few hours of airtime.

D-rated gliders

Developments from the world of pure competition are being passed down to the EN-D (Serial) class, and then in turn into the lower classes. The

The Serial Class - pure competition wings for highly-experienced and current pilots who have total mastery of recovery techniques (Gin Boomerang Sport - LTF 2-3 and now EN D - at Dent du Cruet, Annecy)

PHOTO: JEROME MAUPONT

current crop of D-rated gliders display excellent glide, accelerated speed and glide-at-speed, their handling qualities are impressive and they respond to the smallest inputs. These gliders are exciting to fly but they are only for the highly-experienced and current pilot whose aspirations are for serious XC and Serial class competition. Pilots need to understand how to control a glider in all conditions, and be prepared to be bitten every so often. Respect, and complete mastery of recovery techniques, are essential.

Are there different types of high-performance glider?

Serious (EN D) competition gliders are designed for speed and maximum glide and often have very few suspension lines. These gliders are not suitable for acro as they wouldn't cope with the excessive loads generated by extreme manoeuvres. And using an ordinary glider for serious acro flying will shorten its life considerably! Several manufacturers make gliders and harnesses specifically for acro, and serious acro pilots should follow this road.

Traps to avoid

Don't just buy a certain glider because it's cheap, or because it's all that's available right now. It's always worth waiting a few weeks for the correct glider! And make sure you are within the correct weight range. Weight ranges given in glider specifications are all-up weights: glider, harness, reserve, pilot, flying clothing and gear, drinking water, lunch, wallet... everything! Most gliders fly best when loaded at the middle to upper part of the weight range, say around 75% of the maximum. And if you fly a glider outside the manufacturer's weight range you may encounter some surprising reactions. This is a serious consideration!

In summary

Over the years we've had pilots visit us who have been oblivious to their harness set-up, flown gliders too large or too small for them and gliders beyond their capabilities. All of these situations have consequences. It's no fun being spooked by an overly-active glider when you're not ready for it, or flying a glider that you are far too heavy for so you're struggling to stay up in the light stuff, or one that you are too light for.

Repetition and experience are the best instructors. When you feel that you are outflying your glider rather than your glider outflying you... that is the time to consider moving up a level. If you are still apprehensive on your present glider, wait until your anxiety levels have dropped before considering a move up.

We don't want to dampen your enthusiasm - we all love flying, it's why we do it - but in tempering the over-enthusiasm of your early days, and helping you make sound judgements and informed choices, we hope to free you up to really enjoy your flying.

It's sad when a pilot's dreams are dashed because their first and only taste of paragliding has been tainted by an unsuitable glider and an ill-fitting harness. When you are set up correctly with the right harness and glider for your needs, over time you will build confidence in your abilities. And, most importantly, you will learn to trust your exquisitely-designed equipment. When that begins to happen the freedom of flight really takes off!

Dennis and Gillian Trott run the Alpine Flying Centre, a BHPA school based in France (www.flyers-lodge.com). The above article will shortly be available as a podcast at alpineflyer.com/podcasts.

EN classification and required pilot skills

Class	Description of flight characteristics	Pilot skills required (and BHPA clarification ²)
A	Paragliders with maximum passive safety and extremely forgiving flying characteristics. Gliders with good resistance to departures from normal flight.	Designed for all pilots including pilots under all levels of training. (For all pilots especially those in their first year of flying and for experienced pilots with limited currency, for example those who fly less than 25 five hours a year.)
B	Paragliders with good passive safety and forgiving flying characteristics. Gliders with some resistance to departures from normal flight.	Designed for all pilots including pilots under all levels of training. (There are a wide range of gliders produced in this category. Some are closer to A-class gliders. Others are for pilots who have gained more than 30 hours mixed flying (at least 10 in thermic conditions) and hold a Pilot rating. B class gliders are also suitable for experienced pilots who fly less than 50 hours a year.)
C	Paragliders with moderate passive safety and with potentially dynamic reactions to turbulence and pilot errors. Recovery to normal flight may require precise pilot input.	Designed for pilots familiar with recovery techniques, who fly "actively" and regularly, and understand the implications of flying a glider with reduced passive safety. (For pilots who are Advanced Pilot rated, have several hundred hours logged (many of these in thermic conditions), have completed SIV courses, are flying 10 or more hours a month, and enjoy dealing with large asymmetric collapses etc.)
D	Paragliders with demanding flying characteristics and potentially violent reactions to turbulence and pilot errors. Recovery to normal flight requires precise pilot input.	Designed for pilots well practised in recovery techniques, who fly very actively, have significant experience of flying in turbulent conditions, and who accept the implications of flying such a wing. (For pilots who have been flying for many years, fly more than 200 hours a year often in strong thermic conditions and are masters of the various SIV skills.)

² See Safety Matters, February 2010