

RAPTOR 2 VS RAZOR HEAD 2 HEAD

INTRO → Intro copy about the head to head idea each issue. The first two competing are the Raptor 2 from ? been around? and the new Razor kite from ? been around? maybe Sheep telephoned five poisons.



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Inflatable bladder kites are getting all the press. But out on the fringes of the kiting world, incredibly high performance kites are being engineered by manufacturers with solid backgrounds in aerodynamic design. Airera and Ozone at two such companies at the forefront of cutting edge development. The Raptor 2 and the Razor are high aspect four line kites built for speed and marketed primarily to buggers and all-terrain boarders. Kiteworld's review team grabbed an armful of the latest production models off the shelves and took them for a spring test session at Bridlington Beach, England.

The kites under review are the 3.5m and 5.5m sizes of each model. These are standard kites as supplied to the public, and were set up by the testers. Both kites are designed to suit reasonably experienced buggers - for use recreationally and for racing. The Raptor 2 is a development of the original Raptor series, which was considered an out and out racing kite with great speed but demanding behaviour. The kites are designed in Germany and produced in China.

The Razor is a new kid on the block and is the second product - and first race kite - from the Ozone stable. Ozone's first kite - the Little Devil - is steadily establishing itself as a good first-time buy. Ozone is a British company but based in the South of France and the production facility is at their own factory in Vietnam. Both Airera and Ozone are well-known paraglider manufacturers who bring a wealth of aerodynamic and construction expertise to their products.

The Raptor 2 has a solid coloured top surface and an elegant sweep of colour across the white bottom surface. The Razor has a plain white bottom surface, but an intricate pattern inlaid into the top surface, which is partially visible, through the bottom surface, when the sun is shining. There was no wind on the first morning so we had plenty of time to give them a good look over.

TECHNICAL INFORMATION

AIRERA RAPTOR 2

This kite is constructed of Skytex 44gsm fabric with a tape reinforced leading and trailing edge. The cell walls are stiffened with mylar to help hold an 'open' shape and to aid inflation.

The Raptor 2 features 26 cells (3.5m & 5.5 model) of which ??? are complete airfoil sections with sealed leading edges. The open cells, allowing inflation, are arranged in an interrupted pattern with the main block in the centre and one open cell per side slightly further out, along the leading edge. Diagonal rib technology is used to minimise the number of line attachment points, therefore reducing drag. The airfoil section is a semi-symmetrical high-speed section. The line material is Elderid unsheathed dyneema. The ends are spliced and glued to give a very neat

finish. The Raptor 2 has considerable internal reinforcement including span-wise fabric strips and tape across each major cell wall vent to minimise distortion of the airfoil. The very back of the ribs are made of mesh to allow sand or water to migrate to the tip where a Velcro tear panel - on the 2002 model only - allows emptying! A lot of work back here! It is our view that the kite is very well made and will give years of service with hard use. Interestingly, when we measured the kite we found that the true flat area was some 15 per cent smaller than the Razor. This was true of both the 3.5m and 5.5m models.

OZONE RAZOR

Also made of Skytex 44gsm fabric with Elderid dyneema line and also with 26 cells on the 3.5m and 5.5m model. The Razor has mylar tape around the cell entries but no vertical stiffening of the cell walls. The open cell entries are all located in one block in the centre. The planform was very similar, with the cord's front to back measurement just 18mm less than the Raptor 2. The span however was noticeably greater, giving the kite a slightly bigger area and higher flat aspect ratio. In the air the kite is more curved in flight and the projected aspect ratio and areas are actually

slightly smaller than the Raptor 2. The line hook-up points are stitched rather than spliced. Inside it also has diagonal ribs and each vent in the cell walls has a ring of stitching around it, presumably to minimise cell damage in the case of a nose down pressure wave. An interesting design feature is the positioning of the control or brake line hook-up points. These are not right on the trailing edge - like the Raptor 2 - but are slightly inboard, meaning that the brakes act more like flaps on an aircraft, rather than curling the trailing edge under when applied. We noted that the bridling is longer than the Raptor 2, making the lines almost a metre longer. Like the Raptor 2, each tip is closed with Velcro, rather than being stitched, allowing it to be opened to allow any sand or water to be easily drained after use. With a large proportion of the kite's leading edge sealed, this is a very useful device! The kite is well-made and shows good attention to detail. Again there are no areas that we would expect to give problems even after years of use.

LAUNCH

In very light winds - on the lower range of possibility, and when buggying was not practical - both kites launched very well despite the relatively small number

of open cells. Both kept flying and generating reasonable power as long as they were being worked. Both are high aspect ratio race kites and required a pump or two on the way up in order to fully pressurise the wing. There were no problems at all with either one and there was nothing to choose between them.

Both kites are fast, and in stronger winds leapt into the power band with real surge, giving the pilot a powerful acceleration from a standing start. When launched from nose down the Razor does not fly backwards quite as easily and it requires a little more practise to perfect the technique of flipping it into the flying position.

IN FLIGHT

In smooth sea breezes both flew perfectly and we had a lot of fun synchro flying them. The turn radius was very similar, as was the acceleration, though the power of the Razor was slightly more noticeable. This was partly because of the slight difference in size but also because the power delivery was pretty sharp. The Raptor was smoother, but the Razor had a bit more sheer grunt. The Razor brakes are noticeably heavier than the Raptor, due to their inboard positioning on the wing. This brake fan arrangement is a common technique on

high aspect ratio paragliders and minimises the wing tips bending backwards when braking hard. It also allows the kite to be 'powered up' when held in one position, increasing lift if both brakes are applied slightly by reducing the 'auto braking' caused by the drag on the lines. This is one reason quad line kites are slower than twin lines. However, as mentioned, it does increase the pressure required to initiate turns, and in a long race will need plenty of wrist work! This is almost unnoticeable on the smaller kite but is more pronounced on the larger models.

In strong gusty winds The Raptor 2 was certainly easier to cope with and showed less tendency to tuck or collapse if left alone. The Razor required slightly more active flying with a dab of brake to prevent over-flying and tucks. Interestingly when the Razor was allowed to collapse it was usually pretty easy to recover with a swift tweak. The Raptor 2 was definitely more user-friendly, and suffered much less in the gusts. But, if it does tuck, it has a tendency to form a 'bow tie' and be tough - or impossible - to recover.

As John put it succinctly: "You will finish more races with the Raptor, but - with skill- you are more likely to win with the Razor." But of course if you don't finish you won't win! →



FIRST IMPRESSIONS

Neither kite came with a rucksack or bag - though Ozone are apparently producing one soon - neither had an instruction manual, with tips for use or set-up, or a written guarantee. Both kites are supplied in a basic stuff sac without lines or handles. There's plenty of room for improvement here guys! Once out of the bags the picture brightened a little - OK, a lot. Both kites looked smart and aggressive: they are both high aspect ratio, and have swept leading edges and straight trailing edges. Both have a lot of cells giving a very clean top surface and a well-defined airfoil across the span, and a sharp trailing edge. This is quality stuff - no 'row of sausages' or 'flying mattress' comparisons to be made here!

KITE TEST

THE TEST TEAM:

IAN CURRER

Ian runs a test centre for traction kites and buggies in the northeast of England, and is the first author to pen a major instructional book on kiting - 'Kitesurfing; The complete guide'

JOHN THOMPSON

John is a regular face at the UK's parakart association races, and - when he's not out on the beach - sells kiting gear.

MARC FOTHERGILL

Marc is an experienced buggyer and qualified instructor. He has extensive experience of racing, tricking buggies, and teaching.



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We set up a wind blade at the edge of the window, and by standing on the same spot and flying each kite from the centre of the window to the very edge we established how far each one would go before running out of steam. In terms of degrees of arc the kites were so close as to be almost inseparable, the Razor having the slightest of edges. Because they both stored energy well and flew very wide - right out of the window in fact - they both tended to fold on the

reversal. This was with a standing pilot. When buggying, with a moving window, we would anticipate that both kites would have excellent upwind performance with little to choose between them. This was confirmed on our second day of testing in the buggies and reflects the experiences of pilots using these wings at PKA race meetings this year.

John and Marc raced side by side, swapped kites and raced again. We did

upwind tacks, downwind beats and high and low turns. The result of all this was that the Razor showed its slight edge in size and power by accelerating just a bit faster, but the Raptor was so close and so easy to get the best out of that in terms of useable speed they could not be separated.

LANDING

Again the difference in brake layout becomes apparent when the wings are

stalled. The Razor hangs on - like an aircraft with flaps - until it stalls abruptly and thrashes its way down like a bag of washing. Relax your grip for a second and it will start flying again and could spin on you. The Raptor by comparison is very well behaved and with a bit of practice you can stall the back half of the wing with the leading edge still intact, and drop it gracefully - perhaps gracefully is the wrong word - pretty much where you want it. *Iron*

SUMMARY

USE	RAPTOR 2	RAZOR	COMMENTS
Stunts and Tricks	1/10	1/10	Nice spins, that's your lot!
Beginner/ Intermediate	4/10	3/10	Only good if you have smooth winds Traction kite flyer - sea breezes etc.
Mountain board/ATB	6/10	5/10	Best in smooth conditions. Both are speeders not lifters, so they are poor for jumping
Parakart racing	9/10	9/10	Oh yes! These are the ones to (try to) beat
Kitesurfing	1/10	1/10	Only good if you never ever drop them
Snowkiting	5/10	6/10	Very good if its smooth but inland winds often aren't

CONCLUSIONS

Clearly both these kites aimed squarely at the speed freak, though the Raptor is noticeably more versatile than the Razor. In a back-to-back review of this kind it is easy to polarise the differences in the kites, when in fact they're pretty similar in most respects. We were impressed with both. This review is independent and has had no input from manufacturers except in the provision of technical information.

TECH SPEC

	RAPTOR 2 3.5	RAZOR 3.5	RAPTOR 2 5.5	RAZOR 5.5
Proj Area	3.16m ²	2.98m ²	4.94m ²	4.72m ²
Span	4.47m	4.13m	5.11m	5.19m
Aspect ratio	3.86	3.72	3.86	3.72
Fabric	All use Skytex Porcher marine 44gsm			
Lines	All use Elderid unsheathed Dyneema			
Price*	£299	£283	£399	£383

GUARANTEE

* Price quoted is SRP inc VAT and excludes bag, handles and lines. (Typically £70 or so)

If you'd like to see any particular products put through their paces, contact us at reviews@kiteworldmag.com