

The Omega from Advance has always been looked upon as the yardstick within the high performance market, and as such has never had to be afraid of comparison with its contemporaries in this field. The 7th generation Omega continues to show the Swiss premium brand's muscle and know-how . . .

The specification of the new Omega presented quite a challenge for the Advance development team. The current trend, already demonstrated by other manufacturers, for high performance wings to be uncompromising cross country machines put Thomas Ripplinger and his team under some pressure. To take on board this new concept and rise to the challenge would of course call for substantial investment . . .

The Omega 7 is certified as DHV 2-3 in four sizes and these cover a collective takeoff weight range of 70 to 130 kg. Advance obligingly put both the 26 and 28 models at our disposal. At just under 100 kg takeoff weight my choice went to the 26, which would be loaded at its top end. Heavier test pilots naturally flew the 28, so we could check the two sizes against each other. Glide comparisons and speed measurements were made with the 7-26 at 100 kg takeoff weight.

Construction and workmanship

The influence of the spectacular and successful competition prototypes on the production Omega 7 is unmistakable and appealing. Aspect ratio 6.3, 73 cells, the consistent and distinctively curved shape of the wing (HiArc [high arc] concept), the characteristic Advance design with the winglets all give the Omega 7 the look of a thoroughbred. In their workmanship as well as clever attention to detail Advance is always endeavouring to set the standard. The large number of interesting details in the new Omega nearly goes beyond the capacity of this report. Four different Porcher Sport cloths are used in the wing. As a function of load distribution the Ripstop is orientated at right angles to the tension vectors, so as to minimise deformation. The lines are of unsheathed Aramid, exclusively developed for Advance by Liros. The individual threads are coated before being braided, which improves the resistance to UV, minimises the absorption of moisture and dirt, and therefore prolongs the glider's life (Advance specify a check after 150 hours or two years). Even though the line diameter is a touch more conservative than that chosen for a competition glider they show workmanship that is painstaking in the extreme. The line ends are cut on an acute bias, so that they splice into the loops in a tapered fashion to avoid attracting bending points, and coloured sleeves around the loops both help with the identification of the different line groups and reinforce the knot points at the upper gallery. The uncovered

brake and speed system lines are also meticulously sewn. The risers are slim with a width of just over a centimetre, except at the carabiner ends where they are widened to preclude slipping. A differential speed system operates via two pulleys initially (less force required), then only one for the final travel (more force, and more effect per movement). The canopy build is as intricate as you would expect, and each pair of open cells share a semi-circular intake which adjoins one closed cell, which itself has a narrow strip of gauze at its leading edge. From the support points at every third cell wall V-tapes lead to the neighbour, where they end just underneath the top of the sail. The load is further transmitted to the next V-tape by an additional strap. The resulting structure inside the wing serves to distribute the greater part of the tension forces and internal pressure contours so that the upper surface is very evenly loaded. In addition there are various tension straps as well as two continuous relief bands built into the region of the D lines. Various edging strips and reinforcements go without saying.

It's still worth mentioning the SPI system, with its natty scale on the back of the D-risers. It's directly in the pilot's field of vision, and should suggest that there are cleverer ways to fly than pedal-to-the-metal every time. Then there's the 'pearl' on end of the speed system, a plastic ball that replaces the Brummel hook. You just loop your speed lines behind it - like a kite: simple.

Takeoff

The lines are relatively easy to sort. Despite the bright colours on the competition lines, however, care must be taken to check that there are no loops or knots. The wing should be laid out in a curved shape, given enough impulse to start the pull up, then allowed to come up evenly to the overhead position. Only a little brake is needed to stabilise the glider and with a few steps of acceleration we're away. For the reverse launch the Omega 7 controls and, if necessary, corrects well. Altogether the wing is good-natured at takeoff for a glider of this performance and shouldn't give its pilot serious problems. Already at the beginning of the flight the stress level is nice and low.

Only in tailwind conditions on a shallow slope is good feel for a glider together with a bit of determination necessary for getting the Omega 7 safely above the pilot. A banana layout, tensioned lines and a good starting tug give the best results.

In flight

From the beginning one is astonished at how easy, natural and precise the Omega 7 is to steer through the air. It asks for practically no settling-in time, and straightaway shows its strengths. The new Omega 7 isn't a super-agile handling marvel - it impresses because of its direct and completely linear steering response. Each centimetre of brake application

results in an immediate and exact response in turning radius. Here you can sense a change of direction in Advance philosophy. Not so long ago a rather static pilot position under the performance machine was preached, but now active steering with weight shift is back on the hymn sheet. Paragliding superstar Chrigel Maurer's handiwork can be spotted here. The 'HiArc Concept', which requires a relatively strongly arched canopy shape, is intended to improve the stability of the wing. This shape can also be flown fast in bumpy conditions, even though the idea also works well when dealing with thermals. Due to the curvature the wing is just as happy making gentle flat turns as racking steeply around on its way to cloudbase. Turning behaviour is very agreeable: the Omega has no preferences at all and takes up whatever radius you care to give it without hesitation.

The wing should be flown in the top third of its declared weight range in order to show its qualities to advantage. Unfortunately too light a pilot will be at a disadvantage, not only where the direct handling is concerned but also in respect of wing opening after a collapse. The climbing qualities are exceptional at high wing loading, and the Omega 7 also shows a high degree of pitch stability, which above all is important when both flying in rising air and during accelerated flight. The speed system is two-stage, as one might say, with the first stage easily taking up its travel via two pulleys, then one pulley is blocked so that the remaining range has less mechanical advantage, ie becoming less geared, so continuing to the full speed position over a relatively shorter push. Using this system the Omega 7 goes from about 40 km/h to a measurable 57/58 km/h.

The deflation behaviour is as you would expect, but timely intervention in every case would be an advantage. If you wait for the glider to respond to a big collapse by itself the reaction will be quite dynamic. You can expect pronounced surging and also small complementary collapses.

Rapid descent techniques

Big ears:

The A risers are split for the speed system, but this feature is not useable for big ears because of a metal guide ring. Big ears are achieved by pulling the outer A-lines down in the usual way. Reaching up for them is no problem, and Advance have provided different length risers for the different glider sizes. It takes virtually no strength to hold the ears in, and weight steering works very well. Opening is very delayed (at light wing loading active recovery action is required). The effectiveness of big ears is not great, and simultaneous speed bar is always recommended.

B-stall:

Despite the high aspect ratio the B-stall is perfectly feasible. Entry with its moderate down-load requirement and only slight pitching is without problem. Sink rates of 8 - 9 m/s are achievable, with hardly any tendency to rotate or recover. Releasing the lines allows the Omega 7 to pitch forward and smartly return to normal flight.

Spiral:

Entry to the spiral is simple because of the glider's exemplary, linear response to the pilot's steering inputs. Adjustment of the descent rate using both brakes works very well, and values on the far side of 20 m/s are possible. The Omega 7 tends to keep going by itself (lock in) at high descent rates, but light outside brake and/or outside weight shift initiates recovery, which should then be moderated with more turning in the usual way. Basically, experienced pilots will find the spiral quite manageable.

Summary:

The Advance development and test team has succeeded in producing a high performance glider which is outstanding in all areas. The design, workmanship and materials represent a new high point for paraglider production, and in the area of performance and handling the Omega 7 is an extraordinary flying machine. Special mention must be made of the accelerated flight qualities, notably the high stability and minimal pitching tendencies. The handling in turns demonstrates a good combination of stability and agility. The linear and direct steering behaviour blows you away with your ability to fly a precise track.

Cross country and experienced high performance pilots, as well as 'retirees' from the prototype field, who have the awareness and ability to make use of this glider's potential will find an outstanding performance wing in the Omega 7, within the DHV 2-3 classification.

Translation: Mike Riley