

Front picture:

**The Swiss market leader makes a successful foray into the light glider sector with the Alpha 4 Hike. THERMIK puts this classy lightweight under the microscope.**

After several years of constant requests from climbers and others wanting a light glider, top-of-the-range paraglider manufacturer Advance has eventually come up with the goods. The Alpha 4 Hike was developed using the standard Alpha 4 as a base. The Alpha 4 Hike has the same construction as the Alpha 4 - just the sail fabric, the lines and the trim have been altered. The Hike is the first serial glider in which Advance have used light material. The necessary know-how comes, in no small part, from three successful participations in the Red Bull X-Alps.

### **Construction, Workmanship**

The Alpha 4 Hike is beautifully put together (how could it be anything else from Advance?). Compared with a standard Alpha 4 the Hike is intended to be used at a higher takeoff weight, i.e. flown with a smaller wing area. Uncovered lines play their part as well. Both contribute to markedly better performance - in maximum speed as well as glide ratio. Also the handling is significantly more dynamic, without compromising the level of passive safety. The Alpha 4 Hike presents itself as a balanced and successful light glider where technical refinements (uncovered lines etc . ) find their place, but on which unnecessary loading-up with special gimmicks has been dispensed with. The fully-fledged strengthening with diagonals and tension bands are intended to resist distortion of the light sail fabric on the top and bottom wing surfaces.

### **Takeoff**

The Alpha 4 Hike shows a takeoff behaviour that's exactly what every paragliding mountain climber could wish for. If you want to take off on stony, narrow, maybe exposed places the Alpha 4 Hike can make a pleasure out of stepping into the third dimension. With a modest pull on the A-risers, forwards or backwards, the glider rises cleanly, smoothly, without tendency to overshoot, and is absolutely easy to control if corrections are necessary. With a gentle breeze from ahead the wing comes up as if directed by a superior being. But even with a light tailwind (on the snow, for example) an under-control takeoff is not a problem. My initial concern about sorting the uncovered same-colour lines was

dispelled at the first layout. The A-risers are identified by colour and the covered brake lines are obvious.

### Specifications

- Inside structure the same as the standard Alpha.
- Long life despite the lightweight design.
- Weight reduction achieved by light fabric (back of the top surface and bottom surface) and uncovered lines.

### Research:

- Experience gained by participation in three X-Alps.

### Materials/Sewing

<b>Pulleys</b>	Plastic/metal
<b>Brake handle keepers</b>	Magnetic clip
<b>Brake handle grips</b>	Soft, round strengtheners
<b>Quicklink line locators</b>	Plastic inserts
<b>Seams</b>	internal
<b>Sewing of line loops</b>	Uncovered lines neatly spliced and sewn
<b>Suspension loops</b>	Neatly sewn on reinforced ribs with load spreading webs

### Flying Qualities

Common sense about a mountain climber's glider suggests that the days of squandering those tiring, fought-for metres with a descent by means of a limp descending bag contraption can no longer be a topic of conversation. The Advance Alpha 4 Hike compels because of flying qualities that one associates with a 'proper' paraglider. The canopy stays solid and stable over the pilot, even at full accelerate, and accepts steering inputs immediately - virtually without delay. I was in the fortunate position of flying the 23, the smallest size. Because of the clearly raised wing loading really direct and dynamic handling results, although without 'over-sportive' extreme flight characteristics. But even the bigger brother (25) is almost as handy. The Alpha 4 Hike shouldn't feel any embarrassment when its performance is compared to non-lightweight paragliders. The comfortable brake pressure over the normal flight range makes long and untiring thermal flights possible. In weak thermals the Hike can be turned flat and slow using weight steering and a

touch of outside brake; even in the lightest lift. The Hike has a safe feel to it in turbulence. An active flying style should make unforeseen collapses very rare occurrences. The high canopy stability means that provoked collapses need a mighty tug. The reaction is moderate, the wing diving forward only a little, and opening within a maximum of 180°, unspectacularly and after a moderate rate of turn. Front collapses are similarly nothing to write home about. The wing pitches back slightly, then re-opens quickly and evenly from the middle out. A light pitch forward indicates the return to normal flight.

## Descent aids

### Big ears

“Old school” big ears technique: the Alpha 4 Hike does not have split A-risers. The outer A-lines are defined by colour. These can be easily reached well above the quick-links and the wingtips cleanly folded. Once they fold the initial resistance reduces markedly, and big ears can be held for a long time. When released they open quickly by themselves.

### B-Stall:

The thin risers and slender quick-links make this a bit difficult to do. It’s recommended that you take the B-risers in a stranglehold above the quick-links. There’s a lot of resistance to overcome to get the B-stall going, but once in the stall it’s considerably less strenuous. The Alpha 4 Hike descends quietly, without twisting or turning. After release the wing pitches slightly forward then flies away cleanly and straight.

### Spiral dive:

Child’s play: the Alpha 4 Hike’s agile nature is clear to see here. A confidently increasing pull on the brake combined with a little weight shift at the beginning, and very little more persuasion is needed. Very soon the speed and angle of bank are happily on their way. Outside brake easily controls the angle of bank and sink speed at all times. From a medium vertical speed of 10 to 12 m/s recovery presents no problem.

## Summary

A very coordinated and balanced lightweight glider. The good handling and simple takeoff behaviour spares the para-alpinist a lot of stress and nail-biting, especially on those tricky takeoff spots. Because the Advance Alpha 4 Hike has the same insides as it’s heavier brother, and was *only*

weight-watched with lighter fabric for the wing surfaces, the lifespan compared with a standard glider should not be significantly reduced. Compared with a normal Alpha 4 our glide ratio test flights actually revealed a 0,4 point improvement in glide ratio at trim speed (Alpha Hike 25 v Alpha 4/28).

This attractive level of performance, paired with a high degree of passive safety, will not only appeal to mountain climbers.

<b>Measurements</b>	
Glider weight (kg)	4.1/4.3 (23/25)
Height (m above sea level)	1,000
Trim speed	38 kph
Max speed with speed bar	50 kph
Test pilot's takeoff weight	83 kg
Wing loading	3.24 kg/m <sup>2</sup> (25)

### **Test conditions**

**Takeoff weight range (65-105kg)**

**Test pilot takeoff weight 83kg**

**Test pilot's harness:** Advance Progress

**Measuring instrument:** Bräuniger Competino

**Speedbar travel:** 42cm (travel to full accelerate)

**Brake loading diagram** Brake loads and glide ratio figures not completed because of weather conditions. Will be available in next issue!

**Glide ratio:** 8.2, measured by 2x Aircolec XC-trainer

**Comparison harness:** Airwave Ram Race (without the speed tail)

<b>Assessment</b>	
<b>Materials</b> * * * * *	27 gm/m <sup>2</sup> lightweight fabric on underside and part of upper wing surfaces, uncovered lines, many useful features.
<b>Workmanship</b> * * * * *	Typical Advance high quality work, very neat sewing, well-made uncovered lines.
<b>Forward takeoff</b> * * * * *	Only light impulse needed, rises under moderate pressure smoothly and evenly above the pilot, corrections hardly required.
<b>Reverse takeoff</b> * * * * *	Rises smoothly and cleanly after a brief impulse, also in little wind; easy to hold over the pilot, no overshooting, plenty of time to turn round.
<b>Agility</b> * * * *	Outstanding for its classification, especially at the higher wing loadings
<b>Steering behaviour</b> * * * *	Very nice direct handling. Steering demands answered smoothly without delay. Brake loads comfortable in the normal range, rising markedly up to the stall limit.
<b>Collapses</b> * * * * *	Side collapse: typical for class – no problem, no troubling diving forwards, manageable slow turn. Front collapse: opens softly by itself from the middle out, light pitch forward into normal flight.
<b>Speed system</b> * * * *	Easy to push and hold. Very stable in full accelerated flight.
<b>Big ears</b> * * * *	No split A-risers, entry and holding in easy however; outer A-lines coloured as all the uncovered lines look the same.
<b>B-Stall</b> * * *	Narrow risers make entry a bit tricky. It is necessary to grip the lines well above the quicklinks. Recovery clean and self-completing, light pitch forward to normal flight.
<b>Spiral dive</b> * * * *	Simple entry, speed and bank build cleanly, always well controllable and adjustable with brake. Exit: easy.
<b>Technical specialities</b>	Light construction, Raff system for brakes on the trailing edge, velcro cleaning slots, swivels on the brake handles to release brake line twisting.
<b>Suitability</b>	Mainly mountain pilots and travellers, but also beginners, leisure and thermal pilots up to XC beginners

## Technical data (provided by the manufacturer)

MANUFACTURER

DESIGNER

TEST PILOTS

SIZES

NUMBER OF CELLS

TAKEOFF WEIGHT kg

AREA FLAT m<sup>2</sup>

AREA PROJECTED m<sup>2</sup>

SPAN FLAT m

SPAN PROJECTED m

MAX CHORD m

CANOPY WEIGHT kg

LINE LENGTH TOTAL m

TRIM SPEED kph

MAX SPEED kph

PRICE €

PRICE SFR

LTF CERTIFICATION

EN CERTIFICATION

UPPER/LOWER SURFACES

GALLERY LINES

Edelrid PE lines (Dyneema, polyethylene core with Polyester cover.

BASE LINES

Edelrid HMA lines (Kevlar) Aramid core with polyester cover.

GLIDER SUPPLIED WITH

Inner bag, speed system, promotion goodie bag (cap, mini windsock, keyring, DVD . . . ).