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WORLDWIDE PARAGLIDING AND PARAMOTORING MAGAZINE. FOR FREE.



# #autumn

Photo: Jérôme Maupoint / GIN



**A Gin Fuse 3 over the fogs.**  
**Photographer: Jérôme Maupoint/GIN**

Translations: Ruth Jessop

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## INNOVATION

Several times previously at the Coupe Icare, we have been presented with technological innovations, in particular aimed at improving paragliding safety.

Over ten years ago, Paul Pujol showed his BTS system, intended to warn the pilot who was undergoing micro losses of consciousness, often subtle and yet causing accidents.

Norbert Barboux had presented an emergency parachute, in a ventral container attached to the student in SIV, which could be controlled via the remote control by the instructor. But it seemed heavy. In the end, these systems fell by the wayside.

At the Coupe Icare 2022, a new innovative system was displayed going even further. The "Rescue Ejector" is a system containing an airbag, which is effortlessly triggered by the pilot, and it expels the pod containing the parachute at a speed of 10m /s.

In a 10th of a second, the lines are taut. It was good that an invention like this was launched in a year of heatwaves and turbulent air. For example, the DHV, was concerned this summer about the resurgence of accidents where the classic rescue had indeed been triggered, but had not been deployed, apparently because of a lack of expulsion energy.

All the labs (Air Turquoise, DHV, FFVL) have shown interest in this innovation and have tested the Rescue Ejector in the air and on the G-Force-Trainer.

We'll see what comes of this system in the long run after its 'fanfare' announcement at the Coupe Icare. Weighing just 300g and being compatible with almost all harnesses, there's potential...

<https://www.rescueejector.com/>

Sascha Burkhardt,  
founder voler.info free.aero magazines





# LOVE WHAT YOU DO

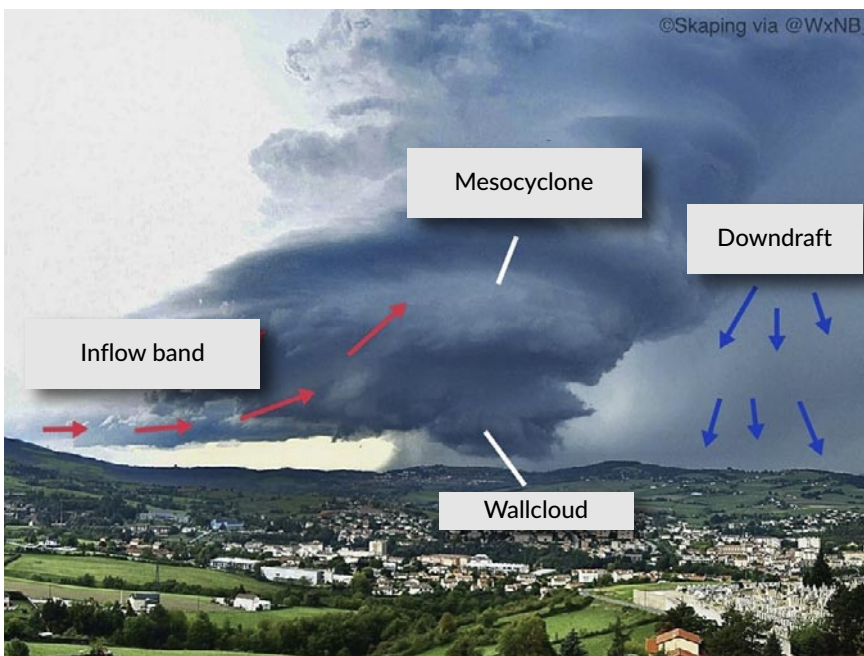
4 year old Violette loves to play  
No one told her the rules  
She doesn't know what's impossible  
She hasn't learned to feel afraid  
She instinctively knows only one thing...  
Freedom shows her the way

At NEO, we've chosen to make 100% of our  
products in our own workshop on the shores  
of Lake Annecy, in France.





## THE FACES OF A STORM...



The summer of 2022 has also been a stormy summer. Here is a nice example of a supercell storm in France. Its structure was so well developed that it was a "textbook case": Ahead of the storm, this band of cloud, called the "inflow band," is the hot, humid air supply that allows the storm to feed. In this part, it is very common to feel a hot wind heading towards the storm.

The rotating column corresponds to the mesocyclone. It is in this part of the storm that the updrafts are the strongest. At the base of this, a wall of cloud develops, which is nothing other than an appendage to the cloud. This is where the warm, moist air is sucked into the cloud. So, a nice entrance into the lift for careless pilots within range of the monster.

At the back of the storm, there is the downdraft from precipitation (hail/rain). This type of storm can have increased longevity due to wind shear (directional and by velocity) which helps separate the updraft from the downdraft of the storm. It is therefore continuously fed...



Thanks to the Météo42 service for these explanations! ([www.facebook.com/profile.php?id=100028941986845](https://www.facebook.com/profile.php?id=100028941986845))



**MAESTRO 2 light**  
High B





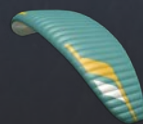
EN/LTF A

# KODE P

**YOUR MOUNTAIN PARTNER**

The Kode P is an accessible and lightweight mountain wing that will accompany you on your hike & fly adventures.

— SIZES 16 18 20 22 24 26 —



ACID



SPICY





## FUNGIR GOWIND

### Connected Viewer

For clubs, techie pilots or geeks making a choice, our colleague Philippe Lami tested a very nice, useful viewer.

This super little object, connected by wifi (2.4 GHz only) to your favourite weather station, provides an instant display from a nearby weather-station (with the multi-spot option, €10 for life, switching between up to 3 stations) on the small screen. The object is pretty, high-tech, and will be a delight for those of us who are addicted to wind and flying conditions. Developed by three Bretons, lovers of kites, wing foils and other nautical activities, this gem sits easily on a desk, at a paragliding school reception, and provides information in real time.

Updated via a mobile app (you can choose from 6000 weather-stations worldwide, including FFVL and Pioupiou). 🕒

[www.gowind.fr](http://www.gowind.fr).

Price: 79 or 99 euros depending on the version (stainless steel/wood).

Free multi-spot option for our readers: use cod 2023FREEAERO (valid until 31.12.2023)







# OZONE

## RESEARCH & DEVELOPMENT

The Ozone Performance Project is a commitment to invest heavily in R&D by putting product first. We strive to make innovative wings and harnesses with class leading performance and fun.

By learning from the development of harnesses like the Submarine, and wings like the Zeno and Enzo series, we are able to apply competition-proven concepts to our entire range. The aerodynamic principles, construction techniques, and materials used in these winning designs are incorporated into every wing and harness that we create. The Submarine harness was flown by Ozone R&D team members Russell Ogden (**current FAI World Champion**), Honorin Hamard (**World N°1 in WPRS rankings**), Luc Armant (**PWC Superfinal Champion**) and its technological advances are being applied to our entire harness range.

After over 20 years, our commitment and dedication is only stronger and our team is only more experienced. **Thank you for joining us, we look forward to many more years of flying with you.**



## #GEAR 2022 2/2, TRENDS 2023

All the new products from the Coupe Icare 2022 will be in the next edition...

As announced in our last issue, this year has been extremely prolific in terms of equipment and innovations.

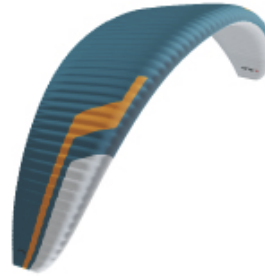
All the new products that had remained under wraps, due to COVID and the lack of raw materials, were visible or launched at the Coupe Icare.

Niviuk, for example, is launching the Artik Race: a two-line EN C from the Catalan manufacturer! You could also examine and order the Arrow and Hawk harnesses (see our last issue), the Hook 6/6P and the Koyot 5/5P. The Peak 6 is proving to be very dynamic at Niviuk.

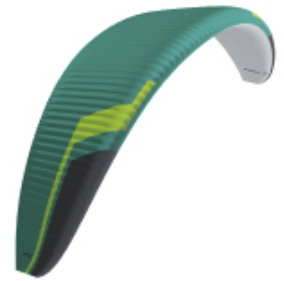
Ozone has on display, amongst other things, their amazing "submarine" harness as well as the SwiftSix, and Supair the De-light 4...

In the meantime, you can reread our last issue which contained reports about many prototypes which are now visible in their finished version. 🙌

COMING SOON  
2023



ARTIK RACE



PEAK 6







**COUPE ICARE SAINT HILAIRE 2022 : EVERYTHING YOU NEED TO KNOW ABOUT IT WILL BE IN THE NEXT ISSUE.**  
It was a great success, both in terms of the fair and the flights, despite the mixed weather... Photos: Alain Doucé/ Coupe Icare 2022





# SWIFT SIX

The **SwiftSix** delivers the highest glide and XC performance in its class. **900 grams lighter** than the RushSix, it retains all of the class leading XC performance with even better handling and agility thanks to reduced sail inertia. The SwiftSix shares performance development features with the Enzo and Zeno series wings, and **cutting edge lightweight construction techniques** derived from the Zeolite series of wings.

- Active Control Riser system (ACR) from Delta series
- Improved min sink and climb characteristics
- Incredibly stable in turbulence and active air
- Absolutely top of class glide performance
- Developed directly from Alpina series
- Hybrid 3/2 line layout



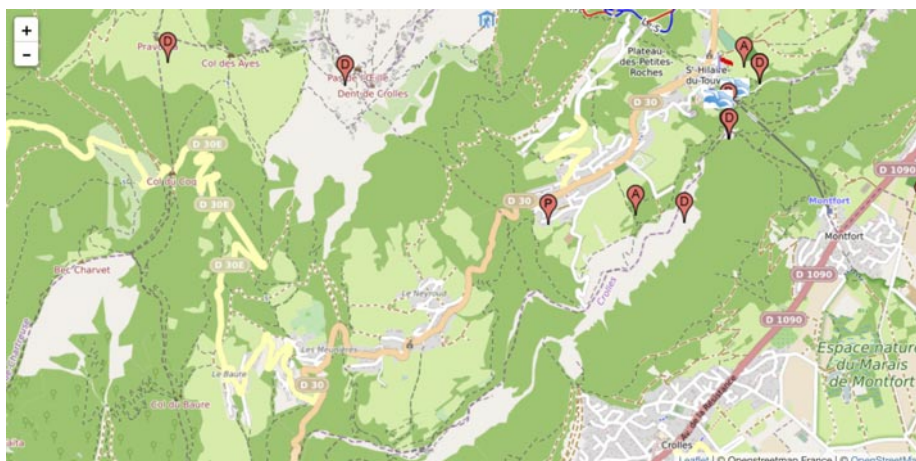




Photo : Alain Douc

## BENEATH YOUR FEET AND WINGS: DENT DE CROLLES

This year, the Coupe Icare took place as it should. For visitors, it was a good idea to think about doing the famous Dent de Crolles hike and fly, with take-off at an altitude of 1,987 metres, above Saint-Hilaire-du-Touvet.



The quickest access (1h30, 600m hike up) is from the Col du Coq. From Saint Hilaire, take the road up to Col du Coq and park in the car park located below the pass. Then follow the yellow waymarked path. At the Col des Ayes, continue on the east side, then go through the Pas de L'Oeille to reach the summit.

From Saint Hilaire, there is a much longer path (1100m hike up) and often with more technical sections (slippery, rocks, clouds). You have to park at the ancient place of the Rocheplane medical centre. Follow the yellow waymarked path towards La Cabane du Berger, then, from Pas des Terreaux onwards, follow the path north. Before the meadow, take the red waymarked path which joins the classic route (Pas de L'Oeille, summit).

On the FFVL website:

[https://intranet.ffvl.fr/sites\\_pratique/voir/1250](https://intranet.ffvl.fr/sites_pratique/voir/1250)



Photo : Alain Douc



The two paths that we have suggested include sections that are a little bit exposed and equipped with chains and cables, but even with a large backpack, they are easy to do.





The north take-off: here, the pilots take off towards the north, then turn right towards the east, thus passing over the cliff where they will then find themselves above a beautiful void, then see Saint Hilaire beneath their feet.

If the north wind is blowing at more than around 15 km/h, this take-off becomes a little turbulent, as it becomes screened from the wind.

There is also a south take-off.



ARTIK 6



EN/LTF C

# ARTIK 6

**WELCOME TO THE REVOLUTION**

The Artik 6 hails the dawn of a new era of XC flying where countless possible routes are waiting for you. A fusion of outstanding performance and accessibility to sate your hunger for kilometres.

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## *2.5 B HYBRIDS: THREE LINES AND TWO LINES IN THE SAME WING.*

*Some new high-B paragliders have three lines in the middle, but the outer wing is designed with two lines. Does this type of construction represent the future in this category?*

**The Nova Mentor 7 light is a hybrid.  
Photo: Nova**





**S**ome new high-B paragliders have three lines in the middle, but the outer wing is designed with two lines. Does this type of construction represent the future in this category? This summer, the Ozone Rush 6, Nova Mentor 7 light and Flow Freedom 2 were the most modern examples in the race for performance in the high-B category. They have one thing in common: instead of their three lines (A/B/C) in the middle, at the tips they only have only two (A/B). The outer wing is therefore like that of a two-liner, whilst the centre of the canopy has a line set like that of a classic three-liner.

Different names for this new design are circulating: "hybrid 3/2" or even "2.5-liner". The idea of giving up a line rank in the outer part of the wing came relatively early. For example, Felipe Rezende from the Australian brand, Flow Paragliders. About four years ago, whilst flying a three-line prototype of an EN-C wing, he noticed that the C-lines at the wing tip carried almost no load. What would happen if he just deleted them? Very quickly, he tested this configuration on a new prototype and was won over by the improvement in performance. In 2019, the Fusion was the first 2.5 wing to be launched on the market.

In the meantime, it turned out that this configuration also works for wings with a slightly lower aspect ratio, between 5.5 and 6.0, as is the case in the domain of high B. The three-line section in the middle of the wing continues to provide good support for the rear of the wing.

The wing's reactions are therefore always in accordance with EN-B standards, even after large, accelerated collapse. The arrangement of the two lines at the wing tips should, however, improve performance and handling, especially in accelerated flight. There are several reasons for this.

### 1) LESS LINE DRAG

An obvious reason: the reduction in the number of the lines. By removing the C lines in the outer part of the wing, this gives an economy of about ten percent in the lines which, with their drag, reduce the glide performance of the wing.

This is especially noticeable at high speeds. The drag is proportional in effect to the square of the speed. A 2.5 line wing should therefore present a slightly flatter polar curve in accelerated flight compared to a 3 line wing of identical construction.

The Flow Freedom 2: 2,5 lines...





**2) GREATER PROFILE FIDELITY**

The second reason is more complex. It is linked to the modification of the angle of attack of the wing along its wingspan. When the pilot pushes down on the accelerator, the A lines are typically pulled all the way down, and the Bs a little less. This reduces the angle of attack of the profile.

However, paragliders are arched and become thinner towards the stabilo. The modification in the angle of attack is therefore not the same everywhere.

In the outer part of the wing, where the A, B and C lines are much closer together, the effect of the action on the accelerator is proportionally greater. In addition, the profile deforms much more there. It therefore no longer corresponds to the ideal.

When tuning a paraglider, designers therefore always have to make compromises, which are greatest nearer the stabilo of a three-line wing. If there are only A and B lines left in this area, everything becomes a bit simpler and cleaner aerodynamically. With only two pivot points, the shape of the profile is maintained when accelerated. The profile pivots around an attachment point without deforming. This can result in

better wing stability at the tips, which in turn, can be converted into a higher top speed. This also represents an improvement in performance.

**3) EASIER CONTROL VIA THE C LINES**

A third argument in favour of hybrids: the 2.5 lines allow lighter and more aerodynamically efficient piloting via the rear risers (giving the feeling of a two-liner).

Almost all modern high-B wings now have handles on the C risers to make angle of attack corrections in accelerated flight. The C risers are linked to the B risers in order to pull them down in a proportionally reduced way.

This "C-B" control, nevertheless, causes problems on the classic three liners. In fact, pulling the C risers not only changes the angle of incidence (as on a classic two-liner), but also distorts the profile a bit - despite the coupling with the B lines. This happens the most at the wing tips. This is the same problem as the one described above concerning the profile deforming when accelerated.

In the case of a wing tip with a line configuration like a two-line wing, the deformation largely disappears in this part of the

Nova Mentor 7 light







Ozone Rush 6  
Photo: Óscar Lagarrotxa/Ozone

wing when piloting using the C. In turbulent air masses, the aerodynamic quality of the profile is less affected by pilot input. This is therefore also an advantage when it comes to performance.

Added to this is the fact that piloting using the C-B risers typically requires a little less physical strength on 2.5 wings. The energy used to deform the profile doesn't have to be supplied.

**DISADVANTAGES**

Of course, 2.5 liners also have their disadvantages. Perhaps the most significant of these is that, with only two rows of lines at the wing tips, and spaced further apart, more effort has to be put into the design to ensure the mechanical stability of the profile. The wings must therefore be typically supported by long rods which extend over almost the entire chord of the profile. This translates into more bulk and generally requires a special method for folding; for example, to protect the rods from being bent too much, an inflatable folding pillow may now be required.

**DIFFERENT VARIATIONS**

The line plans for the three current 2.5 liners in the high-B sector, show that not all the 2.5 liners are identical. In fact, the line configuration at the wing tip is slightly different in each one. This influences the piloting characteristics using the C.

On the Ozone Rush 6, for example, the B-line at the wing tip is also attached to the C riser. Pulling on the C riser has a direct effect on the angle of attack of the wing tip. This also makes it easy to correct the direction using the C lines.

On the Flow Freedom 2, the B lines on the wing tips are connected to the B riser, which is only connected to the C riser via a reduction link. To obtain as much travel on the wing tip as on the Rush 6, you therefore need to pull a lot further. Control of the direction is limited.

Nova's Mentor 7 light is even more extreme in this respect. The B lines at the wing tips are attached on an additional strap between the A and B straps. Thus,

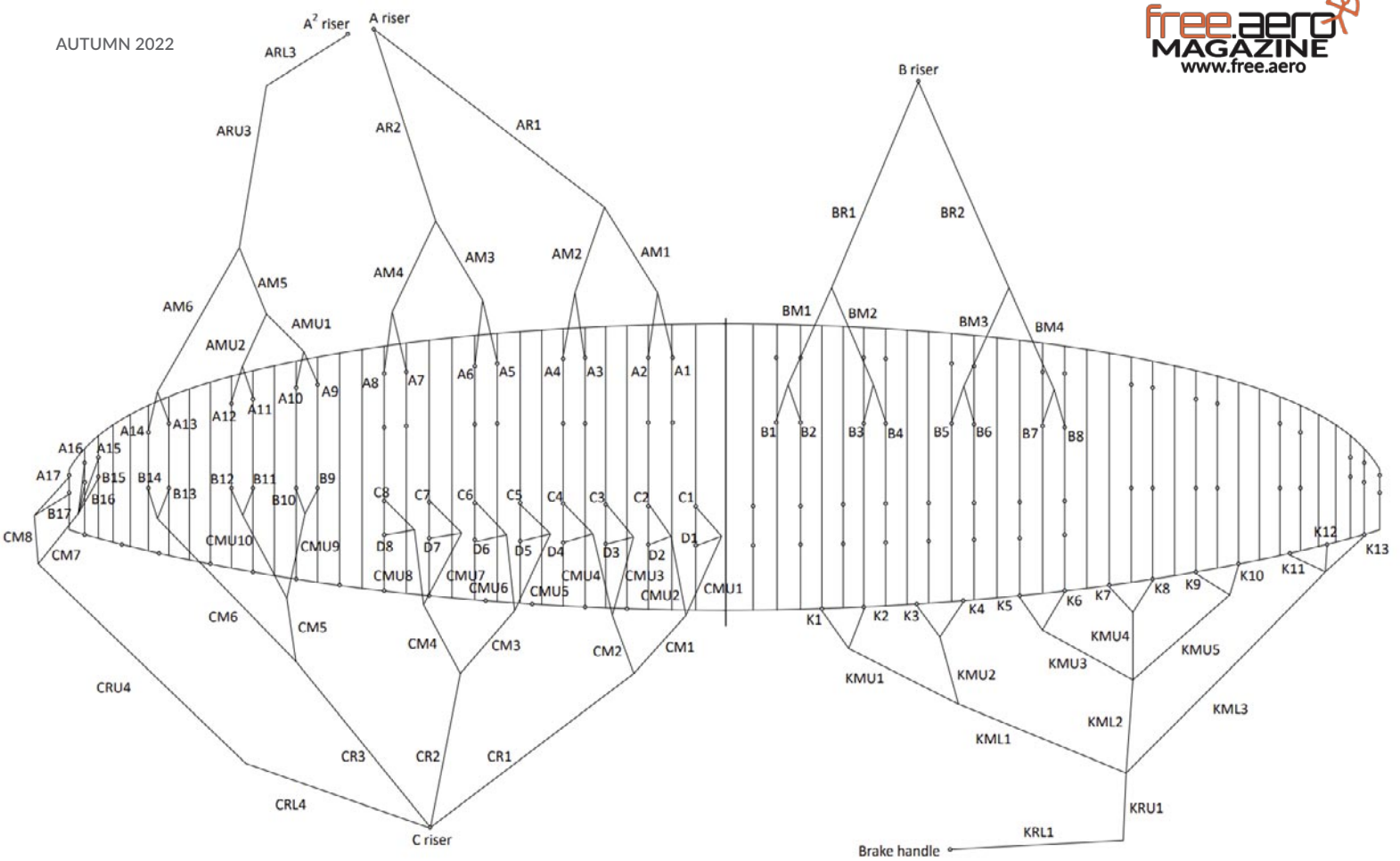
Nova Mentor 7 light : The B lines at the wing tips are attached on an additional strap between the A and B straps





Nova Mentor 7 light:  
The piloting is even weaker when pulling on  
the C risers.





the piloting is even weaker when pulling on the C risers. In the case of the Cs, the angle of attack is almost exclusively controlled on the centre of the wing, in order to keep it stable. Nova designer, Philip Medicus, recognizes that this variation is hardly suitable for controlling the direction. However, the advantage of this configuration is that the Mentor 7 light is probably the least physical to handle through the Cs out of any current high-B wing.

**THERMAL FLYING USING THE C?**

Which of the three variants is the best? That depends on the pilot's preferences and techniques of piloting.

With a Rush 6, for example, the pilot should have a more direct feeling for the behaviour from the wing tips, and therefore better possibilities for intervening. It should even be possible to change to piloting with the Cs when thermal flying.

When coring a thermal, the wing tip on the Rush 6 can be controlled efficiently not only by the outer brake, but also by using the C.

On a Mentor 7 light, on the other hand, this method of flying is not possible due to the line configuration. The Cs are limited to controlling the angle of attack of the centre of the wing in accelerated flight.

**THE FUTURE**

It remains to be seen whether the 2.5 line concept will prevail in the high B sector? Looking at the potential gain in performance alone, the odds are good. In a few years' time, this type of construction could become the new standard and perhaps even the criterion that defines the top of the range, thus becoming a marketing necessity.


It is also possible that the true three liners will keep their place in the high-B domain, next to the 2.5 liners.

Phi, for example, has just launched the new Maestro 2. And this is a three liner, even though the brand also tested prototypes with a 2.5 line plan during development. According to designer Hannes Papesh, the wing with the 2.5 line configuration had no clear performance advan-

On the Ozone Rush 6, the B-line at the wing tip is also attached to the C riser. Pulling on the C riser has a direct effect on the angle of attack of the wing tip. This also makes it easy to correct the direction using the C lines.





tages. The three-line variant ultimately convinced the test pilots as it had a more "compact" feeling in flight, because the central part of the wing and the wing tips worked together more harmoniously. In the end, it's not just the performance argument that counts... 

This article was provided by Lucian Haas on the blog [lu-glidz.de](https://lu-glidz.blogspot.com/)  
<https://lu-glidz.blogspot.com/>.

Lucian is a freelance journalist with a strong scientific orientation. His concise analyses of the paragliding market, flying techniques and the weather, always provide a wealth of interesting knowledge.

The Maestro 2 light from Phi: Hannes Papesh had done some tests with a hybrid system and decided to stay with a classic three-line system: The three-line variant ultimately convinced the test pilots as it had a more "compact" feeling in flight







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# HOLLAND AND DENMARK BY PARAMOTOR

*Here, Karen Skinner and Jason Whitehead prove once again that a paramotor is a fabulous tool to explore wonderful landscapes, in total freedom, at all altitudes...*







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# TECHNOLOGY FOR ALL PILOTS

**CROSSOVER**  
by ADVENTURE



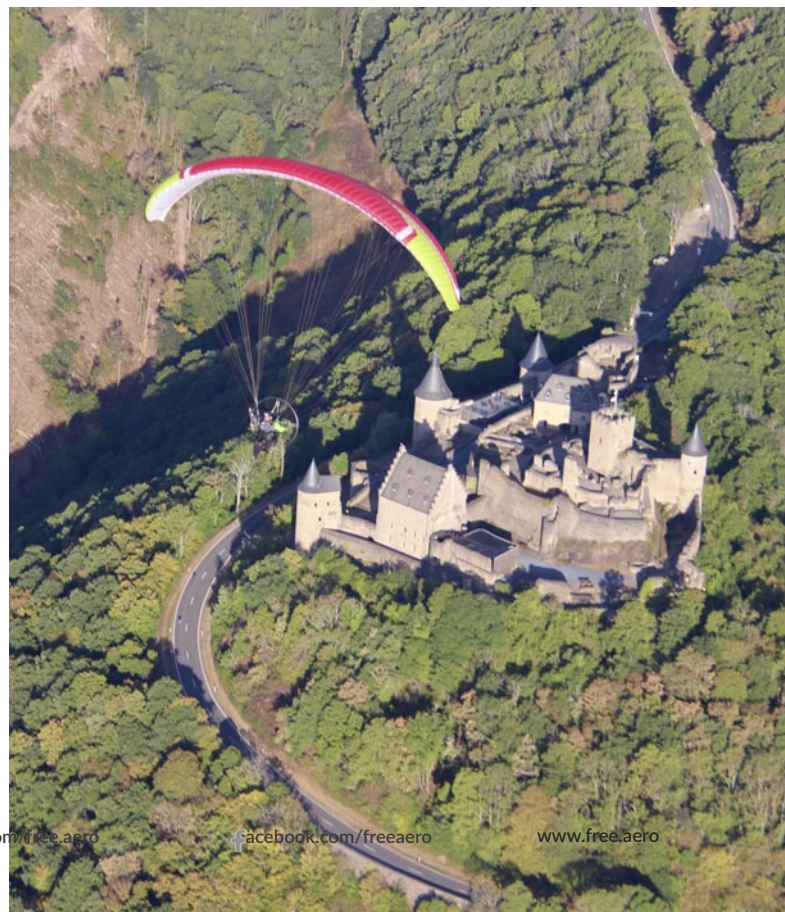
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[www.myexo.fr](http://www.myexo.fr)

Karen Skinner explores landscapes very close to home: Luxembourg.







## TEST: NIVIUK KLIMBER 2P

*Our test pilot Philippe Lami summarizes his findings and experiences after several months of flying size 21 of the Niviuk Klimber 2P (all-up weight from 75 to 93 kg).*

**O**n foot and especially in flight, I put the very light Niviuk Klimber 2P, an EN D wing designed for the X-Alps and hike and fly mountain adventures, through a tough test. It is a real 2 liner derived from the Peak 5 and the X-One. This Klimber 2 P is a jewel when it comes to lightness (2.78 kg in size 21) and from a technical point of view (6.95 flat aspect ratio with 64 cells and 199 meters of line). As a comparison, I flew the Advance Omega XAlps3 and the Ozone Zeolite, but the Klimber is the lightest in its category, thanks to the use of

even lighter fabrics such as Dokdo 25, and even lighter and thinner Nitinol rods. When folded, its compactness is equally impressive. Using the compress bag allows the air to be expelled to the point of almost being vacuum packed. Nicely done!

### INFLATION AND TAKE OFF

I have never had a wing of this aspect ratio that allows such an easy inflation. Place it roughly in the correct shape on the ground, just take the two central lines, a pull, and the wing builds itself quite docilely, quickly and without requiring any force.





**KORTEL  
DESIGN**

info@korteldesign.com



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www.korteldesign.com

**Kruyer III**

Pretty stunning, in all cases. With or without strong wind, for a 2 liner of this aspect ratio, it's child's play and surprisingly simple! Take off in three steps, with very fast load take-up despite the small surface. With the Supair Strike 2 harness, I am loaded up to 88 kg.

#### IN FLIGHT

I got quickly into the harness and set off in search of some bubbles and the nice thermals that we can expect at this time of year. The Klimber 2P surprises me with its flawless pitch behaviour, while offering record roll lucidity: lots of communication, easy to decipher and above all, manoeuvrability that allows very precise piloting, so that you can chisel out the shape of each thermal as if with a knife. Terrifyingly efficient.

In terms of speed, there was certainly nothing to complain about. The accelerator is like "butter", soft underfoot, and it stretches the wing which becomes more rigid and very efficient when piloting from the rear, helped by the rigid bar on the B. In "the fight", the wing which sometimes tucks at the wing tips, warns the pilot of all its intentions, and any collapses worthy of

the name, are extremely rare and above all, very straightforward to correct. As far as descending rapidly is concerned, I have to admit to favouring tight 360° turns, with a progressive exit, so as not to pull too much on the internal structure.

As far as top landing is concerned, the wing offers a parachutal range before the stall, which becomes a real game, a treat of precision, playing with how far back you can let the wing tips go. Wonderful!

#### CONCLUSION

Top performance in this category, but above all, what seduced me more than anything, was its behaviour in every possible type of condition, which often makes me say that this Klimber 2P goes everywhere, with ease and vigour.

I chose it for that reason, for this huge dose of pleasure, performance, comfort and lightness that made me feel as if I had inhaled some laughing gas! I love it, and without exaggerating: I think I have finally found my Holy Grail, the absolute perfect wing to suit my desires and my way of flying. ✈️







OUR TEST PILOT  
**PHILIPPE LAMI**

Philippe has worked with Aerogliss paragliding school for thirty years. He is also one of the most experienced test pilots and specialist paragliding journalists. Another string to his bow is his company Windsriders, who make down jackets optimised for our sport.

More infos:  
[www.niviuk.com/en/klimber-2-p](http://www.niviuk.com/en/klimber-2-p)







## *FOLLOWING THE BUTTERFLIES: 2835 KM ACROSS AMERICA*

*In April 2022, the Guinness World Records awarded Team Ozone pilot, Benjamin Jordan, the title of "the longest unpowered paragliding flight". Inspired by the record-breaking migration of the Monarch butterfly, Jordan traveled 2,835 km: 2,157 km by paraglider, and 678 km by foot, from Mexico to Canada, achieving the first-ever crossing of the United States by a non-motorized aircraft.*





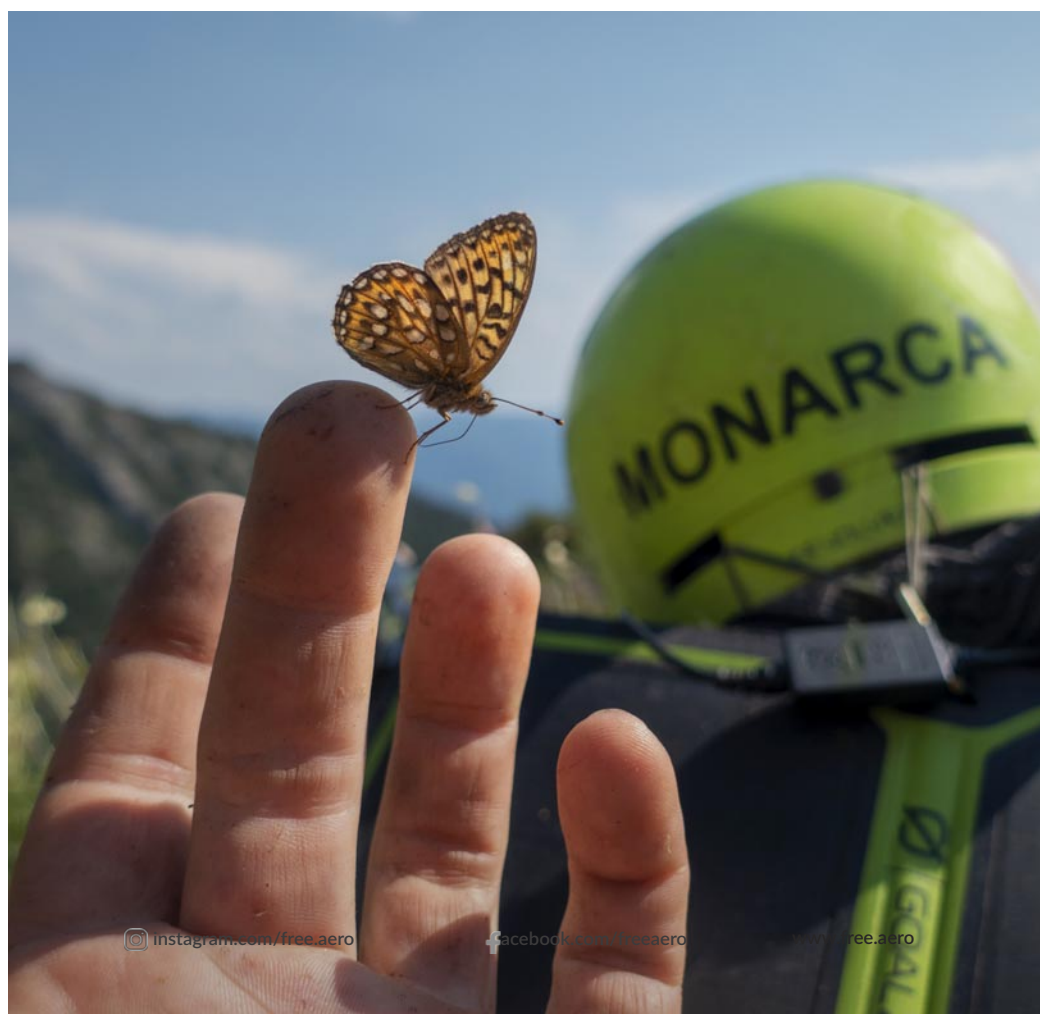
**T**o the south is a 20ft, iron fence; to the north, a dry, imposing mountain. In the middle, a man with a large rucksack. Though heavy, it isn't this that is weighing down on him.

Two months ago, I was dangling from a paraglider above the clear, crisp highlands of Central Mexico.

Clouds rolled in from the coast, and, without the sun's heat, I failed to find lifting air and was forced to land the glider in an alpine meadow, 40 km away from where I'd taken off.

While packing up, I was engulfed in a swarm of insects, but not the kind I wanted to repel. Instead of swatting or spraying, I lay back in the tall grass and opened my mouth in awe.

Above me were millions of monarch butterflies, commuting across the meadow between a small stream and dense forest. The sky became rich with their bright, paper-thin wings, dancing through the void above me. As if having landed on some alien planet, I am lost in this moment of wonder, but for how long, I cannot say.







These monarchs, I learnt, [en.wikipedia.org/wiki/Monarch\\_butterfly](https://en.wikipedia.org/wiki/Monarch_butterfly), were only days away from setting a new world record: the longest migration of any butterfly, over 3000 km, all the way to Canada. Their epic journey north will take them three full generations, but the craziest part is that a fourth generation will fly all the way back - not just to Mexico, but to this very forest. Exactly how, across four generations, the tiny orange pilots manage to navigate so far from - and then back to - an area the size of a playground remains a scientific mystery to this day.

I am the guy standing by the iron fence stretching thousands of kilometres across the desert between Mexico and the United States. I reach out to touch it, then turn to the north, never to look at it again. The dry mountain before me stands 500 m tall. With my paraglider, camping gear, and two weeks' supply of peanut butter, I begin my approach.

My plan is straightforward: clear a launch on top of the mountain, fly north as far as I can and repeat for 3000-km, until I reach Canada. My hope is that by simulating the monarch migration, and their natural form of free flight, I will tap into some wavelength that will open my eyes to their ancient wisdom.



# MAESTRO 2 light

High B





Not so straightforward is the overwhelming fact that a paragliding expedition of this magnitude has never been attempted. Three times further than my longest Canadian route and more than four times that of any of the attempts within the United States, what makes this so challenging is that paragliders require consistent weather to fly cross-country and North America's meteorology is anything but. I check my straps, face my wing, close my eyes and count to three.

With a subtle tug of its lines, my wing pops up with refreshing enthusiasm, a strong thermic cycle lifting my body before even having had a chance to turn around. War drums in my head beat with conviction. There will be no meters lost, no thermal spared.

I'm one with nature and the only difference between myself and the monarch is the peanut butter that has somehow become one with my facial hair.

I spin desperately around a tiny column of rising air. I turn patiently, each centimeter gained, lessening the anxiety brought on by the expansive cactus fields below. I close my eyes, trying to feel the air. My climb accelerates to a heart pounding 10 m/s almost instantly! Quickly reaching 5200m, higher than I've ever been in my life. Cactus or crocodiles, drought or drenched, this is an entirely new kind of flying and any move is now a good move. I'm a freaking astronaut!

I skip along northbound as my luck continues. High above the desert floor, I can see mines, aqueducts, distant mountain ranges and the sprawling city of Tucson is no larger than my boot. With days like this, I'll get to Canada in a week!

Mildly hypoxic, I land somewhere outside of the ruins of Winkelman, a small mining town and the lowest point (600 m) on my route. The desert heat sinks into the ghost





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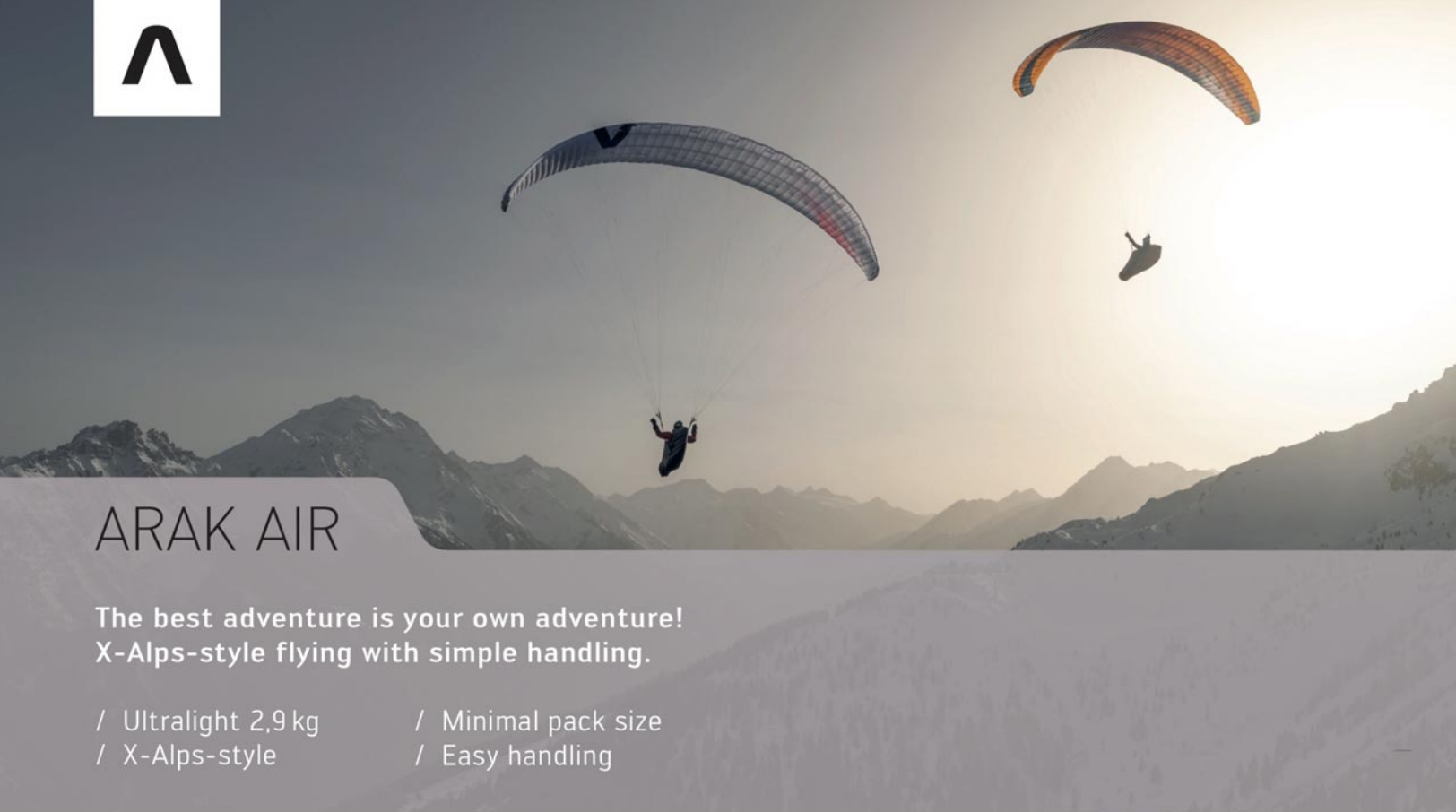
town as if it were the drain for all things bad. Mining trucks and tailings piles dot the landscape and offer a "get the hell out of here" energy that the local flying conditions embody as well.

My improvised launch, a 300 m ridge-top above the town, is a painstakingly cleared dirt-patch amidst a cactus salad. I carry 10 extra liters of water up the hill to avoid dehydration, and then launch from my precarious perch day after day. Unable to find thermals or make any headway north and without the desert flying experience I need to proceed, I'm stuck in a loop.

Delirious, I glance at my watch and realize it's already May 15th. While I've now used up 25% of the flyable season, I've covered just 10% of my route. I search for answers, staring out at the 200 year-old cactus, the dry river beds and tumbleweeds blowing between them. They stare back with indifference, suggesting that the only thing that could ever change out here, is me.

This first step is the hardest. Not because the 60 km of flat pavement north will become painful blisters, but because as a pioneer of fly-camp expeditions, I feel it is up to me to set a high standard that future pi-





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lots and record chasers will be challenged to uphold. And because anyone can walk, regardless of piloting experience, every step north feels as though I'm selling myself short.

After three long days, I arrive east of Phoenix. Despite their imposing spires and name, the Superstition mountains are more like the Canadian Rockies than anything I've seen thus far and instill a familiar confidence. Glider, check, harness, check, cameras hanging from everywhere, check, check, and I'm airborne.

Petty grievances and fragile ego give way to giant red rocks and dagger like grey spires. They shape-shift, moving through the parallax below, reminding me of my great purpose. Desert lakes and cityscape become my focus as the rough air carries me to elevations that play games with my depth perception as I push full speed into the northern unknown.

The sun rises on the 3400 m summit of Monroe Peak, UT. I exit my tent and stretch my arms out with confidence and pride for the bold flights to come. After two months of negotiating short ranges, I

am standing at the south end of a series of expansive, tall mountain ranges, and the birthplace of some of the longest flights in the USA.

Unlike my improvised launches in Arizona, there are actually other pilots on this one and a healthy sense of competition fills the air. Today will be windy, but from the south. Perfect! I wait for the thermal tops to rise and then begin my first, tailwind transition to the north. I leapfrog forward amongst the rough thermals, drifting heavily in the strong southern breeze. Sometimes I find the climb, other times it's a mystery.

Now 40 km north, the features become much lower but with plenty of height, I charge ahead with a new found sense of confidence.

But the now 30 km/h southerly gusts have other plans for me. I revert back north and fly like a banshee, but the low, wind-swept ridges suck me in like a butterfly in a wind tunnel. My ground speed clocking negative 10 km/h, I touch down while flying backwards in a canyon east of the town of Salinas, covering only about 50 km in all.





I toss and turn all night playing out the scenarios in my head. Do I walk north, resigned to the idea that I can't do any better or do I walk back south, and fly from the same peak? Now, just one third of the way into my journey, and still way behind schedule, I rest upon another fence, which though not of iron, stretches across the boundaries of my undecided soul, forcing me to clearly define what kind of person, I am.

Unable to measure the mighty weight of either scenario, I finish my morning coffee and, with some hesitation, begin walking north. After the first 20 km, the inklings of new blisters are a small token of the pain wreaking havoc within. Two days of asphalt pass below me and I gaze up to behold the south end of Utah's mighty Wasatch mountain range.

This next flight north towards Salt Lake City, though I'm only an hour in, has already become one of the most satisfying and rewarding flights of my life. Certain that I've made the right choice in walking north, I bounce between mountain and cloud and can feel that my difficult choice has, like an avalanche, triggered my own, true, human, metamorphosis.

Four more weeks go by in the blink of an eye and though I've only averaged about 50 km per flight, I've flown almost every single day this month and, while choosing to walk on occasions, I'm now three quarters of the way to Canada and have made up for all the time I lost down in Arizona.

Without hesitation, each day I am now able to hike, fly, eat, sleep and repeat. Even cooler, is that today, I feel closer than ever to the monarch I'd hoped to understand.

Once born, the monarch caterpillar must shed its skin four times before it's finally granted wings and becomes a butterfly. When identifying the greatest challenges I've faced on this journey north, the greatest threats to my success have each been conceived by my own ego.

A transparent weight I've shouldered day in and out for most of my life. This heavy, yet fragile cocoon is truly what distances me from my own magnificence. Like a veil, today I have shed this fourth layer and the path before me is crystal clear. ✈️



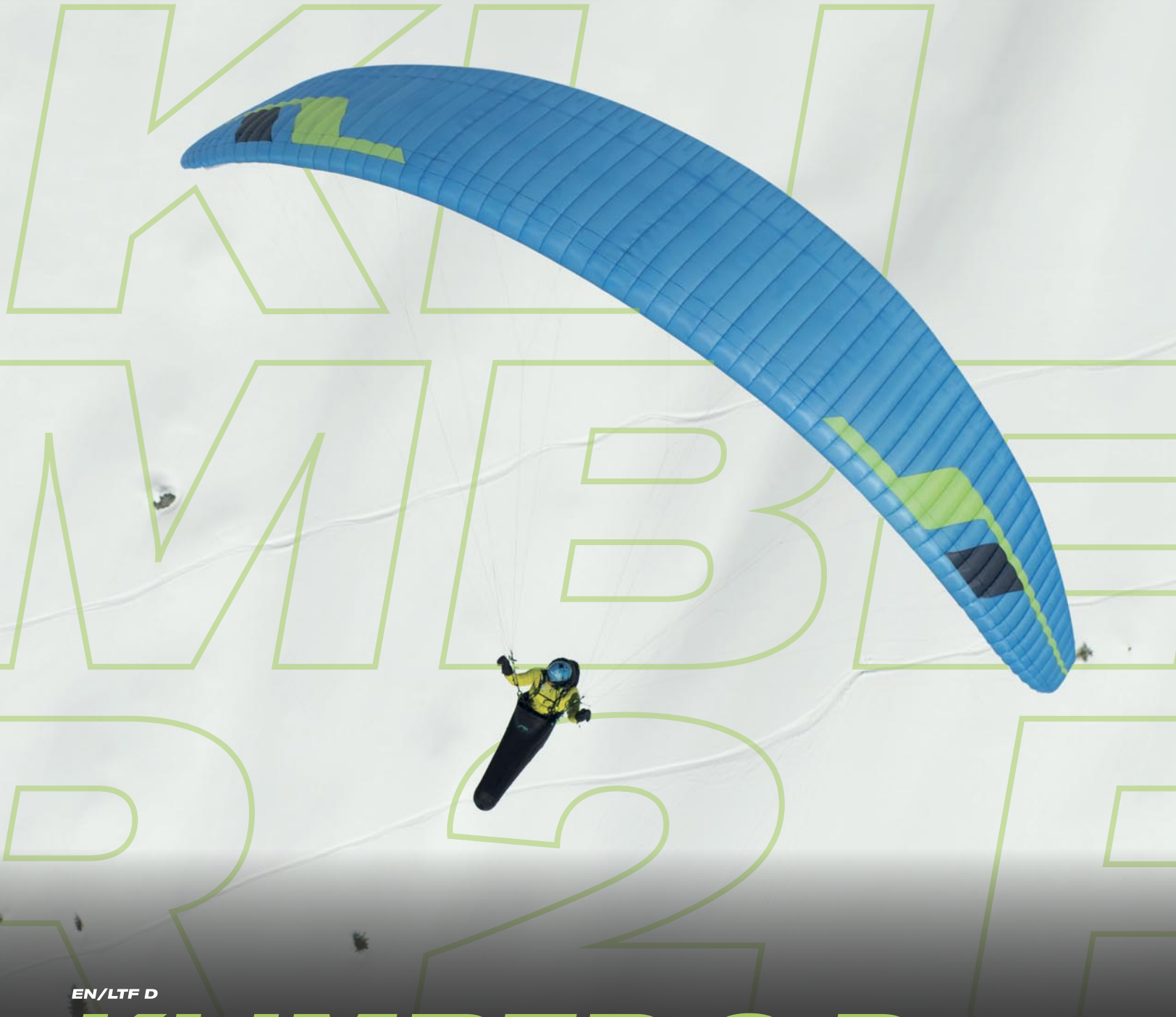


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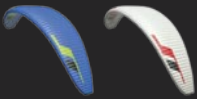
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# KLIMBER 2 P

## COMPETITIVE LEGACY

The second generation of the Klimber P was created to offer a balance between low weight and high performance. A powerful two-liner to go further in hike & fly and cross-country. Naturally competitive, it was designed for the X-Alps.

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## TEST INSTRUMENT SKYTRAXX 4.0

*The Skytraxx 4.0 is the new premium device manufactured in the Black Forest. It represents an evolution of the 2.1 model and it is hoped it will fill the void left by the demise of the 3.0 due to the lack of specific electronic components.*

*By Stefan Ungemach*





**T**he sturdy body of the device, which only weighs 200 g, is housed in a silicone case. It contains a 2.700mAh battery that allows it to easily reach a battery life of 30 hours, despite the colour screen.

As this works transreflectively (it reflects sunlight through the display layer), it is especially readable when the sun is shining. The backlight, which can be activated by tapping, only helps when setting up in darker rooms. The screen is not touch-sensitive, and the resolution is only 640 × 480px in 8 colours which is a drawback for displaying maps.

As with all this manufacturer's variors, it is controlled via four keys that are made from material that can be used with gloves. Entering text is done, as on the 3.0, via an on-screen keyboard, controlled by the tilt sensor. Added to this is the possibility of working with a remote control attached to your shoulder straps.

A worldwide valid eSIM data card is inserted in the device. The OTA (Over The Air via mobile Internet) services related to it are only free for the first year.

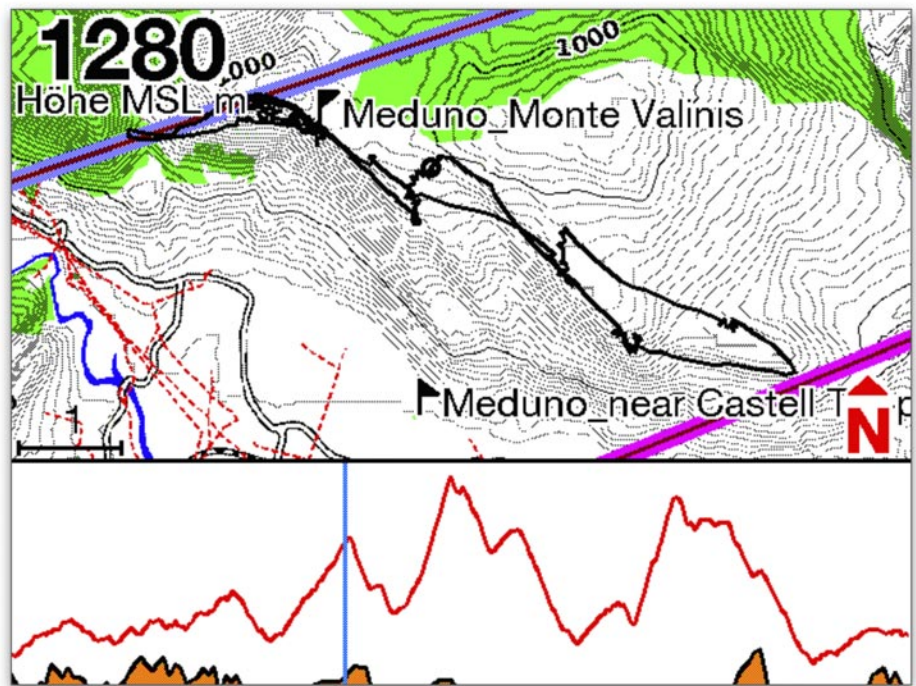




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In addition to updates, the OTA services also include the option to modify the settings, screen pages and tone curves directly in a web browser, from where these settings are transmitted to the vario via the GSM network.

The sensitivity of the vario is impeccable thanks to the use of the inertial system, however the sound seems a little muffled. On the other hand, as on the previous models, there is an editor of tone curves on-line: several tone profiles are possible.

As soon as GPS reception is available, the barometric altitude is set to the coordinates contained in the topographic database of the device, otherwise a calibration from the GPS altitude is carried out. The state of the device indicates the method finally chosen.

In flight, speed updates only take place approximately once per second. The GPS chipset supports GLONASS, Galileo and Beidou. The FLARM beacon only works in Europe. The FLARM/FANET antenna is rigid, but thanks to its slightly conical shape, it hardly ever gets caught in the lines.

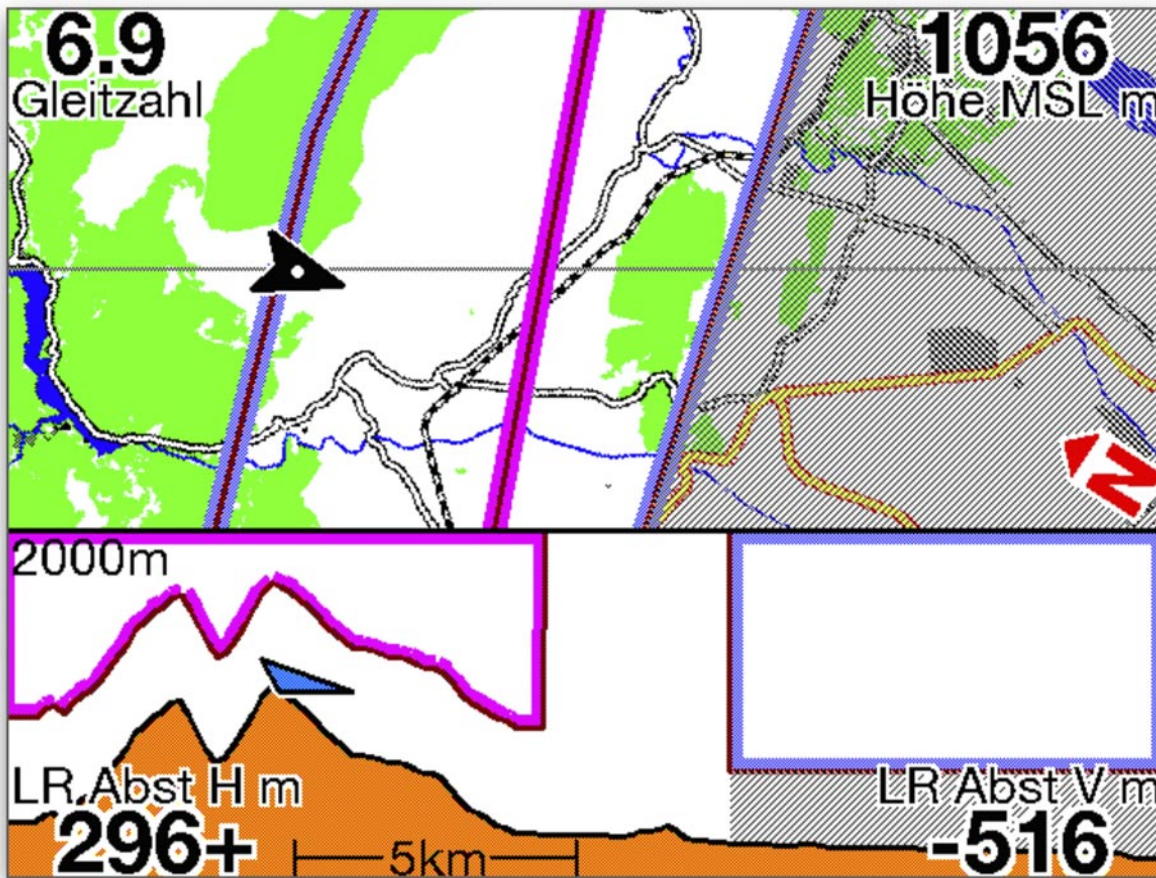
The proprietary operating system offers a whole series of innovative elements, for example: the thermal assistant which determines the core, or help to efficiently escape from airspace, or even the optimized representation of FANET with the display of messages from other Skytraxx FANET pilots.

It is possible to define and configure an unlimited number of display pages. The Skytraxx server provides maps for almost all the regions in the world. The maps are based on the XCM format, also used by XCSoar.

However, the 8-color display limits the visibility of shadows and anything transparent. The shape of the terrain is only recognizable by contour lines and surface vegetation, and KK7 thermal layers obscure the map. FAI sectors, obstacles and even airspace is too pixelated. The representation of the terrain can only be completely switched on or off, which limits the choice to an overloaded line drawing or a white field completely devoid of orientation elements; in the mountains, both are unsuitable.







Skytraxx displays weather data on maps in a practical fashion: coloured arrows indicate wind direction and approximate wind strength. There are also KK7 thermal layers; how useful they are depends on the season.

Airspaces are coloured by their classification. If they reach the ground, they are completely filled in. There is also a specific airspace page to highlight the details of all nearby airspaces, as well as the intuitive side view, typical of the Skytraxx brand.

In addition to the typical proximity alert, the device informs the pilot not just about the shortest way to exit the airspace, but also about the best route to circumvent it. Airspace data is automatically updated, as is the free global obstacle database (warning sounds and notifications on the map).

In the navigation menu, waypoints can be sorted and selected by distance or by name. It is possible to create them on the map. The device contains a comprehensive database of take-offs and landings around the world.

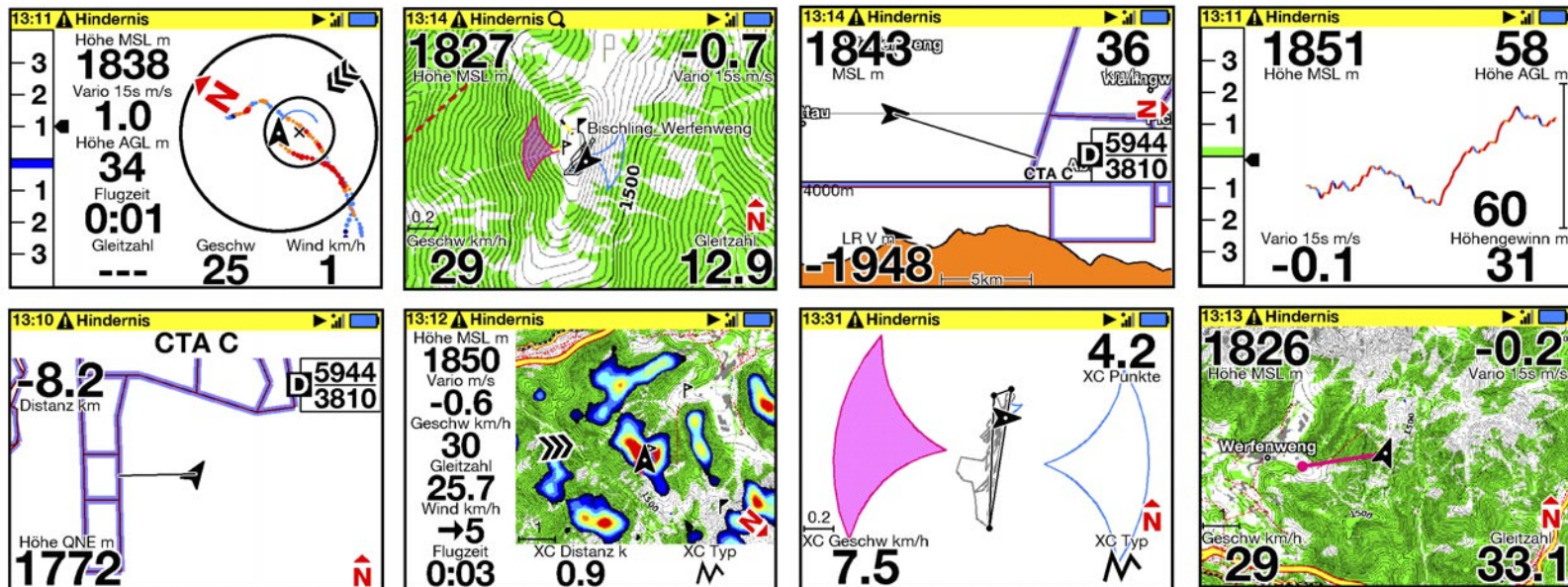
Routes can be entered directly. For competitions, it is necessary to copy a GPX file by cable. Connection to the servers via GSM is planned. The starting window, the optimization of the tasks using the edges of the cylinder, as well as the usual information for the competition, are available.

Route planning is particularly easy if you have a BurnAir-Premium subscription: all the computer-based preparation is immediately available on the Skytraxx, as are some pre-configured standard routes.

The waypoint names contain the altitude needed to cross the valley. It is also possible to manually copy routes from FlyXC.app or ThermiXC via USB (OTG - Over The Ground).

The FAI assistant works very well and displays correct sector suggestions live. There is no display of places reachable on a glide as on the Skytraxx 3.0.





The FANET+ system not only ensures visibility under FLARM, but it also networks compatible devices and ground stations (see our previous articles on this subject). The representation is well designed with large symbols and colour coding for the ascent/descent of "buddies" (other pilots with FANET) on the map. Above all, this device is the only one that offers direct messaging functionality with other Skytraxx users. The representation of the wind from the ground stations, received by the antenna, is practical.

To transfer flights to servers such as XContest or XCGlobe, just select them in the flight log. GSM OTA services are a convenient way of transferring the flight as soon as you land.

A BurnAir-Premium subscription is optional. This offers even more (e.g. high-resolution REGTHERM thermal forecasts of 289 regions, cross country planning with altitudes necessary for transitions, hike & fly planning, valley wind systems in many regions, live weather data...)

### CONCLUSION

Light, flat, robust and durable, offering all useful functions: the Skytraxx 4.0 really does deliver. In principle, it's a big brother to the 2.1 with a colour screen, a SIM card and an accelerometer – and it's hardly related to the discontinued 3.0. The screen has flaws: not readable from all angles, low refresh rate, poor map display. The subscription fees, which have to be paid to get all the functions, damage the overall general impression. However, this compact flight computer is still one of the best of its kind with a price tag of 959 €.



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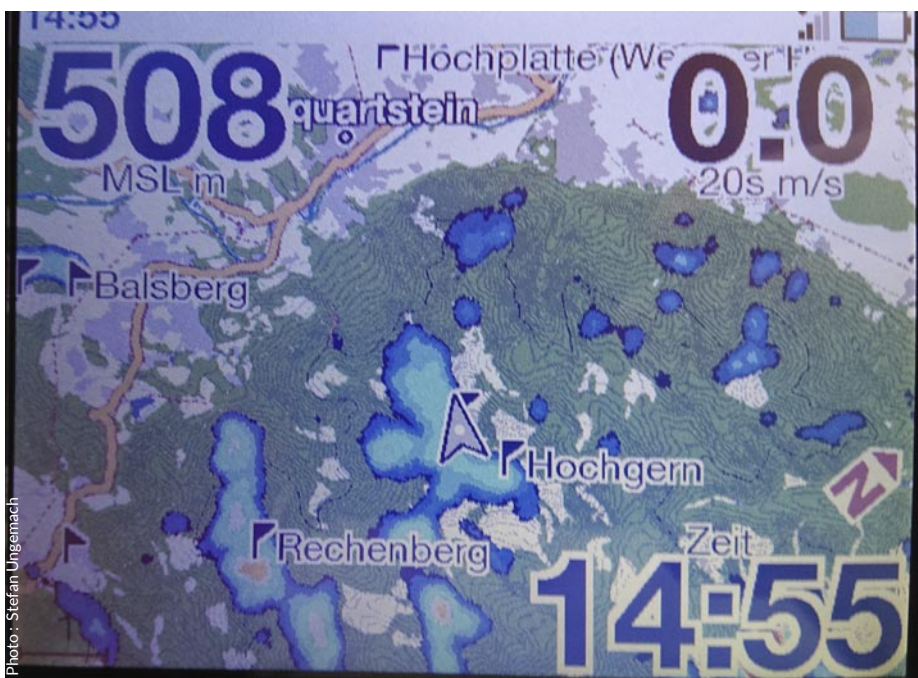


Photo: Stefan Ungemach

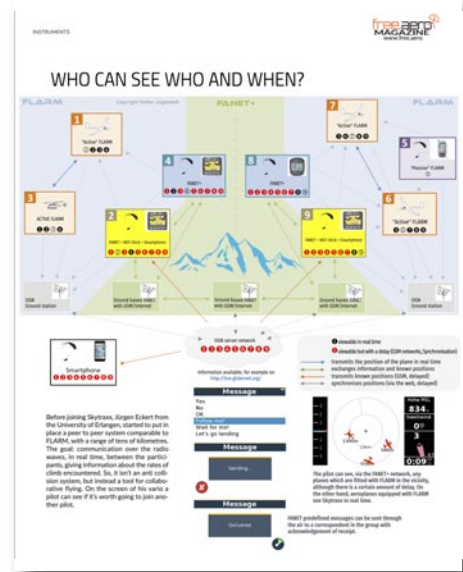
Photo of the thermal zones display by KK7 service, which requires a subscription.

### EXPLICATIONS SERVICES

Skytraxx-OTA refers to the manufacturer's service infrastructure through which updates, airspace, obstacle data, flight zone information, etc. reach the instrument by GSM (worldwide) and allow the transfer of flights to servers, without cables. The service costs 39€ per year, but the first year is free.

BurnAir helps in flight planning with a huge database of information regarding flight zones, obstacles, hike & fly routes, valley wind systems (some regions) and weather forecasts. Added to this is its own network of ground stations for tracking and live weather information via FANET links. The Premium subscription, 129 € per year, includes route planning, thermal forecasts, standard routes, and the display of wind readings for out-of-range FANET wind-talkers via GSM, which also requires the OTA subscription.

FANET weather stations within range are, of course, visible without a subscription.



Reminder of all you need to know about FLARM/FANET and the other aspects of collective intelligence in flight:  
<http://voler.info/contents/EN/instruments2018/index.html#issue/35>



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Grafik : Sascha Burkhardt

Anschrift:  
Waldstr. 23  
D-79108 Freiburg  
contact@free.aero  
Tel 00 49 152 57099148

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