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#subs



A submarine harness under a BGD Diva 2 at the PWC in Governador Valadares in April 2026.

In competition, pressurized harnesses ("submarines") have become the norm... the performance gain is very significant, especially in transition, but also in thermal flying. Martin Scheel brings beautiful images from the last round of the PWC in Brazil.

Photo: Martin Scheel / PWCA



Photo: Martin Scheel / PWCA

#shot

Launching a modern submarine is anything but tedious. Here, on 18/04/2026 in Governador Valadares. Photo: Martin Scheel/PWC

#content

1	COVER
2	#SHOTS PWC
3	#CONTENT
4	#SHOT
4	AD PARAGLIDING MAP
5	AD #INDEPENDENCE PIONEER 4
6	SHOT SUBMARINE HI-TECH
6	AD XCCONTEST
7	HISTORY SUBMARINES
8	AD STODEUS
9	AD WINGMASTER
10	AD SKYBEAN
12	AD NIVIUK TAKOO
13	#SUBS #XPYR
15	#TANDEM SUB
16	AD U-TURN PASSENGER 3, RA-ZORBLADE
17	AD PHI MAESTRO 3
18	REVIEW SUPAIR #ALP, THE #PIO-NEER
19	AD PHI PHI MAESTRO 3 LIGHT
21	AD SKYMAN SIR EDMUND SHARK
23	AD NIVIUK ROCKET R
24	TEST OZONE #SUBLITE
30	AD PHI MAESTRO 3 LIGHT
33	SUB BGD TUNA (ZEPPELIN BOG-DANFLY)
33	AD PHI MAESTRO 3
34	#SUB NIVIUK ROCKET R
40	AD OZONE OZIUM
41	#COLLISION CESSNA/PARAPENTE
43	#VIDEO COLLISION CESSNA/VIVO
47	#FLARM INSTRUMENTS
48	#FANET/FLARM/OGN
48	#FANET/FLARM/OGN
49	#PROTEGEAR ALIVE
50	AD NIVIUK ARROW P2
51	#RESERVE
58	AD SKYMAN SHARK
59	MINI VARIOS
60	HEHOL WEB SERVICE
60	AD MAC PARA EDEN 8
61	AD NIVIUK KOYOT 6
62	#RENT YOUR TOY
63	PARAKITE #TWO-LINER PHI ROWDY
64	VIDEO PARAKITE PHI ROWDY
65	AD STODEUS
66	PARAKITE UPCOMING REVIEWS
67	AD #INDEPENDENCE PIONEER 4
68	IMPRINT



#shots



A submarine over the Rio
Doce in Governador
Valadares.
Photo : Martin Scheel
/PWC

#shot



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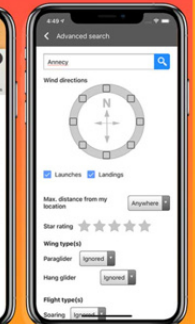
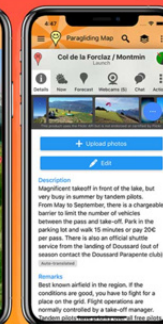
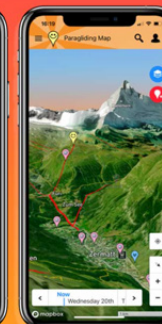
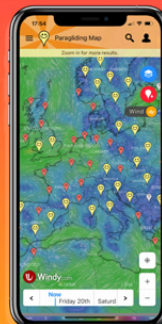
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Hi-Tech in fabric...

The Submarine was the first pressurized harness to be commercially released. Since then, many other models have appeared, notably lighter and shorter ones to meet the demands of hike & fly competitions such as the X-Alps. (Original Submarine: 8.4 kg, Sublite: 1.5 kg).

In classic competition as here at the World Cup, a higher weight is an advantage.

In all cases, most pressurized harnesses have been optimized using aerodynamic flow simulation software...

Photo: Martin Scheel, PWC in Governor Valadares. (<https://pwca.events/>)



World of XC paragliding

#history



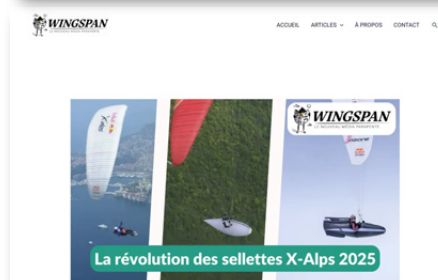
#history submarines

Pressurizing a harness to make it more aerodynamic isn't new. Luc Armant, for example, carried out early tests back in 2007 (photo top left). And Chrigel Maurer of Advance flew a pressurized-harness prototype in 2011 (photo top right). Ironical twist: at the 2025 X-Alps, he was still flying with a classic harness, and it was the first X-Alps where Chrigel got overtaken and replaced on the podium by another pilot: Aaron Durogati with a lightweight Submarine, the Ascendant Zian ST. At the 2026 X-Pyr, Chrigel, usually always with Advance, took his revenge and won hands down flying an Ozone Sublite and a Zeolite 2. It's precisely the lighter, shorter Submarines that have made this type of harness more mainstream.

Back in 2024, we announced the wave of Submarines that is breaking in 2026. Read the article again, you will also find the performance comparisons calculated by Ozone.



An interesting summary of Submarine harnesses, particularly for hike & fly and X-Alps use, can be found in this French webzine published before the 2025 X-Alps.



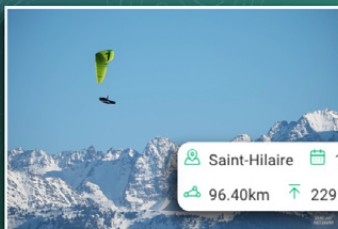


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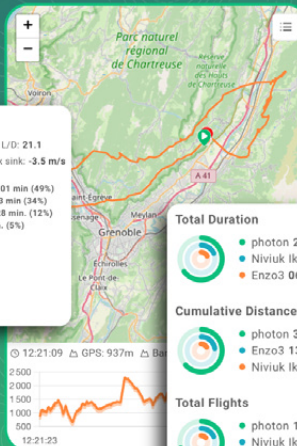
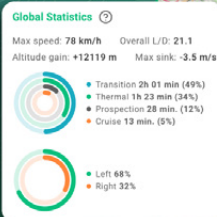
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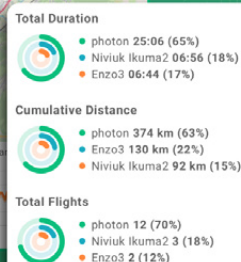


Saint-Hilaire 1 mars 2026 12:21 04:09:50
96.40km 2291m 1354m 4.8m/s 23.1km/h

Flight Analytics



Pilot & Wings Statistics



High performance despite a weight compatible with hike & fly: here the winner of the X-Alps 2025, Aaron Durogati
Photo: Maximilian Gierl / Red Bull Content Pool
Read our report again in our X-Mountain issue below...

An average cross-country pilot isn't necessarily keen to swap a classic 2-3 kg harness for a "real" Submarine weighing close to 9 kg. What's more, many new models are shorter: that's interesting for safety in the event of a flight incident, since there's less risk of ending up with the tail fin in your face during a backfly (flying backwards in a stall). But above all, lightweight envelopes under 2 kg are perfectly compatible with hike & fly, while still offering a significant performance gain, clearly superior to classic cocoon harnesses...

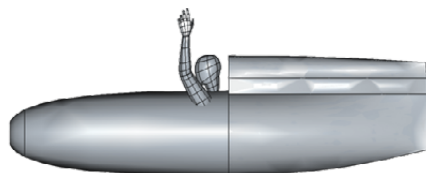




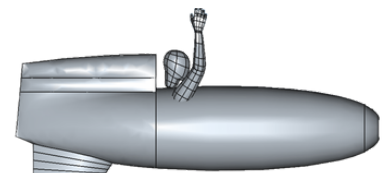
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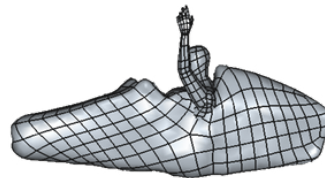
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Zian enveloppe longue (1)

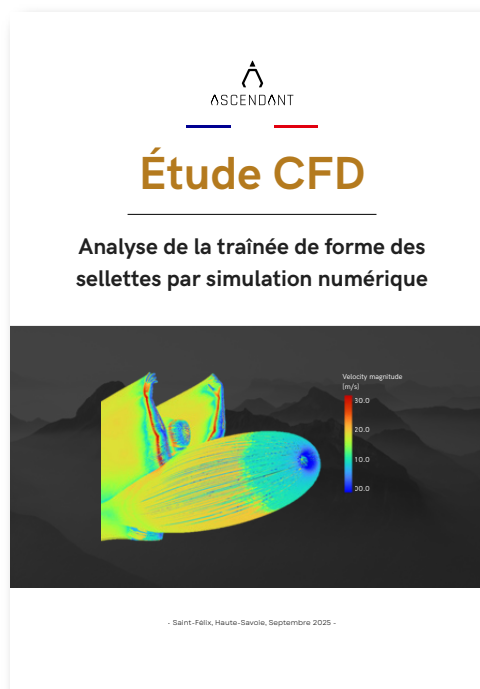


Zian enveloppe courte (2)



Cocon profilé (3)

The company Ascendant published a study on their website, carried out in-house. This is a CFD calculation ("Computational Fluid Dynamics — numerical simulation of fluid flow"), whose results may not be too far from what you'd find doing the same thing in a wind tunnel. Admittedly, their streamlined cocoon model used for this simulation looks quite pessimistic, but we're willing to believe that the parasitic drag of a classic streamlined cocoon really is fairly significant. In their calculations, Ascendant arrives at up to 123% more drag for a classic streamlined cocoon compared to their sub, long version. Whatever the real figure may be, in our own tests we did indeed find that a pressurized harness noticeably increases performance. In our 2025 article "#submarines for #all?" we asked whether these harnesses might become mainstream, and whether an improving EN B+ pilot would do well to stay in that category rather than upgrading to an EN C. The answer seems to be yes, and we're really not the only ones saying so — many instructors share this view. Of course, an EN C will still be much more precise and faster with the speedbar fully in. But in terms of glide and performance, the leap forward thanks to Submarines is clearly visible with all wings.



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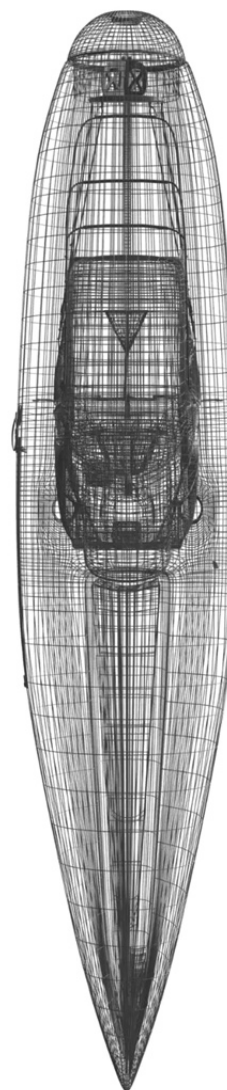
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Electronic gear is like a child - always demanding attention, feeding and protection. That's exactly what you don't want outdoors. Your gear should serve you - not the other way around. This keeps your mind free for what truly matters: your next adventure. Let's say it like it is - it will outlast you ;)



This also applies to less radical versions like the Sublite or the Zian ST. Ascendant has also calculated that a long envelope (diagram on the right) is only 2 to 10% more efficient than the short one, depending on angle-of-attack setting and flight speed. In exchange, a short version is compatible with competition rules such as the X-Alps, and easier to manage in the event of a flight incident. You can see this in the video above where Ondrej Prochazka shows how his short-version Ascendant Zian ("ST" version) behaves in a stall: the field of view stays acceptable in a backfly.

Another downside of Submarines, besides the length of the tail fin, could be their more complicated setup. But that's no longer true for the most recent versions. An Ozone Sublite, for example, can be put on just as quickly as any other harness. The cocoon of a Submarine is no longer closed with a zip as on the first Ozone versions, but with a magnetic closure, first introduced on the Supair Alp. Remember that for the X-Alps, for example, it was mandatory to be able to bring the legs in or out in under two seconds.



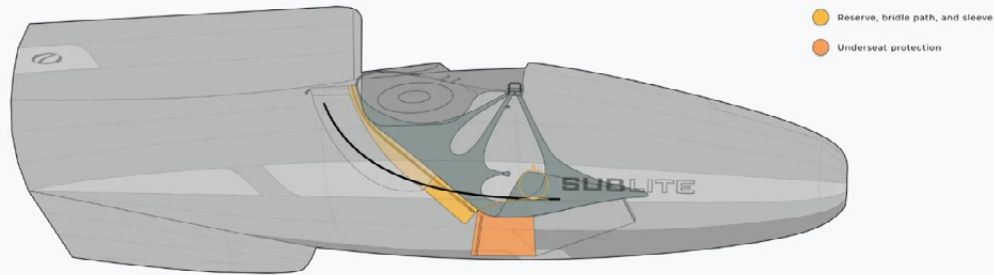
Another possible issue with the various Submarines: the design often requires much longer reserve-handle straps. (right: Ascendant) Some reserve specialists, such as Urs Haari of High Adventure, fear a higher risk of tangling on deployment. That's indeed not out of the question... But this only concerns Submarines with the reserve placed under the seat. With ventral placement, as on the Supair Alp, the problem doesn't arise. Another issue holding back the mainstream adoption of the first Submarines was their back protector.

To keep maximum aerodynamic optimization, Ozone, for example, felt obliged to keep the diameter of the Submarine tube fairly small. As a result, the thickness of the protector was often limited. That's still the case on the original Submarine, even in its fourth version. For the new Sublite, the problem is mainly the small size of this protector. If the direction of impact is slightly off-angle rather than straight from below, it no longer fully plays its protective role as it should. But that will be different for the future Sublite GT, aimed even more at the mass market, which will be unveiled at Coupe Icare 2026.

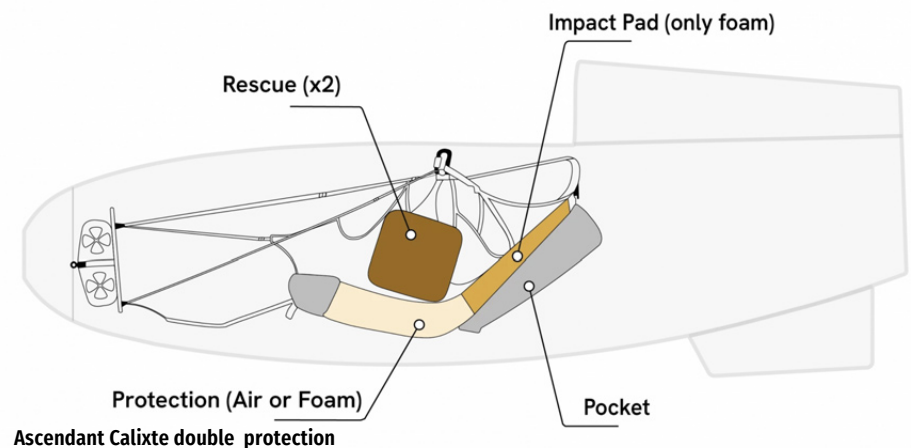
Other manufacturers have already fitted larger protectors into their Submarines: the Ascendant Calixte, for example, has a protector that extends well up the back. To sum up, with good protection and a short tail fin, some models come close to being an almost universal harness for cross-country and even intermediate pilots, with a few small caveats: the lightweight construction makes them more fragile, the large front "hood" reduces visibility, and roll stability can be lower, which may be disorienting for less experienced pilots.

But yaw stability and the elegant, aerodynamic way of rolling into a turn offer a whole new flying feel. There are also already new ideas for further improving aerodynamics by reducing the drag of the pilot's arms, stretched out above them: Eric Laforge proposes extending the brake lines along the cocoon (classic or Submarine).

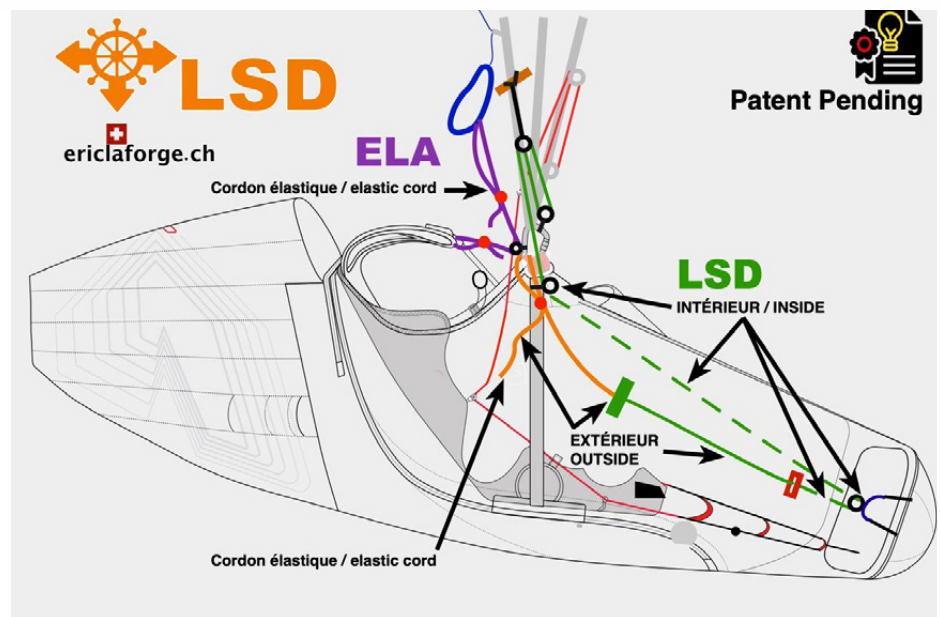
To be continued... 🧐



Ozone Sublite protection



Ascendant Calixte double protection



EN/LTF B

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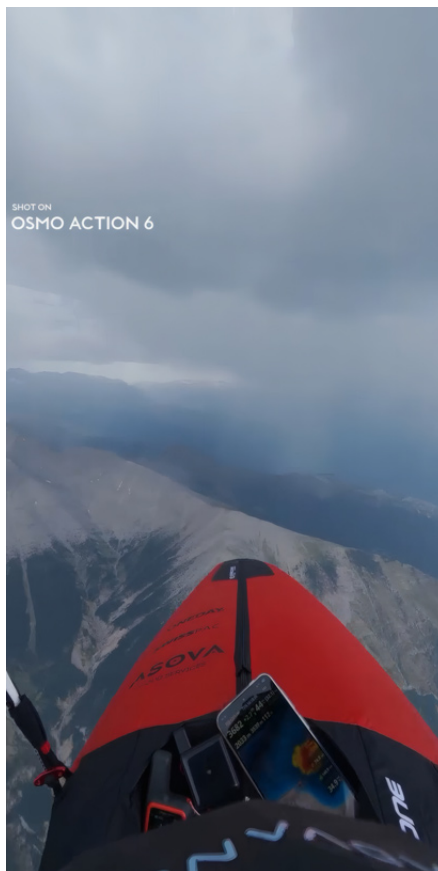


NIVIUK

#subs x-pyr

#x-pyr 2026 subs

The X-Pyr 2026 was a true submarine festival: Chrigel Maurer (right) won the competition in record time with his size L Sublite under a Zeolite 2. FunFact: Ozone tells us they did not sponsor him, and that he bought this gear himself. An act of infidelity to Advance that clearly paid off! His instruments consisted solely of an XC Tracer Mini V, an inReach satellite tracker, and his phone.



In second place is the German pilot Markus Anders, with a new version of the Skywalk Range X-Alps AV, also a Submarine unlike its predecessors (image to the right). Skywalk X-Alps 6, instruments XC Tracer Mini 5 and Max II.



#subs x-pyr

Third place: Lars Meerstetter on Ozone Zeolite 2, Ozone Sublite, XC Tracer Max II (image on the right).

In 4th place, Arthur Moindrot, with an Ozone Sublite and a Zeolite 2, Naviter Oudie.

In 5th place, Noé Court, with Niviuk's new light submarine, the Rocket P, and a Niviuk Klimber 3P 21.

The list continues with many Submarines: Ozone Sublite, Niviuk Rocket P, Ascendant Zian, Bogdanov Zeppelin...

So these are all light submarines that any pilot can buy right now, in an identical version, except for Niviuk's Rocket P, which could go into series production as early as autumn (right). 🪂



#tandem sub



#tandem sub

Julien of the "Flying Frenchies" had the great idea of adapting the "Submarine" system to the tandem. Compared to two pairs of dangling legs, there is clearly enormous potential!

He had to go through several prototypes (see the first one on the next page), and he is still fine-tuning it, but the result of this homemade Submarine looks quite aerodynamic in the photos! However, it isn't possible to close the pilot/passenger connection with a magnetic zip, as it would open during the pilot's or passenger's movements. So there is a real zip, which makes setting up after takeoff a bit more laborious. On the other hand, the "exit" for the legs, for both pilot and passenger, uses a magnetic zip to allow quick opening at landing.

To be continued!

<https://www.instagram.com/the.flying.frenchies/>





On the right, the first prototype... still a lot of creases...





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MAESTRO 3

The next step

In June 2026, Julien tests his invention during a hike & fly adventure with a friend in the Austrian Alps.



#subs

Photos: Sascha Burkhardt



#supair alp - le pionnier

When the Submarine Alp came out, it was a small revolution: building a very light Submarine, so suited even to hike & fly, while at the same time very aerodynamic, for a significant performance gain. Even though this harness is now slightly outclassed in certain respects by the competition, it remains a very good lightweight Submarine, and can be found at tempting prices, both new and used.

Its inflatable protector is bulkier than that of the Ozone Submarine, for example, even though the damping values are comparable to the original Ozone Submarine (Supair Alp: 43.10 g, Koroyd Ozone Submarine: 42.47 g, Ozone Sublite foam: 42.40 g).

All else being equal, performance can't be quite the same. If Ozone chose a thinner protector, it's so as not to increase the diameter of the Submarine.

The Alp's light weight obviously also has its drawbacks. Its aerodynamic stability can't be the same as that of a harness that weighs 4 times as much. The Alp weighs 1.58 kg, while Ozone's original Submarine weighs 8.10 kg. It's worth remembering that the Alp came out well before Ozone's Sublite (1.45 kg).





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MAESTRO 3 light
High B



Very reassuring. On the Alp, the rescue parachute is in the ventral position. Drawback: the Alp's cocoon doesn't open completely at the front; you have to put it on from the top.



#subs

To start with its one real drawback, getting into the Alp is relatively impractical: you have to slide into the leg loops from above. This is a bit more complicated because this part is narrow and hard to see, partly hidden by the harness fabric. On top of that, elastics narrow this part of the harness. Over time you develop techniques to get in faster, but at the start, it involves things like trying it out lying on your back.

For takeoff, there's no need to tuck the harness's tail fin under a strap — you can just let it float free. This works surprisingly well; nothing touches the ground. You can even play face-to-the-wing in strong wind, with the fluttering fabric around the pilot barely getting in the way. After takeoff, you slip very easily into this cocoon. We even find it easier than with some classic cocoons.

Photos: Free Aero Pilot: Arthur Burkhardt



The magnetic closure that makes the Alp airtight was a Supair innovation. Since then, it has also appeared on all competitors' models, which initially still used zips that were hard to close by hand. In fact, the zip closure on the very first Submarines was one of the biggest exclusion criteria for training young pilots in the French talent program. It was simply too complicated, since it represented an extra risk that absorbed pilots' concentration during setup.

For the X-Alps, it likewise wasn't possible to work with zips, since the X-Alps rules require getting fully into the harness in under 2 seconds, without using your hands at all... The Alp allows this, but its classic version wasn't usable in the X-Alps because the tail fin is too long (risk of it ending up in the pilot's field of vision during a flight incident).

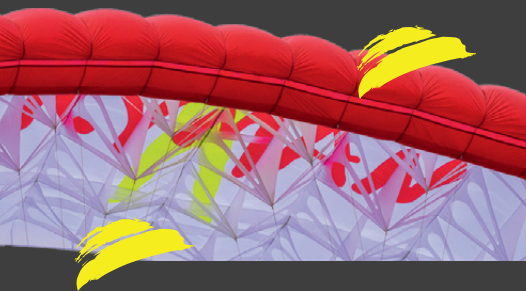
In the air, the Alp immediately gives a different flying sensation than a classic pod harness: the pilot is automatically better aligned with the wind, the harness lines up perfectly with the flight path, and in turns you really feel like you're cutting the corner like a fighter jet, in a very smooth arc.

There are two reasons for this: on the one hand, the long fairing keeps the harness fairly precisely aligned with the yaw axis. On the other hand, the pilot actually keeps their whole body better aligned with the axis, without it being more tiring.





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Photos: Free Aero Pilot: Arthur Burkhardt



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As with all Submarines, the view isn't quite the same as with a classic harness; the view downward, for instance, is slightly obstructed, but that's not a real problem as long as the pilot stays alert.

What's striking is the seating comfort, but above all the thermal comfort in a harness like this: you can fly in shorts almost all the time, even at high altitude, since the sun turns the Alp into a greenhouse. On southern sites it gets almost too hot. This is also, incidentally, why NearBird developed a Submarine that holds its shape not through internal pressure filling the whole air volume around the pilot, but through pressure held by a double-layered wall. This lets the pilot open the pod up a little while still keeping a very aerodynamic shape.

If you do the same thing on an Alp and open it up to get some air, the whole cocoon obviously collapses, badly degrading performance. The same thing can also easily happen if you're not aligned with the axis.

For example, when doing ears, the angle of the airflow around the harness can change so much that the pressurization is no longer guaranteed and the fabric starts to

flutter. It's just a bit disconcerting, and you can prevent this by tilting the cocoon further downward, to match the much steeper flight path.

On landing, you should of course get out of the harness early enough. It's obviously not designed at all for scraping along close to the ground. The fabric is lightweight everywhere; there's no reinforcement under the seat.

Folding it up is very practical and quick. You deflate the back protector and fold the harness into a tiny little package. It's truly amazing how a Submarine of this size and aerodynamic quality turns into such a tiny volume, perfectly suited for hike & fly. Of course, this lightness comes at another cost. You don't get quite the same efficiency as under an 8 kg pressurized harness.

And sometimes, after the pilot moves, you can get small parasitic movements of the fairing, which can start to shift slightly on your back. But that's really a price worth paying if you want to be able to climb the mountain on foot with your harness as part of a hike & fly setup, and end up with a very high-performance setup.

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#subs

And that's true even if the wing above isn't a competition glider but, say, an EN B+: the performance gain is clear.

The thermal comfort and the sheer flying pleasure of this rig are genuinely addictive. The biggest drawback, which doesn't affect aerodynamic quality, is getting into it at takeoff, where you'd really have liked leg loops that open instead.

If you'd like to switch to a Submarine, you'll find the Alp (regular price: €2690) currently sometimes on promotion at very attractive prices (up to 50% off at www.lespassagersduvent.com).

It's aimed at experienced pilots, while still adapting to many types of wings, including intermediate ones. Combined with a light wing and a light reserve, it lets you climb mountains with a high-performance cross-country setup weighing around 6-7 kg on your back... 🧐



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NIVIUK

#subs



Photo: Antoine Boisselier

#ozone sublite

Ozone offers the Sublite primarily for hike & fly competition pilots. At the same time, it's meant to also be a harness for adventurers who want to go far, for a "big bivouac flight where speed and performance are essential." It's true that the Sublite has already been well proven in several races, such as the X-Alps and the X-Pyr.

It's an ultra-light harness. It weighs only 1.5 kg in size M. It packs down into a very small volume. So it's perfect for high-performance hike & fly.

But since its second strength is its optimized aerodynamics, clearly superior to a classic cocoon harness, we think it also has its place for classic day cross-country flights with more modest ambitions. In case of an unplanned landing in a remote valley, you still end up carrying a lot less gear on your back...

Like most modern Submarines, the Sublite has a tail fin underneath. A necessary appendage, among other things to compensate for the shorter tail, compatible with hike & fly competitions like the X-Alps, but also better suited to use by a large number of intermediate pilots.

Here, the Sublite under the EN B Skyman Cross Country 3 (upper third of EN B, but not at the limit).

Such a combination makes complete sense, and very probably has a future...



#subs



Straight out of the box, the settings were already quite good, but here we can see folds that could largely be avoided with proper adjustment. Also, let's not forget that the beautiful aerodynamic lines and the large volume of this harness are made from materials weighing barely 1.5 kg!



#subs



Like all Submarines, the speedbar line passes through a small hole next to the main attachment point, here made up of a softlink integrated into the harness. Top right, the (comfortable) neoprene arm opening. It also fits thicker arms well.

The seat chassis consists of Dyneema threads, sewn onto a lightweight fabric that has no structural role other than keeping the threads in the right place. This is the technology Ozone invented a few years ago for the F*Race. You could say the Sublite is an F*Race 2 with a pressurized envelope around it...



#subs

It's already made quite a splash. Many pilots have ordered it since it went on sale in early 2026. One reason is no doubt that, for the first time, a Submarine-type harness is really very accessible, meaning very easy to put on — see the image sequence in this article. Sure, there's also Ascendant's Calixte, for example, but it isn't as readily available on the market as the Sublite, which you can receive a few weeks after ordering.

As with all Submarine-type harnesses, the trickiest part is the initial setup. You have to remove the speedbar line that's fitted on the wing and replace it with the line coming out of the Sublite, which needs to be hooked into the pulley system instead. The wing is then connected via the T-connector built into the harness, of the Soft Link type. And as with all Submarines, the wing normally stays permanently attached to the Sublite; you fold the wing and then place the Sublite on top of it.

There are many adjustments on the Sublite, first of all the cocoon length, which is set classically on the ground by moving a loop along knots. Comfort adjustments, in particular lumbar support, are made via sliding splices. That's standard on lightweight harnesses. On the Sublite, it's possible to do this in the air too, but that means opening up the envelope.

At takeoff, you're ready almost as quickly as with a classic harness. You find the arm openings without any trouble. On other harnesses that wasn't always so obvious. Once you've closed the zip, you start feeling warm quite quickly in summer, but that's normal and part of the deal. We've always said it: Submarines are greenhouses. So whatever the weather and the planned altitude, you can often stay in shorts.

At takeoff, again nothing to complain about, nothing gets in the way. It's just like a classic harness. Of course, you still avoid getting caught in bushes, since it's only a relatively lightweight fabric.

Also great is the protection under the pilot's seat and legs. It's a thicker fabric than the fabric on the Alp, for example. It's amazing that with all that, the harness really only weighs 1.5 kg. But the seat frame is built like the F-Race 2: structural strength is provided by a weave of Dyneema fibers rather than by fabric.

Comfort adjustments, in particular shoulder and lumbar support, are made via sliding splices.



ABS adjustment



Footplate adjustment





The Sublite is really easy to get into: you slip your right leg in from the top, over the leg loop, then close the other leg loop with a T-connector. Only this one isn't super practical to close, especially when the harness is new and the eyelet not yet broken in. Ozone had to make it fairly small because on certain production runs of other lightweight harnesses it opened too easily. On the other hand, you'd rather have T-connectors on both sides, but it's an "anti-forgetting" safety feature that forces you to thread at least one leg loop. But the rest is even quicker: you close the zip and you're ready to fly! This ease of getting in makes a striking contrast with other Submarines. It's almost as fast as with a conventional harness!

Below: this harness in no way prevents long inflation and ground-handling sessions in the wind at launch: nothing drags on the ground, and the pilot can tilt their head fully back without being bothered by the fairing.



Up to a certain point, the Sublite stays remarkably well inflated, even when the pilot shifts off-axis, for example during chained turns with big ears, as seen here. Other Submarines start to flutter sooner. Also visible here: the reinforced fabric section under the pilot's seat and feet.

Photo: Free Aero Pilot: Sascha Burkhardt

Getting your feet in is easy — you can usually get your feet in without letting go of the brakes, and the Sublite closes and inflates very quickly.

Its light weight doesn't stop the Sublite from holding internal pressure well, even if you move around a lot in the harness. In every case, it weathervanes nicely into the flight path. That's one of the biggest advantages of Submarine harnesses. On one hand, the pilot reclines in the airflow in a more streamlined, straighter position without it costing them much effort, and on the other hand, of course, the large fairing supports this weathervaning effect.

You can also feel it in turns, which you cut much more cleanly. The harness's responsiveness through the seat is very good, especially if the ABS is set relatively loose. You can fly even a wing that's only moderately responsive purely by weight-shift through the seat, for turns as well as for wing-overs and 360s.

Pilots used to more classic harnesses may even find it relatively unstable in roll, but on one hand you can tighten the ABS, and on the other hand, it's true that this type of harness frame is fairly responsive, and the hang point is also a bit lower compared to a classic harness, due to the available volume constraints.

Comfort is surprisingly high for a minimalist harness. Properly adjusted, you don't feel fatigue. Visibility is reduced compared to a classic harness, since there's this big hood up front, but that's normal and unavoidable. When scanning terrain to land at altitude, you need to move your head a bit more, and anyway, as you get closer, you bring yourself upright into a seated position, regaining normal visibility.

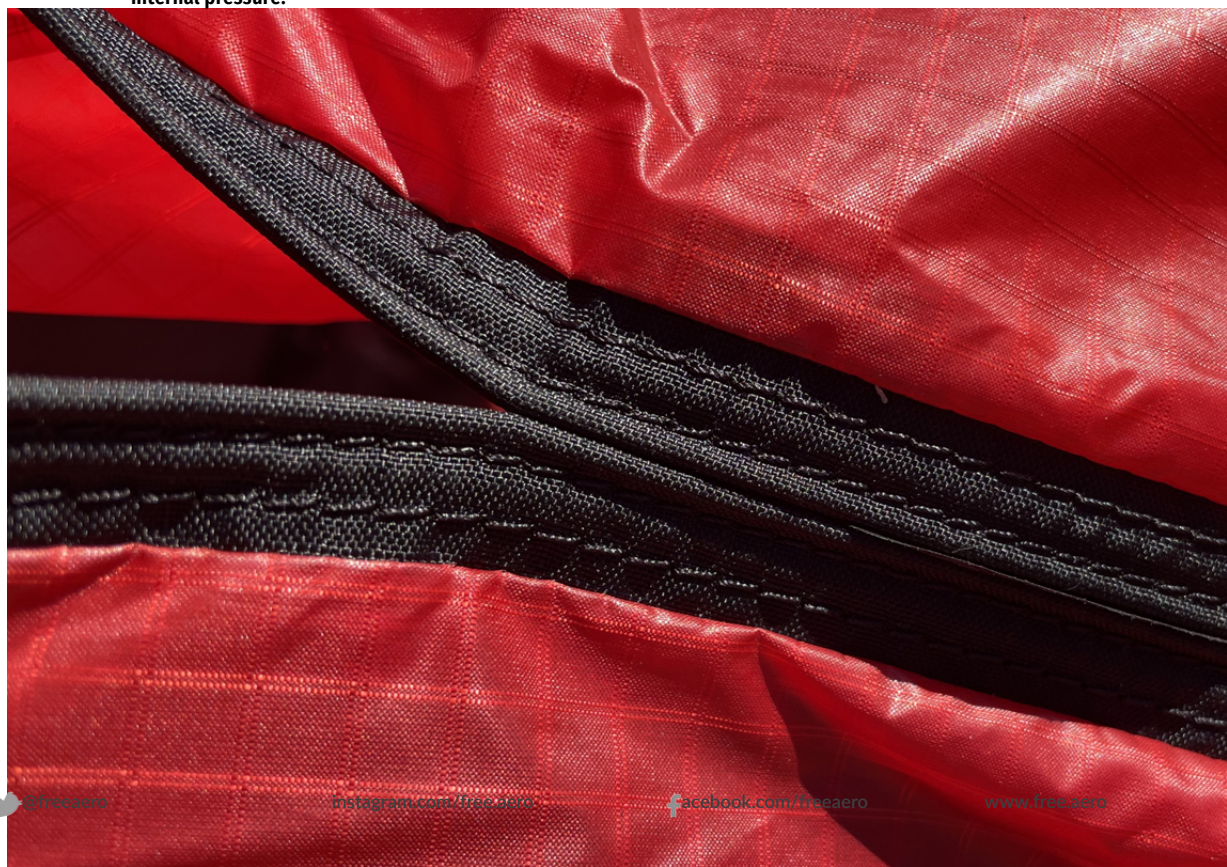




MAESTRO 3 light
High B



The nose is held well open by rods, and the footplate is rather small, easily letting the relative wind through. Together with the airtightness of the very thin magnetic closure, this could be one of the reasons for the remarkable retention of internal pressure.





As for the performance the Sublite brings, there's no doubt: even a moderately performing wing gains in glide. The gain is obviously even bigger for high-end wings at high speed and on the speedbar. The relatively minimalist speedbar is easy to find with your feet and easy to operate.

To sum up, this Submarine could be used very universally by anyone who loves lightweight gear and is looking for a bit more performance, as well as a purer, sportier flying feel. The downsides of Submarines remain, of course, visibility and possible interference with the field of view from the fairing during a backfly (stall), although with this fairing, much shorter than on an original Submarine, the risk is much lower.

Photo: Free Aero Pilot: Arthur Burkhardt



#subs

That leaves the big BUT: the back protector really is too small — it will only be truly effective if the impact comes straight from below, on a trajectory that closely matches the certification tests.

We love this harness for all its undeniable qualities of lightness, comfort, and handling; it really is a successful fusion of a Submarine with the ultra-light world. But we'd love it even more with a bigger protector that extends further up the back... That may well be the case with the future Sublite GT in 2027... 🙏

Photo: Free Aero Pilot: Arthur Burkhardt





PHI-AIR.COM

MAESTRO 3

The next step

Bogdanfly's Zeppelin Submarine is now available in a version 2. It has gained an extra tail fin underneath at the rear, and you can also buy it from BGD in a "Tuna" version that takes on the BGD brand's colours...
Notably, the inflatable protector covers a large area and obtained certification at 27 g (vs. 40-41 g for the competition).





#niviuk rocket r

It's finally happening — Niviuk is delivering its Submarine Rocket R to the general public as well. We had already seen it in competition, but it wasn't available to everyone. Now this first Niviuk Submarine will be within reach of all ambitious pilots.

Unfortunately we haven't yet had the chance to fly it, but during a visit to Niviuk's premises in Catalonia, we were able to see the first production unit fresh off the factory line.

On the following pages, a few images and technical sketches of this high-end Submarine, weighing between 8.9 and 9.4 kg depending on size, and priced at 3300 € at most retailers.



#subs

The distance between the footrest and the nose is automatically adjusted by the tension of these sheathed Nitinol wires.

With nothing more than the gentle pressure of a very small fan, the envelope firmly holds its shape.



#subs



Niviuk's development work is carried out by a large team, part of which is based at headquarters in La Celler de Ter, about 70 km north of Barcelona.

Dominique Cizeau has been at the helm of Niviuk for over 20 years. A perfectionist, who always lives up to the slogan he defined for Niviuk: "The Importance of small details".

This is probably also why many eagerly awaited products take longer to reach series production. Niviuk seems to place great importance on the consistency of the finished product.

So the Rocket R is here — when will the series version of the lightweight Rocket P be released?



Photos: Free Aero Sascha Burkhardt

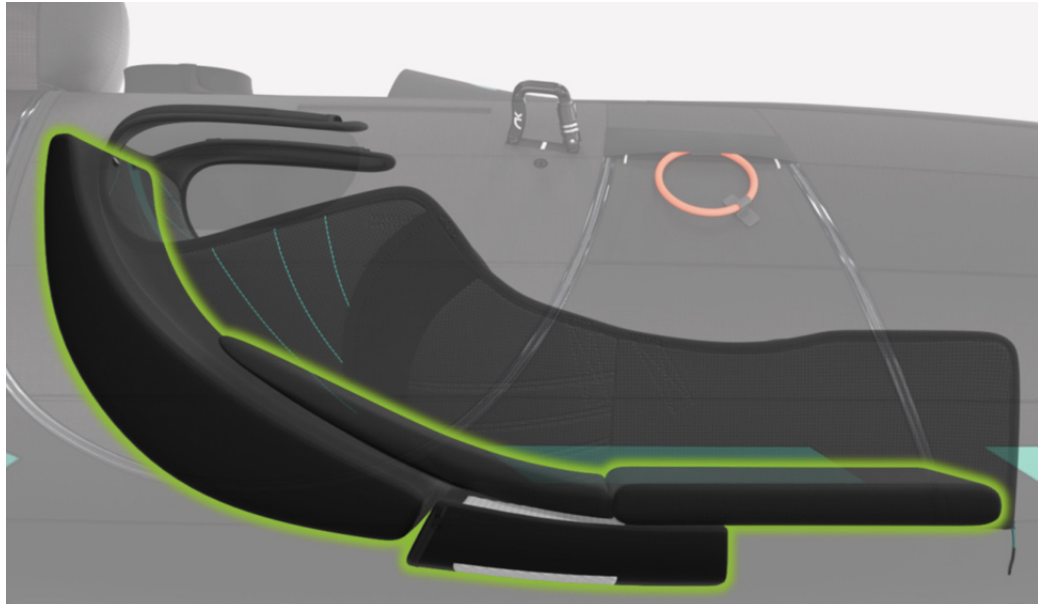
#subs

According to Niviuk, the outer skin has been CFD-optimized for aerodynamics and stability. In addition, its design is said to minimize seams and deformations, creating a surface that is "perfectly smooth, homogeneous, and wrinkle-free."

The magnetic closure obviously contributes to the airtightness of the cocoon.



#subs



In addition to the Orikami protection under the seat, several additional foam pads provide both comfort and extra cushioning in the event of an impact.

A beautiful Submarine silhouette, wrapping around this extremely comfortable seat.

Compared to the Drifter 2, there is, among other things, an additional layer of foam.



#subs

Photo: Tim Rodas / Nkteam



OZIUM

SEMI-LIGHT SPORT XC-POD

The Ozium 3 is the natural evolution of the Ozium concept, incorporating the latest advances developed for the F*Race2 while remaining accessible, durable, and practical for everyday pilots. Designed as a true semi-light cross-country and adventure harness, it delivers high aerodynamic efficiency and excellent protection without stepping into the extreme category.

The Ozium 3 is designed for pilots looking for a lightweight, high-performance harness that remains accessible, comfortable, robust, and practical. Ideal for cross-country flights or occasional hike-and-fly and adventure projects, it offers a refined balance of performance, safety, and usability for everyday flying.



INSPIRED | DRIVEN
BY NATURE | BY THE ELEMENTS

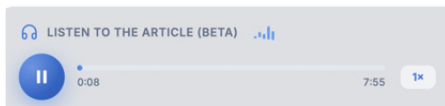
Pilot: Samuel Jobard

Photo: Antoine Boisselier

#collision


 Video & screenshots: https://www.instagram.com/sab_thi/

#collision cessna/parapente



On Saturday, 23 May 2026, a private aircraft, a Cessna F182Q Skylane registered OE-KAF, collided at 2,000 m altitude with an Austrian paraglider pilot above the Schmittenhöhe, a well-known flying site in Austria. Flying at approximately 180 km/h, the aircraft struck the pilot's line set and wing. The video recorded by an Insta360 camera went viral and was widely commented on, including in the mainstream media. The pilot was lucky not to be hit directly by the aircraft. Her paraglider (Air Design Vivo), however, was completely torn to shreds. She thus found herself temporarily in near freefall (with additional drag from the wing's remains).



#501568

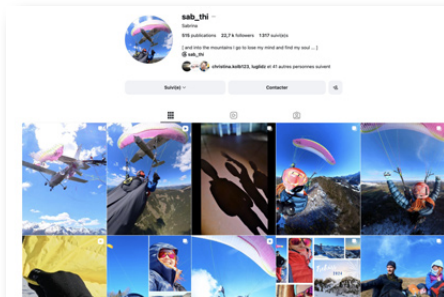
#2-2026

Fortunately, she reacted very quickly and deployed her reserve parachute, a U-Turn Backup X100, to slow her descent early enough before her speed built up too much. It is worth recalling that our reserve parachutes are not designed for freefall deployment – certification testing opens them at 40 m/s, or 144 km/h. In true freefall, it theoretically takes only around 4 to 6 seconds to reach that speed. After deploying the reserve, the pilot descended to the ground, where a tree just beside a forest path further slowed her sink rate. She escaped with only a few bruises and bumps. The aircraft was able to return to Zell am See airfield, still with a piece of the paraglider's canopy caught on its left wing. There is little doubt about the cause of the accident and the responsibilities involved, as the police already noted in their statement that the unpowered aircraft had right of way. The first question most paraglider pilots ask is therefore: how can this type of collision be avoided? It is certain that a paraglider pilot cannot avoid an aircraft, glider, or helicopter approaching at around 200 km/h.

An almost free-fall phase...

Here, Sabrina's hand is caught in the speedbar line, but that didn't stop her from pulling the reserve in time.

For the many conspiracy-minded "experts" who assume it's fake: the irregularity in the brake line isn't due to "bad Photoshop," but is a well-known phenomenon with Insta360-type cameras, which film with two lenses at the same time.



#2-2026

 Premium FR

Search



There are, however, ways to reduce the risk of this type of accident to some degree. First of all: at the editorial team, we have always favoured, when buying a wing and whenever possible, the most eye-catching colours available. A short survey among aircraft pilots highlights one clear favourite for visibility: orange. It is a colour that is very visible against the sky, against clouds and against the ground. Another highly visible colour is red. Yellow might also come to mind, as it is the complementary colour to blue sky — though in front of a cloud, its visibility is less certain. As a reminder, the tandem involved in the Méribel collision (see the last issue) was dark green on top and white underneath — at a ski resort, no less...

Photo: Pascal Purin



Trois Phi Maestro 3 light : le rouge et l'orange sont particulièrement bien visibles.

#collision

Des motifs de damier pourraient probablement aussi augmenter la visibilité, comme ici avec ces Independence Pioneer 4 (voir dernier numéro). Photo : Stefan Kurrle

Schachbrettmuster könnten wahrscheinlich ebenfalls die Sichtbarkeit erhöhen, wie hier bei diesen Independence Pioneer 4 zu sehen (siehe letzte Ausgabe). Foto: Stefan Kurrle

Checkerboard patterns could probably also improve visibility, as seen here with these Independence Pioneer 4 wings (see last issue). Photo: Stefan Kurrle



La couleur des sellettes modernes pourrait jouer un rôle aussi au niveau de la visibilité: les couleurs vives se détachent bien des fonds ..
Photo:
Stefan Kurrle



#collision

In any case, at the editorial team, we have always chosen wings in colours other than blue or white. Pink can also be an excellent choice. However, if the pink appears too washed-out, as seems to be the case with this pilot's wing, which was moreover combined with white, we feel that visibility is not as well guaranteed. Safety requirements therefore somewhat conflict with current trends, which often favour very "stylish" but less eye-catching colours — leaning more towards bronze, for example. Another way to improve the odds against a collision is of course to use FLARM-equipped instruments. We have regularly featured these electronic devices, which are widely used among glider pilots in particular, and which allow aircraft pilots to see paraglider pilots early enough — provided the paraglider pilot is equipped with a FLARM-enabled altivario.



A relire: notre classique, le dossier "collisions"....



The Hiko P, a very lightweight wing positioned between the Hook P and the Ikuma P, comes as standard in three colors (custom colors optional). The pink "Flamingo" is the most requested color... Below, a classic Hiko in the "MotMot" color.



Tekno



Citrik



Flamingo



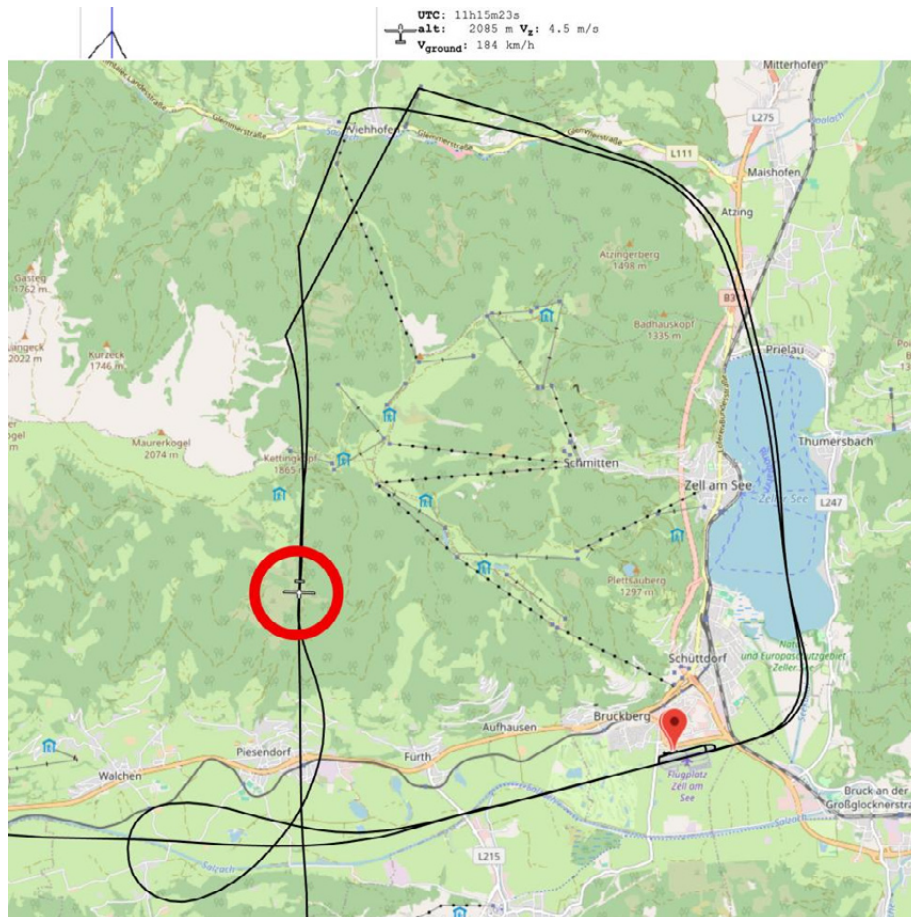
#collision

Several such devices exist, including certain Flymaster models, the XC Tracer Maxx, the Skytraxx, and the SkyBean Strato. The purchase of a FLARM instrument is also subsidised by the Federal Office of Civil Aviation, via the Swiss free-flight federation. The FLARM system has sometimes been criticised, notably for the — thankfully discontinued — practice of allowing licences to expire, leaving pilots unprotected if they had not updated their device in time. It remains, nonetheless, a private company maintaining a proprietary standard, and it would certainly be desirable for a public open-source system to replace it. This will be the role of ADS-L, developed mainly to account for the large number of drones that will soon populate our skies. Unfortunately, the bodies responsible for certifying it and establishing the standards are working very slowly. Some altivarios, such as the XC Tracer Maxx III, are already fully equipped with it. The Syride Evolution 2, which does not include FLARM (for reasons of principle: dependence on a private standard), is available with ADS-L.

Brand new on the Syride Evolution 2: Syride is planning an anti-collision alert with a popup that positions us in a top-down view (TCAS type), displayed when:

- an aircraft other than a paraglider / hang glider is detected in flight within +/- 100 m of our altitude and a radius of 1 km
- any aircraft whatsoever is moving at more than 100 km/h around our position.

Unfortunately, powered aircraft in France are less commonly equipped with FLARM /ADSL than in other countries such as Germany and Austria, where it is far more widespread. On the other hand, FLARM is very widely used on French gliders — often mandatory in competitions and on many sites — and certain civil rescue helicopters are also said to be equipped with it. For the sole purpose of reducing the risk of collision with a glider, choosing an altivario with FLARM is certainly not a bad idea. And in any case, in the very near future, aircraft will also decode ADS-L to avoid collisions with drones. These are closely related standards, and often the same chip processes both signals. Protection is not absolute, however, even when both aircraft are equipped, as signal masking by the pilot's body can also occur. There are other options, such as monitoring surrounding traffic using dedicated apps like <https://www.safesky.app/> or <https://puretrack.io/>, which relay FLARM/ADS/OGN/DeLorme data received by ground stations; but this too depends on actual use by all airspace participants, and above all there is the risk of too much latency for it to serve as a real collision-avoidance system.



Sur cette analyse du blog <https://dlapilota.pl/>, on voit les deux tracés du jour du Cessna, celui du matin plus celui du début d'après-midi, avec la position approximative de la collision. En bas, sur le site AirNavRadar, il est clairement visible que la source du tracking était le FLARM équipant le Cessna (capturé par les stations au sol et transféré sur internet). Il y a donc de fortes chances que cet appareil aurait averti son pilote, si la pilote du parapente en avait été équipée. D'ailleurs, la pilote revole depuis l'accident... avec un Flymaster GPS LS2 + FLARM !

< Back to Flight Page

☆ **OE-KAF**
DEKAF

Zell Am See (LOWZ)

Saturday, May 25 2026
13:09 CEST
Departed

Altitude Speed

2400 m 1600 m 800 m 0 m

13:04 13:05 13:06 13:07 13:08 13:09 13:10 13:11 13:12 13:13 13:14 13:15 13:16 13:17 13:18 13:19 13:20 13:21 13:22 13:23

0 km/h 80 km/h 160 km/h 240 km/h

AirNav radar

Europe/Paris (UTC+2)

Download: [CSV](#) [GeoJSON](#) [KML](#)

COORDINATES [DECIMALS](#) [DEGREES](#)

DATE/TIME LATITUDE LONGITUDE HEADING ALTITUDE GROUND SPEED VERTICAL SPEED SOURCE SQUAWK

1 2026-05-23 11:05:01 UTC 47.2921 12.7880 → 090° 5 kts FLARM

2 2026-05-23 11:05:04 UTC 47.2921 12.7879 ← 274° 5 kts FLARM

3 2026-05-23 11:05:20 UTC 47.2920 12.7877 ↗ 225° 7 kts FLARM

4 2026-05-23 11:05:29 UTC 47.2918 12.7875 ← 249° 11 kts FLARM

5 2026-05-23 11:05:34 UTC 47.2917 12.7869 ← 258° 15 kts FLARM

6 2026-05-23 11:05:56 UTC 47.2917 12.7867 ← 256° 14 kts FLARM

7 2026-05-23 11:05:51 UTC 47.2913 12.7859 ↓ 186° 5 kts FLARM

8 2026-05-23 11:05:55 UTC 47.2913 12.7859 ↓ 186° 5 kts FLARM

9 2026-05-23 11:06:57 UTC 47.2912 12.7859 ↓ 183° 2 kts FLARM

10 2026-05-23 11:07:07 UTC 47.2909 12.7858 ↓ 180° 9 kts FLARM

11 2026-05-23 11:07:54 UTC 47.2907 12.7859 → 104° 4 kts FLARM

LANDED

Last seen near
Zell Am See, Austria
Saturday, May 23 2026
N/A

#collision

The aircraft pilot may get a rough idea of where they might encounter a paraglider pilot, but this is not a genuine collision-avoidance system. Apps such as Puretrack also allow pilots in flight to be tracked — see the next page. As a reminder, a collision-avoidance system such as FLARM — and later ADS-L — constantly calculates whether the flight paths of the two aircraft are converging, based on their respective speeds, altitudes and headings, which are exchanged in real time in a peer-to-peer manner from device to device via direct radio communication. These "active FLARM" devices warn the glider, aircraft or helicopter pilot of the direction of the "paraglider obstacle". The majority of free-flight altivarios, however, which integrate "passive FLARM", do not alert the paraglider pilot themselves, as this would serve little purpose and would require a more expensive FLARM licence.

To see other paraglider pilots, FANET and ADSL are the preferred solutions: see our dedicated article recalled on the next page.

Other solutions beyond FLARM/ADS-L-equipped altivarios are LoRa GPS trackers such as the SenseCAP Card Tracker T1000-E (under 100 euros), which can be reprogrammed to "speak" FLARM/FANET; this do-it-yourself approach is described in the Skywing article below...



AIR 7.35 PLUS (≈ 990 €)



Naviter Omni (≈ 720 €)



XCTracer Max II, III, XCTracer Mini V (≈ 875 € - 565 €)



Skytraxx, most models ca. 540-690 €

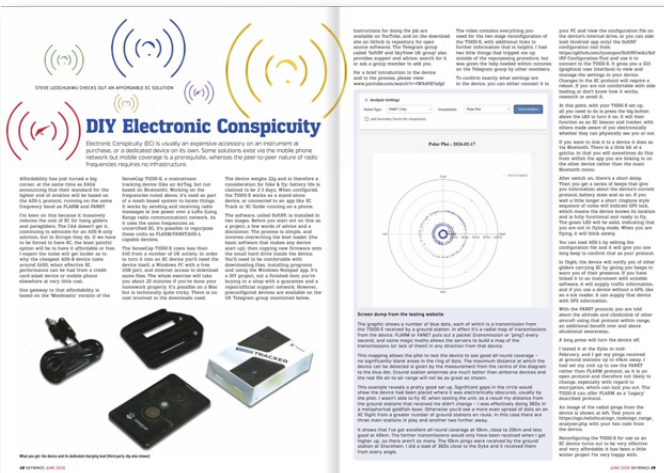
Many instruments come with FLARM, either as standard or as an option. Most only include a passive FLARM: we're seen by aircraft and gliders with an active FLARM, but we don't see them. We're also seen by ground antennas, which relay our FLARM positions to the OGN servers. Among other things, this makes it possible to track down a lost pilot...
So there are two reasons to choose a FLARM vario, the price difference isn't very big. To see each other as paraglider pilots in real time, without going through the internet, you need FANET or ADS-L.



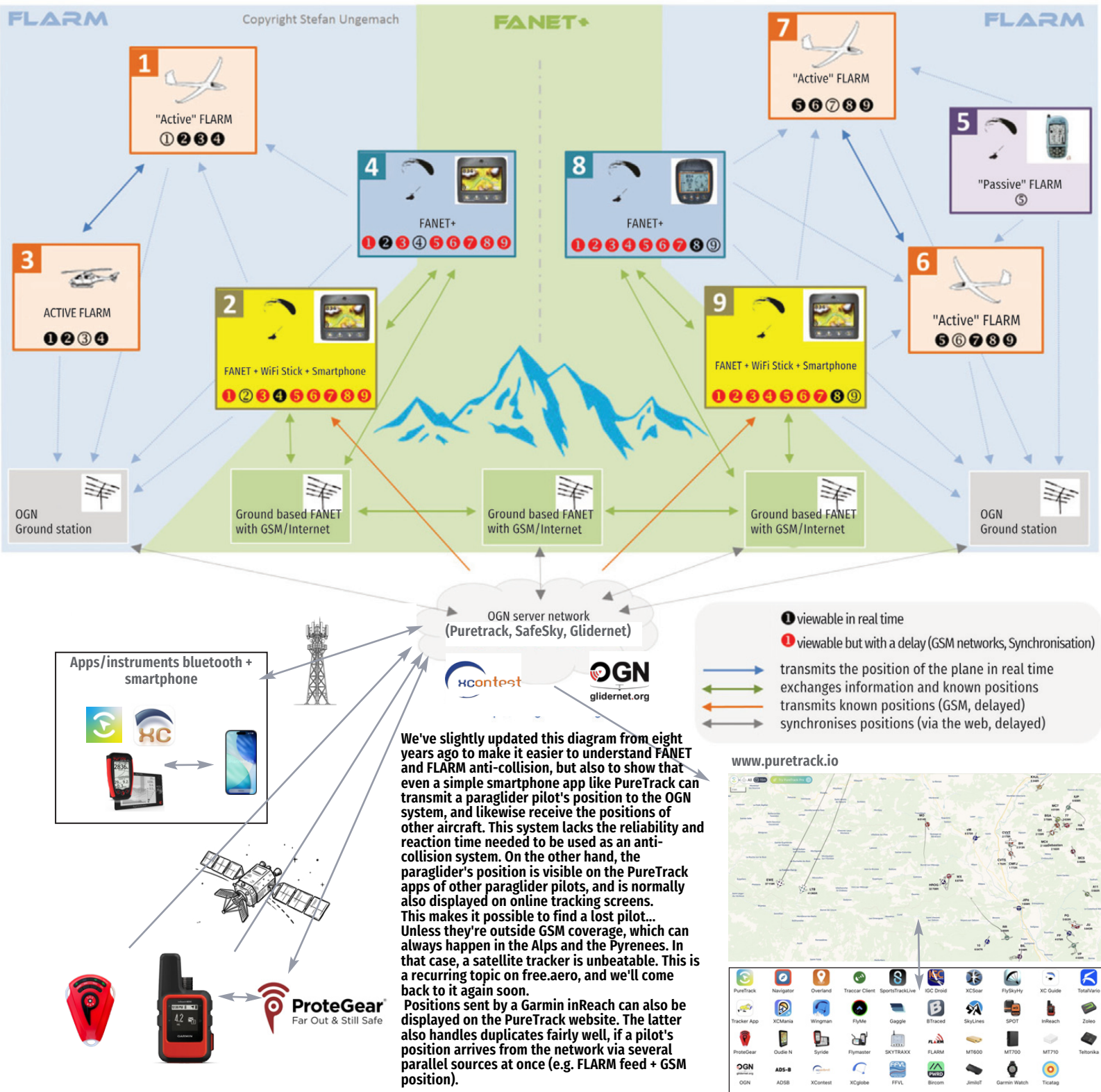
Flymaster, optional >450 €

On the right, a PowerFLARM Flex as it can be installed on board an aircraft, a glider, or a microlight. It gives a visual warning and an audible alarm if there's a risk of collision with another aircraft or with a paraglider equipped with FLARM.
According to FLARM, there are 85,000 aircraft equipped with FLARM (of various generations)

PowerFLARM Flex about. 1600 €



WHO CAN SEE WHO AND WHEN?



#tracking



Protegear A*Live

The German company Protegear was co-founded over ten years ago by passionate wind- and kitesurfer Markus Schlittenbauer. The device is meant to accompany "outdoor" athletes into the natural elements to be tracked remotely, and above all to be found. We've been testing units for years, also in comparison with other satellite trackers (right, in 2019).

The originality: combining an Iridium satellite tracker with a GSM tracker (terrestrial mobile networks) to keep costs down. For €99 a year, the athlete is tracked constantly (1 position per minute), at no extra cost as long as there's terrestrial network coverage. Their position can be retrieved on a website, and since spring 2026 it's also possible to link the device to a PureTrack account.

If the athlete is no longer under GSM (4G) coverage, they automatically switch to the Iridium satellite (1 point every five minutes. Extra cost: €0.90 per day. That's normally much cheaper than tracking via a pure Iridium device like an inReach.) Included in the price: a whole pilot-monitoring system. You can, for example, set up an alarm that's automatically sent to your loved ones if there's:

- prolonged lack of movement
- a violent crash (built-in accelerometer)
- a prolonged lying-down position...

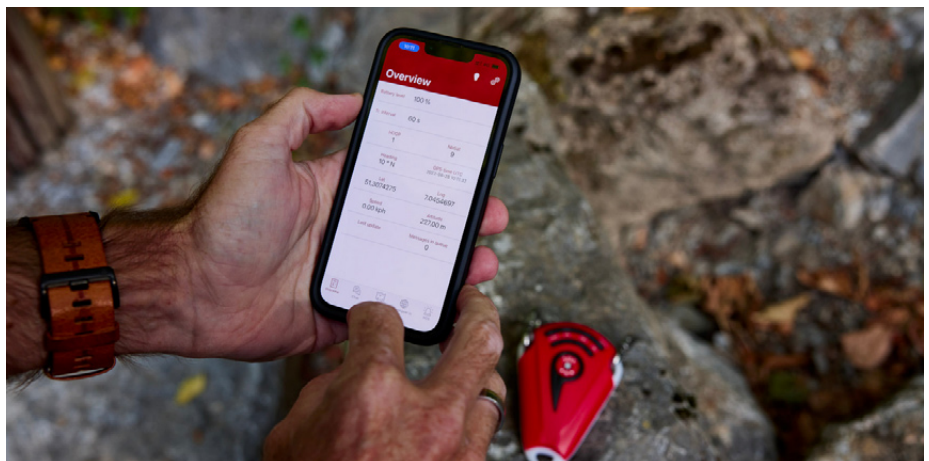
By connecting the Alive via Bluetooth to a smartphone, you can also send and receive SMS messages and emails...

The device costs €498.00

<https://www.protegear.de/>



Photo: Sascha Burkhardt



More advanced,
*just as comfortable
and lightweight*



From 1.76 kg

The new Arrow P 2 harness improves on its iconic predecessor without sacrificing the great comfort it is known for. This streamlined, ultralight harness with an aerodynamic fairing, is now more robust and practical.

Key improvements in safety, design, and durability take you even further. Designed to deliver top performance on every flight.



HIKE & FLY



FOAM PROTECTION



CROSS-COUNTRY



INFLATABLE PROTECTION



ARROW P 2

#reserve



#secours

The incident at the Schmittenhöhe was a reminder of how important a reserve in good condition is.

The pilot had a Backup X100 from U-Turn, a modern and very light reserve: less than one kilogram for 28.5 m².

It is a square reserve, a concept used more and more. Normally, this type of reserve opens very quickly, has a good sink rate and good pendular stability. These last two points are linked: a reserve that oscillates more also sinks faster.

A remark on this subject: square reserves often have a canopy with a very low profile. This favours a more or less pronounced sideways drift, which further reduces the sink rate. In fact, without this drift, some square reserves might not obtain certification, as their sink rate would exceed the required 5.5 m/s.

At the same time, this tendency to "fly" horizontally could, according to some specialists, also favour mirroring with the main glider. To be continued...

In any case, the main glider should be "killed" by stalling it: either you pull in the brakes with several wraps, or the rear risers. This should be done symmetrically, so that the glider does not start rotating. You can also pull the whole glider in towards you. This was not necessary in the case of the Austrian pilot; there was almost nothing left to stall/pull in...



	X 100	X 115	X 220
Weight Eigengewicht	0,98 kg	1,2 kg	2,27 kg
Area Fläche	28,5m ²	36,2 m ²	64,7 m ²
Maximum payload Maximale Anhängelast	100kg	115 kg	220 kg
Packing volume Packvolumen	2380cm ³	3850cm ³	8700 cm ³
Panel Bahnen	12	20	28
Total length Gesamtlänge	5,8m	6,2m	7,10 m
Water repellent Wasserabweisend 	✓	✓	✓
Certification No. Zulassungsnummer	LTF EP 187.2017	EN/LTF EP 153.2016	EN / LTF EP 298.2020

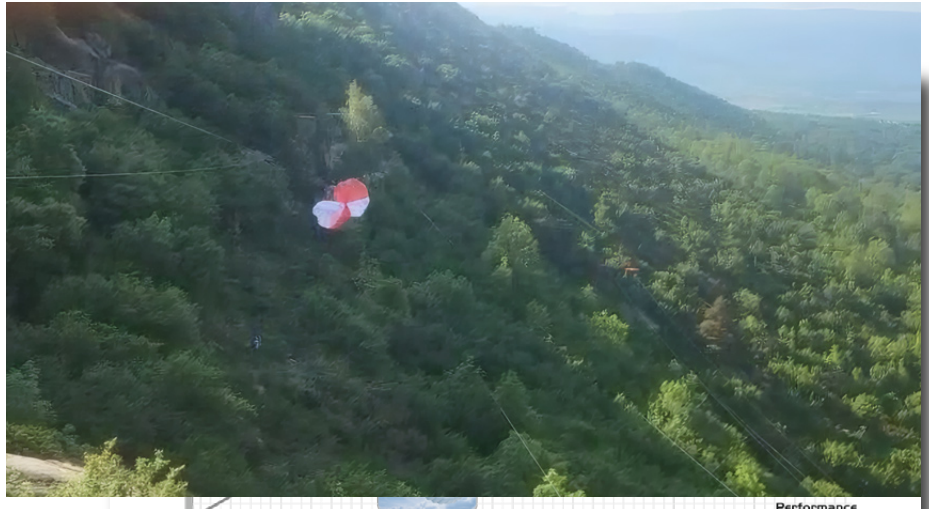
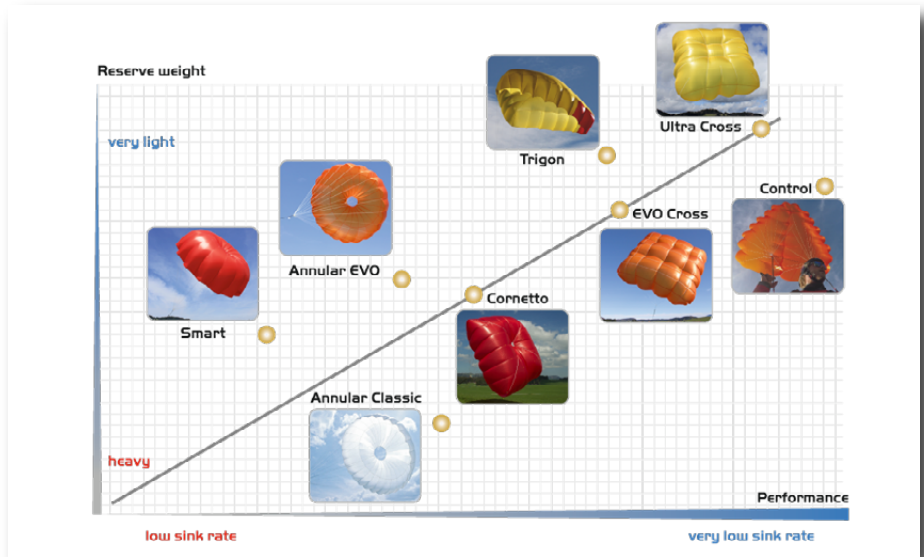
#BEEQJIS

Let's take advantage of this news item to briefly recall the various types of reserves available: classic round, more complex round, square, triangular, steerable rogallo... We will cover the topic of "reserves" in depth in an upcoming issue. One of the manufacturers with the widest choice is Independence, see the table of all their models on the right.

As is often the case, each model is a compromise between several factors, such as weight, packed volume, price, opening speed, descent stability, and sink rate, but also the ease or complexity of packing, which should ideally take place every three months to gain a few precious moments on opening. A reserve that is very complex to pack, such as a steerable rogallo, encourages this regularity less.

Perhaps it is even worth packing one's brand-new, factory-delivered reserve oneself before first use.

In very rare cases, there can be unpleasant surprises. One of the pilots from the Appel d'Air club in the Pyrénées-Orientales had simulated an opening of his brand-new reserve, a Supair Shine S, by throwing it under a zip line. Very surprising (screenshot on the right): during factory packing, the central line had not been correctly positioned, but instead ran over the canopy. In a real opening, the pilot would have suffered a significantly higher sink rate. We readily admit that this is an extremely rare and isolated case, but perhaps it should encourage systematic self-packing at the time of purchase, regardless of brand. This way, the pilot also gets to know their gear better!



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#rescue

In addition to the reserves mentioned in the Independence table, there are also special shapes such as this square but steerable reserve ([Charly-Finsterwalder](#))

However, it must be noted that most manufacturers offer above all modern square reserves, but without the possibility of steering them. This is no doubt one of the best compromises.

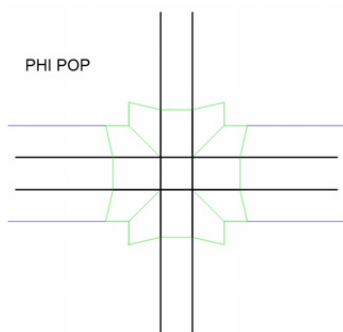
Bottom left, as an example, the Octagon 2 from Niviuk, on the right the Angel Square from Ozone.



#rescue

In recent issues, we had pointed out the importance of certification tests for reserve parachutes, in particular the opening time and the shock resistance on opening: the reserve must withstand an opening at maximum load, at 144 km/h, corresponding to a free fall of 4 to 6 seconds. In the case of the Austrian pilot, this was clearly an important criterion...

Let's note a new construction feature on the Pop reserve from Phi: 4 lines pass over the top surface and come back out on the other side, a way of increasing strength while ensuring very light weight...🪂



#1-2026

#homologation

Loadtests parachutes phi
Voler Info Free Aero

Regarder sur YouTube

Load tests in the Pop model range from Phi. It can of course happen during development that a rescue parachute fails the load test. In this case, design changes (not necessarily increasing weight) make it possible to increase the tear resistance. If the subtitles do not start in the correct language, please select it in the YouTube interface.

#load test parachute

In the last issue, we showed tests of the sink rate of rescue parachutes (as a reminder, link on the right). Here now is a typical load test for a paragliding rescue. One option is the drop from the Kochertal bridge (180 m high). The Deutscher Hängegleiterverband (DHV) has purchased the meadow below in order to be able to carry out these drops. The rescue is deployed at maximum load upon reaching a fall speed of 144 km/h (this is determined below the bridge by the length of the suspension line). The same parachute must withstand this twice in a row without damage. In the other option, the drop from a helicopter, the helicopter tries to fly at exactly this speed. However, turbulence and pendulum movements are added there, potentially causing a higher load. In both cases, air density is not taken into account. The test samples therefore have a harder time in cold winter air!

Windsriders.fr

Mountain&Flight

Ethic and awesome

Reversible Jackets,
Lady, Hybrid, Thermik Light,
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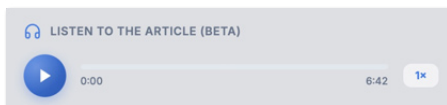
- Paragliding

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BECOME
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#flymaster live ds

Flymaster is an instrument manufacturer very committed to tracking. For a very long time, the Portuguese company has built an efficient tracking system via terrestrial mobile networks. Many Flymaster models contain an eSIM and constantly transmit their position to the Flymaster server, which relays it to the Puretrack server, for example. GSM tracking is a paid option (less than €5 per month), but it is a more reliable and consistent way of staying connected to the web servers than relying on FLARM positions being relayed by FLARM antennas at airfields.

Flymaster has tracked numerous paragliding competitions, including a large part of the Red Bull X-Alps.

One of the instruments also used in high-level competition is the Flymaster Live DS. It is equipped with an eSIM, but also with a passive FLARM module, which can even be "upgraded" to active FLARM, allowing other FLARM aircraft to be seen. This "FLARM-Aware" option costs €50 (lifetime), and is unlocked after purchase by entering a code into the instrument. Thus, the instrument also displays other aircraft equipped with FLARM, at least gliders, airplanes, helicopters...



#instruments

The instrument is also ADS-L ready. The Flymaster GSM tracking system was improved in 2025: Flymaster GSM+FLARM devices relay information from other Flymaster instruments to each other via FLARM, then to the ground GSM stations, see diagram on the right. Thus, pilots who are neither seen by a ground FLARM station nor connected via GSM to the servers remain visible on Flymaster livetracking (and connected networks such as Puretrack).

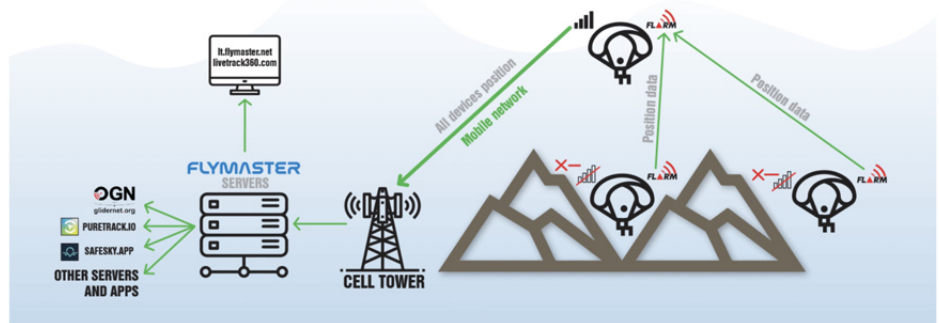
This principle of "pilot-to-pilot" instrument communication is comparable to the technological basis of the FANET system, set up by Skytraxx more than ten years ago: all FANET instruments inform each other of their position, altitude, climb rate, constantly visible on each pilot's screen. Except that here at Flymaster, it is mainly for internet tracking and not for paraglider pilots' visibility to each other.

FLYMASTER NOT FANET

This is its biggest drawback in our opinion: the Flymaster does not speak FANET. This means that the onboard FLARM anti-collision system works perfectly for collision avoidance, but to see other paraglider pilots who are only equipped with FANET, things become a bit more complicated. Until ADS-L is well established and widespread, FANET remains the only way to communicate with most other paraglider pilots equipped with XC Tracer, Skytraxx, and other instruments, directly, immediately, without delay caused by an internet connection. Moreover, FANET instruments also display values from FANET weather stations, which are very numerous, especially in the German-speaking Alps. The owner of the Live DS therefore cannot be seen by other Skytraxx- and XC Tracer-type instruments, nor see their altitude and climb rate. Yet this is one of the most interesting FANET functions when flying in a group: seeing at what altitude a given pilot is, at what distance, with what climb or sink rate? One therefore misses out on this "collective intelligence flying" experience.

DUAL SCREEN

Aside from this drawback, the Flymaster DS is among the best high-end instruments. The dual-screen idea is brilliant: a color screen (640x480) on the left, a grayscale one on the right (320x240). Both are easily readable in bright sunlight, as they are reflective. The color screen is mainly used for mapping (terrain, airspace, common thermals (taken from the KK7 database)). The grayscale screen is mainly used to display flight parameters. The purpose of this split into two screens: the flight information on the right-hand screen is very easily identified and understood, even out of the corner of the eye. The color screen is rather intended for longer analysis of topographic mapping, airspace...



#instruments

All screens can be configured via the PC/Mac software, and widgets can be freely placed and resized to the pilot's taste. The basic configuration is already very good. The Flymaster Live DS also contains an accelerometer and a magnetometer, but it does not offer full integration of these sensors into the vario's algorithms, which may explain a very slightly lower sensitivity compared to other high-end varios, but in practice this is not a shortcoming.

To find the last thermal again, a ball in the compass symbolizes its direction and distance.

The Flymaster Live DS shines with an impressive number of functions useful for competition. This is indeed the DNA of this instrument, although it is also perfectly suited to "simple" cross-country flying.

It also handles airspace very well, displaying it on the map both in top-down view and lateral cross-section. It of course also offers alerts when the pilot risks entering it.

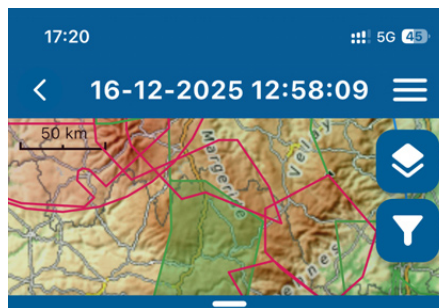
The KK7 thermal display is a very good aid, especially at sites that are little known or unknown, where the display of the region's "usual" thermals makes it easier to latch on.

The screens are not "touchscreens", but the instrument is made easy to use thanks to multiple buttons and a scroll wheel. Moreover, many settings can be made via the Flymaster Link app for Android and iOS, connected via Bluetooth. There, one can choose the airspace and alarm settings, and can also download all flights in IGC format, define waypoints, load tasks for a competition...

The description of the very comprehensive competition functions would go beyond the scope of this article. For classic individual cross-country use, one might possibly criticize the automatic shortening of waypoint names into not-very-explicit character strings in the lists.

In conclusion, this is an instrument right at the top of the podium, on every level, including price: around €1280. It suits both the cross-country pilot and the competitor. The information provided by the two screens beats that of all other instruments on the market.

<http://www.flymaster.net> 



Zone: ● Class D
 Floor: FL145 (4420 m)
 Ceiling: FL195 (5944 m)

CTA MARSEILLE 7 (CTA13507)

Zone: ● Class D
 Floor: FL145 (4420 m)
 Ceiling: FL195 (5944 m)

CTA MONTPELLIER (CTA34001)

Zone: ● Class D
 Floor: FL115 (3505 m)
 Ceiling: FL145 (4420 m)

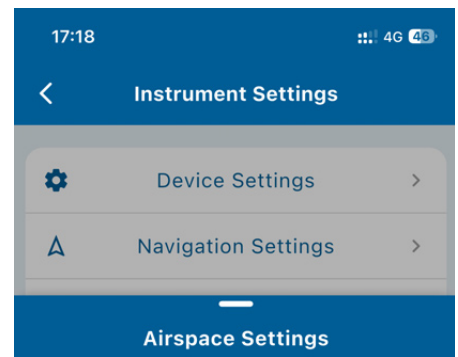
CTA PROVENCE (CTA13001)

Zone: ● Class D
 Floor: FL115 (3505 m)
 Ceiling: FL145 (4420 m)

CTA PYRENEES 1 (CTA47941)

Zone: ● Class D
 Floor: FL115 (3505 m)
 Ceiling: FL145 (4420 m)

CTA RHONE 1 Atis(127.925)



Distance To CTR

Minimum horizontal distance from airspace before a warning is triggered.

2000 m

Altitude To CTR

Minimum vertical distance from airspace before a warning is triggered.

200 m

Enable Airspaces

Enables all the Airspaces functions, including warnings and map layer representations.



Margin Above

Airspaces within this vertical margin above your current altitude are ignored.

0 m

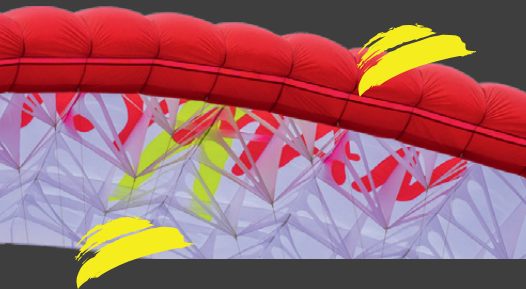
Ignore Above

Airspaces above this absolute altitude are ignored; no alerts or map

0 m



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#therm'up

THE THERM'UP

We've already talked about this and are still in the process of testing it. However, it's not yet possible to provide, as promised, a conclusion.

The basic idea behind the Therm'Up is to detect thermal updrafts within a radius of more than 200 m, precisely by detecting the higher particle density in the air of a thermal.

The problem is that this apparently requires a very precise adjustment based on the strength of the updrafts forecast for the day.

We did indeed notice that as the device approached a thermal, its behavior changed, but it wasn't yet possible to actually use this with our prototype. We're now on the fourth prototype version, which has been lent to us, and will very quickly be able to validate (or invalidate) the concept. To be continued...

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

#instruments


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

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

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

<https://www.nanovario.at/>

More and more very small and ultra-light variors are being offered. We have all of them on test and will deliver our conclusions soon. In the meantime, a quick overview of the devices in question:

On the right in the middle, the brand-new Storm vario, made in France by students from Grenoble. (€49, 28g).

On the right, the Skybean (€99), which has been around for years. Here a special "wood" version (25g).

Top right, the Austrian Nano-vario. 23 x 23 x 11 mm, 9 grams... You almost risk losing it by inhaling it. It looks very "classy" in its metal housing. The price: €129.

Top middle, the NanoV4 (15g, €49) and the Femto (6g!, €69) from French manufacturer Variup.

Top left: a Stodeus Ultrabip. Its weight of approx. 30 grams hides an unsuspected number of functions: solar, GPS, accelerometer, gyroscope, announcements via natural voice, Bluetooth (smartphone connection), IGC, KML... So only the price of €299 might stand in the way of using it as a "hike & fly navigation hub". Stodeus also offers the miniBip V2, simpler, same dimensions, 24g, €59.99... 🐘

#mini-varios

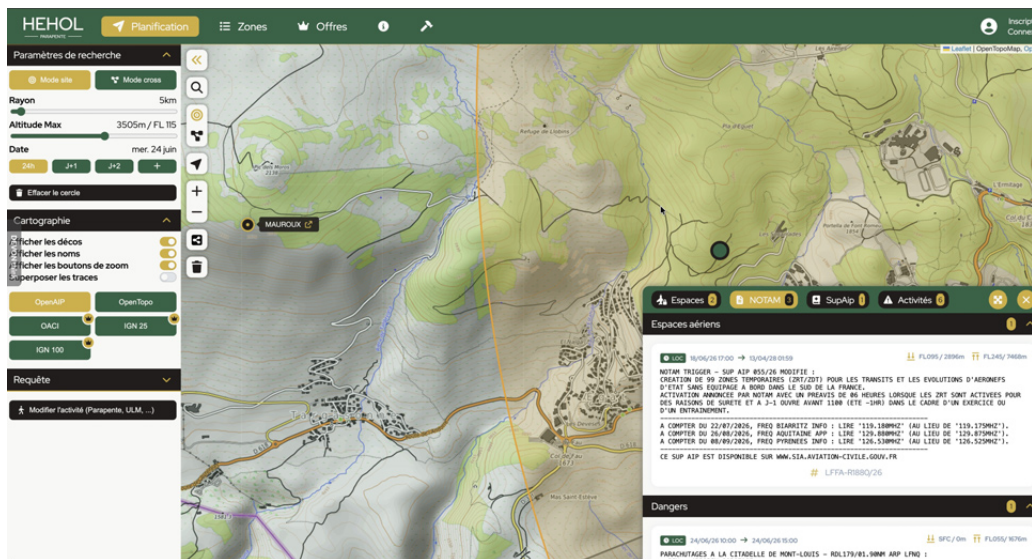

<https://stormvario.fr/>

<https://skybean.eu/>



E D E N ⁸

Like No Other



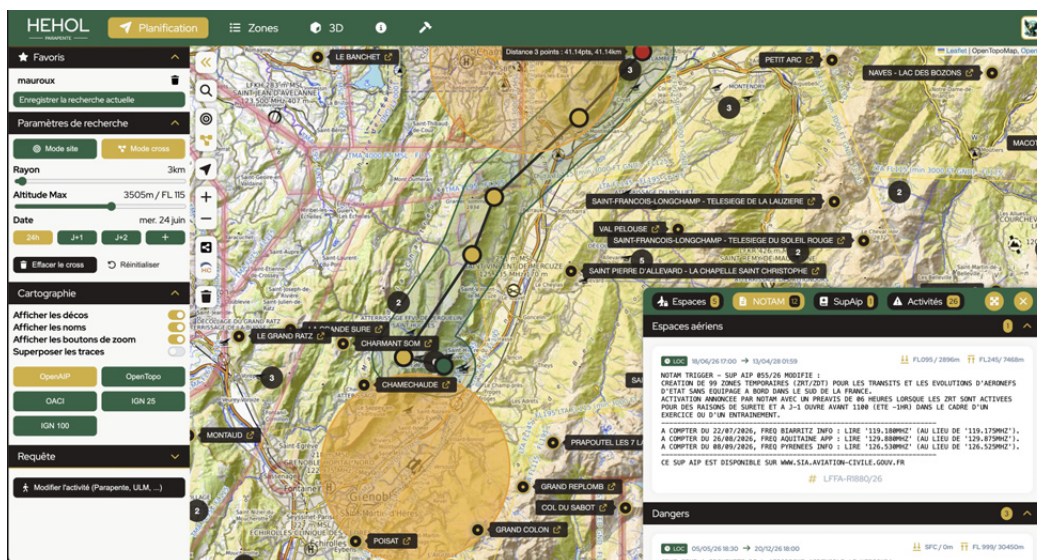
#hehol web service

For pilots flying in France, for example in July when the Tour de France takes place, it's very interesting to know, in real time, all the NOTAMs concerning temporary restricted zones, in addition to the permanent airspaces. Theo Depresle built this web service on the Freemium principle: most of the functions are free, but some extra ones, like cross-country flight planning or the display of ICAO maps, are paid, at €25 per year. The "local site" mode is already very informative, with a topographic map background, the names of the sites, and all the current NOTAMs for that site.

With this genuinely recommendable subscription, you can plan cross-country flights and have displayed, on a strip of a few kilometers (adjustable) around the planned track, and up to a freely chosen altitude, the restrictions you'll encounter. With the paid mode, it's also possible, among other things, to visualize airspaces in 3D, to generate a QR code to quickly share a task in XCTrack, and to export a complete task compatible with PureTrack, SeeYou and XCTrack.

For the moment, the service is limited to France and the interface is in French only.

<http://www.hehol.fr>



EN/LTF A

KOYOT 6

Designed *for learning*

Step into the exciting world of paragliding with the Koyot 6, the next evolution of our school wing: more stable and more accessible than ever.



Pitaya

Guava



Mispel

Blueberry



Sizes

20 / 22 / 24
26 / 28 / 30



PIVIUK

EN/LTF A

KOYOT 6 P

The lightest *way to begin*

Designed to help you start and progress in paragliding with total confidence, the Koyot 6 P will also be by your side in your first hike and fly experiences.



Gecko



Tiger



Sizes

20 / 22 / 24
26 / 28



PIVIUK SERIES

#parakite

#rent toys

Rent your beach toy! Excellent idea. The company LocaDune rents equipment for the duration of a stay at the Dune du Pyla.

The problem: to avoid damaging their usual equipment on the sand, pilots often come to the Dune with outdated and heavily aged high-category wings, bought for next to nothing.

As a reminder, old EN-C and EN-D wings are often very worn and unsellable, and therefore cheap, compared with intermediate wings that often still hold their value well.

But this is dangerous. A pilot who is not used to an EN-C or EN-D can easily suffer a very serious accident, even at the dune.

Locawing.fr, a company specialising in the daily rental of paragliders in the Alps, is now launching LocaDune.fr at the Dune du Pyla.

You can rent, for example, a Niviuk Ikuma 2 in new condition for €80 per day. The wings are serviced, inspected every day, and insured.

LocaDune also rents parakites, for example a Level Wings Fuze for €100 per day. For parakite rentals, however, the company remains very responsible and requires a hands-on briefing during which the pilot must still show that he is capable of flying a parakite.

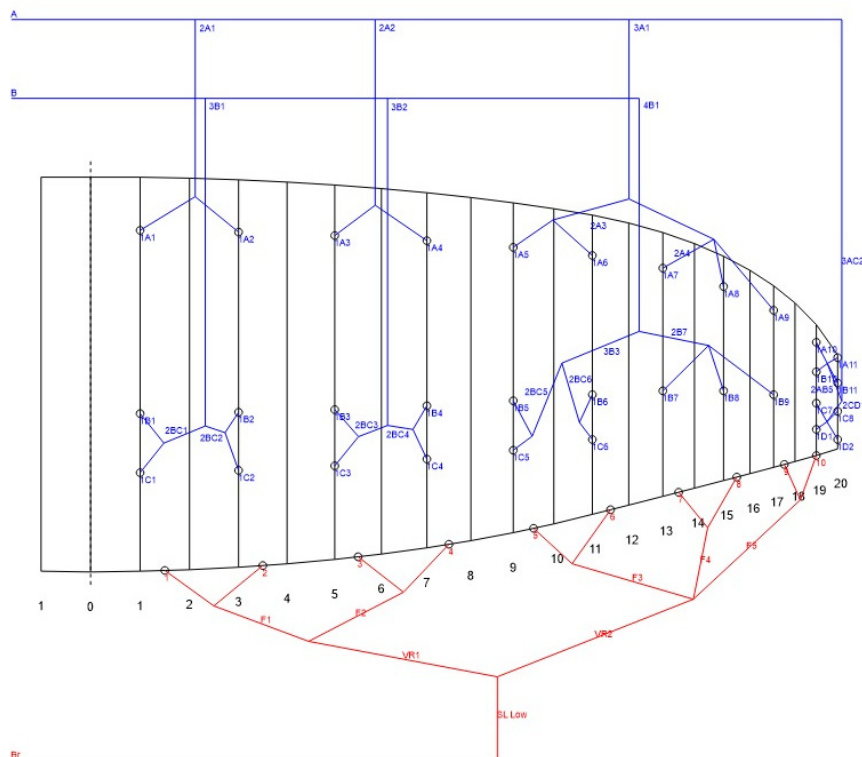
That is reasonable, since parakites allow flying in much higher wind speeds, and are therefore also more accident-prone in the event of a piloting error... 🙅



Photo: Level Wings

#parakite

#parakite 2-liner phi rowdy



The Phi brand is launching its first parakite, and it is based on a less common system: it is a two-liner.

Of course, one of the advantages is obvious: with 2 lines, line drag is automatically much lower, an advantage for gaining high speeds.

According to Hannes Papesh as well as test pilot Mike Küng, it apparently behaves very soundly and does not suffer from collapses. We are impatient to test it. Mike Küng is already having a lot of fun with it, as can be seen in the video (next page), where the wing stays compact apart from a tiny bit at the stabilo. There is undeniably speed there! The wind is visibly quite strong, it does not necessarily allow all the interesting manoeuvres to be tried, but the Rowdy moves along well...



#parakite

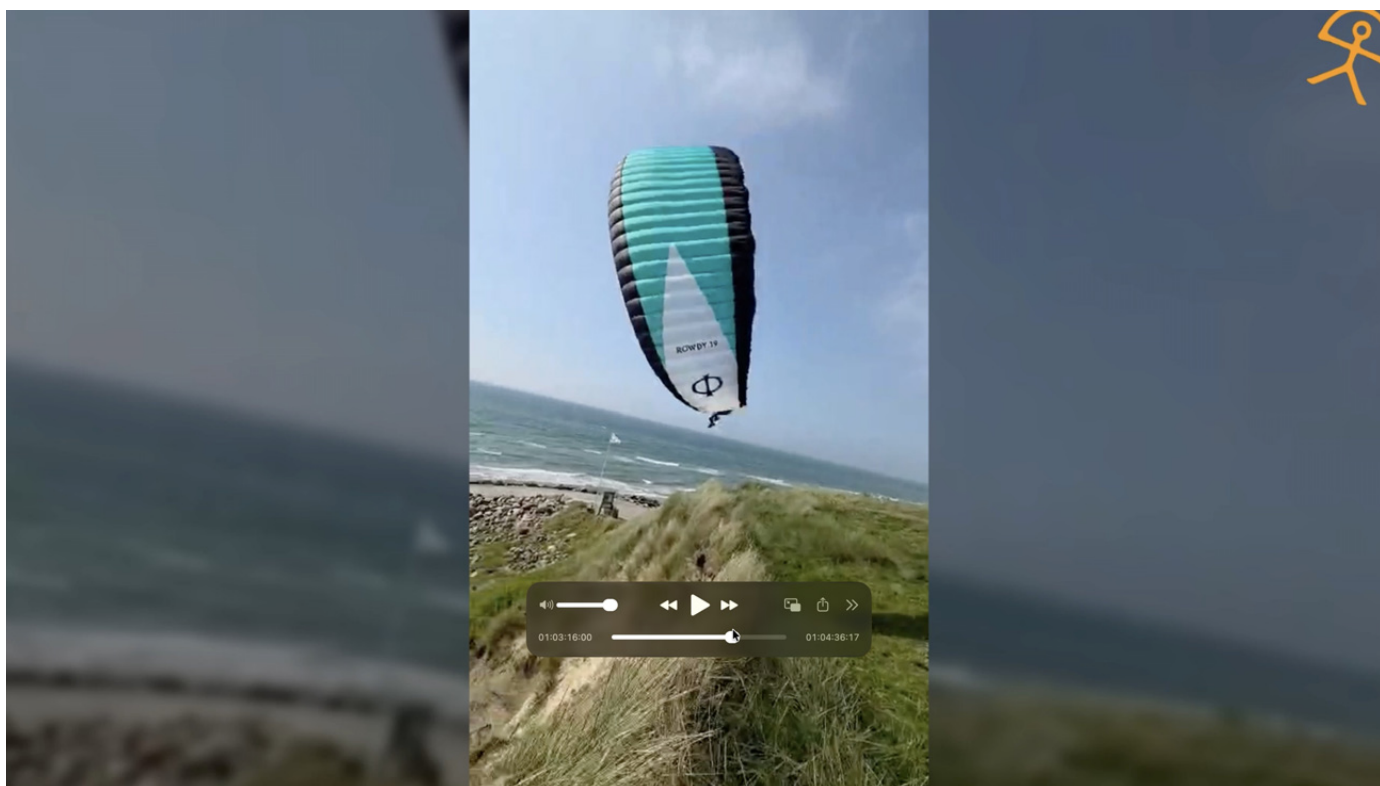
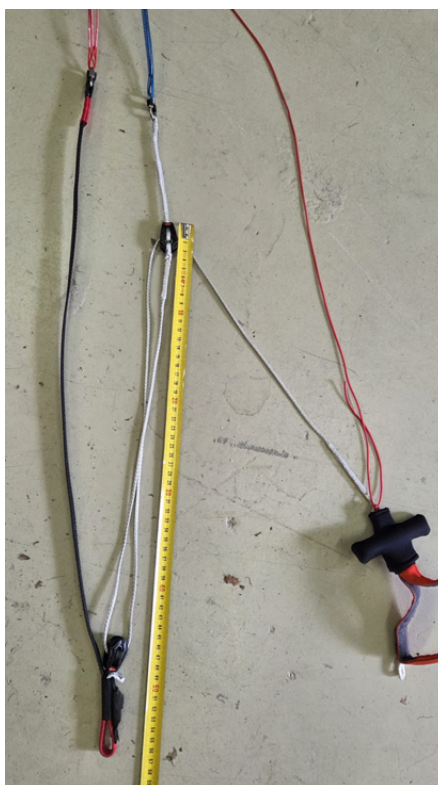


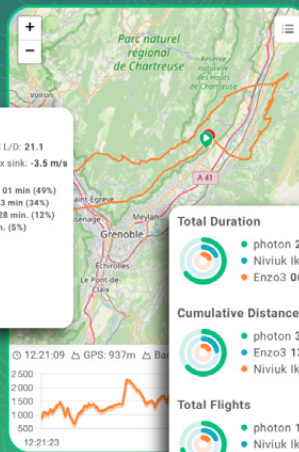
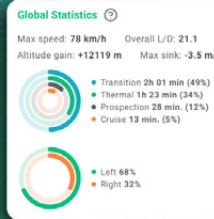
Image on the left, the riser of the Rowdy parakite, on the right a riser of a classic parakite. The Rowdy simply has no "B"...



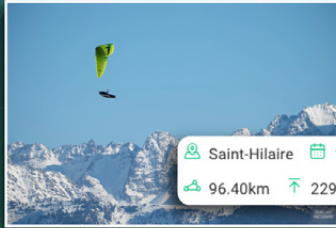
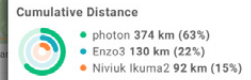
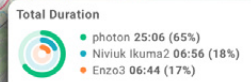


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stodeus.com



#parakite



#parakite: upcoming reviews

In the next issue, we will present in detail some very convincing parakite models, including the Level Wings Fuze, the Dudek Touch and the Dunerider Hopper...

Pioneer 4

HIGH-LEVEL A WITH B-UPGRADE

The Pioneer 4 stands for the High-Level A segment: lots of performance, generous safety reserves and precise, balanced handling.

The special feature:
With the Speed Limiter, which can be installed or removed in a few simple steps, the accelerator travel can be adjusted.
With Speed Limiter, the setup remains clearly A-oriented.
Without Speed Limiter, the Pioneer 4 unfolds noticeably more speed and dynamism in accelerated flight – positioning itself as a basic intermediate in EN/LTF B.

Thus, the Pioneer 4 combines two setups in one wing:

- A-setup for safe entry and comfortable flight feel
- B-setup for more performance, when the pilot is ready for the next step.

**PIONEER 4.
FLY EN A.
THEN UNLOCK EN B.**

www.independence.aero



Photo: Stefan Kurrle




independence
paragliding

IMPRINT

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Reports : Valentin Burkhardt, Arthur Burkhardt, Claytone Carpe

Proof-reader : Judith Mole except for "takeoff 2026" "#1 2026" and "#2 2026"

Testpilots: Philippe Lami, Pascal Kreyder, Stefan Ungemach, Valentin Burkhardt, Arthur Burkhardt

Graphic Design : Sascha Burkhardt

Programmation IOS : Hartwig Wiesmann, Skywind

Programmation Android : Stéphane Nicole www.ppgps.info

Magazine voler.info

Mentions légales :

Editeur et Directeur de la publication

Sascha Burkhardt c/o Hassler

Etmattenstr. 22

D-79112 Freiburg

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