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WORLDWIDE PARAGLIDING AND PARAMOTORING MAGAZINE. FOR FREE.

Photo: Markus Gründhammer

#takeoff 2026

#takeoff 2026

Markus Gründhammer in self-portrait with a Pioneer 4 from Independence above the late autumn fogs...

Numerous pilots flee winter at least temporarily to the seaside... The new parakite wings are perfect toys there...

Here the Touch from Dudek, one of the most interesting wings in this category (see page 6).

The "Catch" harness is specially designed for parakite.

#takeoff 2026

Foto: Matt Johnston, Speedriding aboce Glacier du Géant (Mont-Blanc)

https://www.instagram.com/mattsgram92/

#content

As so often, Markus Gründhammer plays photogenically above the clouds of the Stubaital...

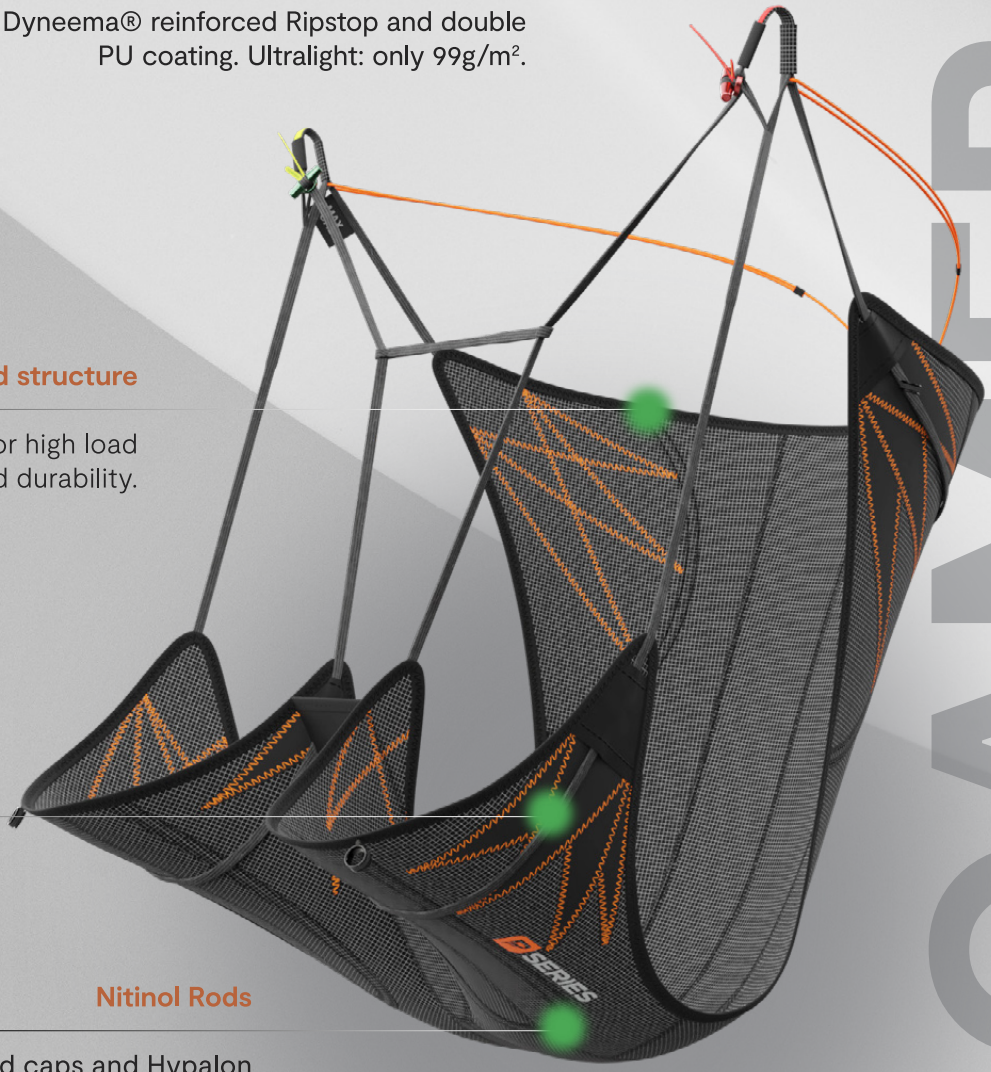
#shot

Where *ultralight* meets strength.

ROAMER 2 P

100D Fabric

with Dyneema® reinforced Ripstop and double PU coating. Ultralight: only 99g/m².



Dyneema cord structure

with Dacron reinforcement for high load strength and durability.

Zigzag Stitching

for load share distribution and comfort.

Nitinol Rods

with protected end caps and Hypalon reinforcement at the rod end seam.

AIVIUK | SERIES

#review

quick review dudek #touch 18

It inflates noticeably faster than a Moustache and rises quicker. That's probably why it overshoots more often too. It's easy to stop the overshoot unless you're caught in strong wind... if it overshoots, it can float back in front like a parakite, but it can also collapse like a paraglider, that happens every time it overshoots too far. That quite surprised me. Don't ask me why. Dudek paramotor wings with reflex profile are known for their excellent collapse stability, I hope that's also true for the Touch, I don't have enough flights on it to judge.

The Touch has very very nice handling, you feel well connected to it and quickly at home. It's the most pronounced karting feeling I've had so far. It's agile and reactive without rolling too much or being nervous. It responds surprisingly well to weight shift and brakes. The stall point is hard and predictable, slow speed is also very good. It handles quite some brake pressure before stalling. One of the easiest parakites to fly, you get used to it very quickly and smile while flying... The one I tried didn't dive as much as a Moustache and was also noticeably slower. But it had trim knots on the B-lines, that clearly slowed it down.

Beni Kälin

For many articles, especially on mini-wings and parakites, we receive valuable input from Beni Kälin, director of the SpeedflyingSchool in Switzerland. https://speedflyingschool.com/

10 kg under minimum #takeoff weight

Not spectacular, but revealing: Cédric Nieddu from the private testing institute Certika shows here that at least under this model, going 10 kg under the minimum weight has no negative influence, including on the deep stall behavior...

woody valley denali 2

The new Woody Valley Denali 2 is available. Big novelty: You can open/close the leg loops (attached to the main carabiner), more comfortable to put on. The material has been reworked (very sturdy but less "crackly").

Also, you can order a back protector that pre-fills itself already at takeoff.

3 sizes, 298 g the smallest, so not among the lightest. Protector: universal size, 240 g.

The opening system is not new, many harnesses offer this comfort. However, this opening lacks an effective anti-fall-out safety compared to harnesses that you must imperatively enter through the leg loops.

SUPAIR

EARLY 2026

SAVAGE 2

Cross | Hike & Fly | Ultralight

The SAVAGE² is a 2.5-line EN-C ultralight wing designed for experienced pilots who seek to combine performance, handling pleasure, and lightness. Built for cross-country and demanding hike & fly adventures, it's your ideal companion for long-distance flights, competitions, and bivouac expeditions.

Sangria | Azur | Fire

Starting at 2.99 kg

XS	S	MS	M	ML
55-75	65-85	73-93	83-103	90-115

SUPAIR - info@supair.com - +334 50 45 75 29

#gear.

#aerogear for insta360

The Aero Gear accessory allows fixing an Insta360 camera on the helmet, thanks to a much wider Velcro base than comparable products. That's an advantage on helmets with irregular surfaces, and also safety to not lose the camera too easily. Because, as the manufacturer rightly says: better not to attach a safety leash. If a line gets seriously caught in the camera, better that it rips off completely and gets lost, rather than causing a serious accident.
(€39,90)

Screenshot of an interesting video (see next page) taken with an Insta360 fixed on the pilot's helmet thanks to the AeroGear device. Here, the paraglider pilot drops a wingsuit pilot above the Mediterranean at Öludeniz.

Thanks to the wide base, the mount adapts very well to different helmet shapes. The hold is good, but allows ripping off if, despite the anti-snag shape, a line gets tangled https://www.aerogear.eu

#windsriders for two-liners

Windsriders offers gloves specially adapted for 2-liner wings (piloting with B-handles), but which of course also work very well on C-handles as well as any other paraglider, leaving some freedom to the fingers for preparing the wing on the ground. An integrated over-mitt (stored in a compartment) increases insulation if needed.
http://www.windsriders.fr

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

independence
paragliding

Photo: Stefan Kurrle

Photos: Collection Jeroen Dekkers

#drone #towing

In China, a young start-up is building drone systems to tow paragliders from almost any flat area. Paragliding pilot Jeroen Dekkers travelled there to explore the possibilities, learn the system and prepare an import to Europe. Here is his story:

In July 2025, an Instagram reel caught my attention: a paraglider pilot being towed upwards behind a drone. My first impression was that it was a well-made AI video. After watching it several times, it turned out not to be a deepfake. With my roots in the gliding world, I realised that this could be an interesting addition for paragliding.
The manufacturer was quickly identified: a Chinese start-up founded in 2024. The manufacturer answered questions about the technical specifications of this machine, which is almost ready for production. In return, I dived into European regulations and sent information back to China.
One thing became clear immediately: buying this drone and using it is not an immediate option. There are obstacles to overcome.

To update myself on drone laws and regulations, I obtained the Dutch drone licence for the open category.

The Sky-Tow 201 used to tow paragliders cannot be flown with this licence: it weighs 68 kg, 41 kg plus two batteries of 13.5 kg each. I will complete the other licences later...

In September 2025, at the Coupe Icare where I was running the DaVinci Gliders stand, a team from Blue Wing Technology, together with the owner Wallace Wang, was present to introduce their products in Europe. We agreed on a visit to China to see the system in operation.

At the end of December 2025, my wife and I travelled to Shenzhen, a city of almost 20 million inhabitants and the technological centre of China.

The hypermodern city is overflowing with technical progress and economic prosperity, as evidenced by the number of luxury vehicles: more than 50,000 millionaires live in Shenzhen.

4 propellers on a horizontal plane, 2 for traction on a vertical plane. A complex system, but relatively easy to use. The Sky-Tow 201 weighs 68 kg: 41 kg plus two 13.5 kg batteries.
Vmax: 54 km/h, Vzmax: 8 m/s
http://www.i-uas.com/#products

Drone-towed, from 0 to 1,050 m... The possibilities offered by this system are numerous. Major advantages: during towing, the direction of the towed pilot can be freely adapted to the wind direction, and the line tension is constant and smooth.

The flying site is located in Dongguan, a smaller neighbouring city of Shenzhen with a population of 7,000,000, where the factories producing the technical products developed in Shenzhen are located.

The field is in the middle of a leisure area, where drones, paragliders, paramotors and delta trikes are allowed to fly up to 500 m. At 1,000 m, commercial aircraft pass continuously to and from destinations all over the world. We constantly see solo and tandem pilots being towed by drones. More than 3,500 successful tows have already been carried out here.

On the side of the field, engineers are testing Blue Wing Technology drones, both in flight and with their tow line attached to a mast to collect duration and power data. Dozens of battery sets are ready, and fast chargers ensure an almost unlimited availability of the required energy.
Highly motivated engineers work here; laptops are continuously connected to the drones to analyse data after high-cycle use. With onboard cameras, test flights are recorded from start-up to landing.

THE COMPANY AND THE DRONES

In total, 20 full-time employees work at Blue Wing Technology, including 15 university-trained engineers.

Wallace, the owner, is fully aware that his developments are closely scrutinised and that any technical error could have disastrous consequences for users as well as for the future of the company.

Working full-time here is different from back home; employees often work long days on their own initiative and sometimes even work through the night to solve problems. Wallace told us that he sometimes sends them home or even bans them from the office when they overdo it.

Currently there are two models: the Sky-Tow 101 developed for solo pilots (<80 kg) and the Sky-Tow 201 for tandems (160 kg). This is a bit tight for the European and American markets, but this issue has already been solved with a prototype designed for a take-off weight of up to 225 kg. In addition, developments are underway to tow gliders.

Photos: Collection Jeroen Dekkers

Over two days, I received solid training in piloting and towing. The entire process was discussed in detail. We were the first non-Chinese participants there. I wrote an English procedure for the take-off sequence so that it can be used by future pilots from other continents.

TAKE-OFF

Then came the first tow to 300 metres. I am clipped in and ready; the line is tensioned by the drone as it moves forward slowly, then the horizontal propellers start. Very gradually, the tension on the tow line increases, then I receive the signal to inflate the wing. I take a few steps towards the drone, which reacts instantly by moving forward to keep the line tension constant. Once the wing is well above me, I give the start signal. The drone switches to towing mode and after three steps I am airborne. The drone tows me smoothly upwards; the sensation is completely different from anything I had previously experienced with a winch.

The line tension is incredibly constant, and the force is perfectly aligned with the flight path. The drone flies 70 metres ahead of me and 20 metres higher. I climb at 3.3 m/sec. The safety officer announces over the radio: “one hundred!”

The rear camera of the drone is pointed at me; I am under constant surveillance. The safety officer instructs me: “steer a little to the right”. I thought I was flying perfectly behind the drone, but apparently a small correction was needed.

Suddenly I feel myself entering a thermal bubble and hear the vario climbing. The drone reacts immediately by increasing power on all four rotors.

Later, when reviewing the data, it becomes clear that a change of just 1 degree in the tow line angle is enough for the drone to react instantly in order to maintain exactly the same forward angle.
“Two hundred!” A smile appears on my face. Shortly afterwards: “three hundred!”. The climb slows and I receive the command “Release!”, then I release and turn left.

Below me, a lake; around it, impressive urbanisation and skyscrapers.
After landing, I have only one expression when asked about my experience:
“very, very, very smooth!”
Several more tow cycles follow, including one to 500 m at more than 6 m/sec, and the smoothness of the entire process continues to surprise me every time.

4 propellers on a horizontal plane, 2 for traction on a vertical plane. A system that is complex in itself, but relatively easy to use.

In this video, the author of this report takes off, towed by a drone in China. He is now in charge of marketing this system in Europe.

DRONE TOWING, THE ADVANTAGES

- No fixed release point; within a radius of more than 1,000 m, everything is accessible.
- A grassy field with a diameter of 70 metres and no high obstacles is sufficient for a safe launch.
- Guaranteed release altitude.
- Easier to learn than winch towing; the entire process is even more controlled and predictable.
- No off-axis traction, which is better for the equipment.
- The technology assists the operator and intervenes or releases automatically in emergency situations.
- Can be used to give beginners their first flight experiences.
- The drone pilot does not need paragliding experience; the process is partly automated, and most Blue Wing drone operators are not paraglider pilots.
- Mobility: Sky-Tow drones fold up, fit into a van and are operational within 10 minutes.
- No need to reposition the winch when wind direction changes.

DISADVANTAGES

- A mandatory drone licence
- Depending on the country, very restrictive or even prohibitive regulations for drones of this size
- The need for an electrical power source
- A purchase price likely to be between €25,000 and €50,000 once commercially available.

Jeroen Dekkers provides information on Blue Wing Technology products in Europe.

Paragliding & Paramotor Trading B.V.
info@paragliding-shop.nl

More advanced, *just as comfortable and lightweight*

NEW

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
- CROSS-COUNTRY
- FOAM PROTECTION
- INFLATABLE PROTECTION

Sizes S / M / L

ARROW P 2

AIVIUK | P SERIES

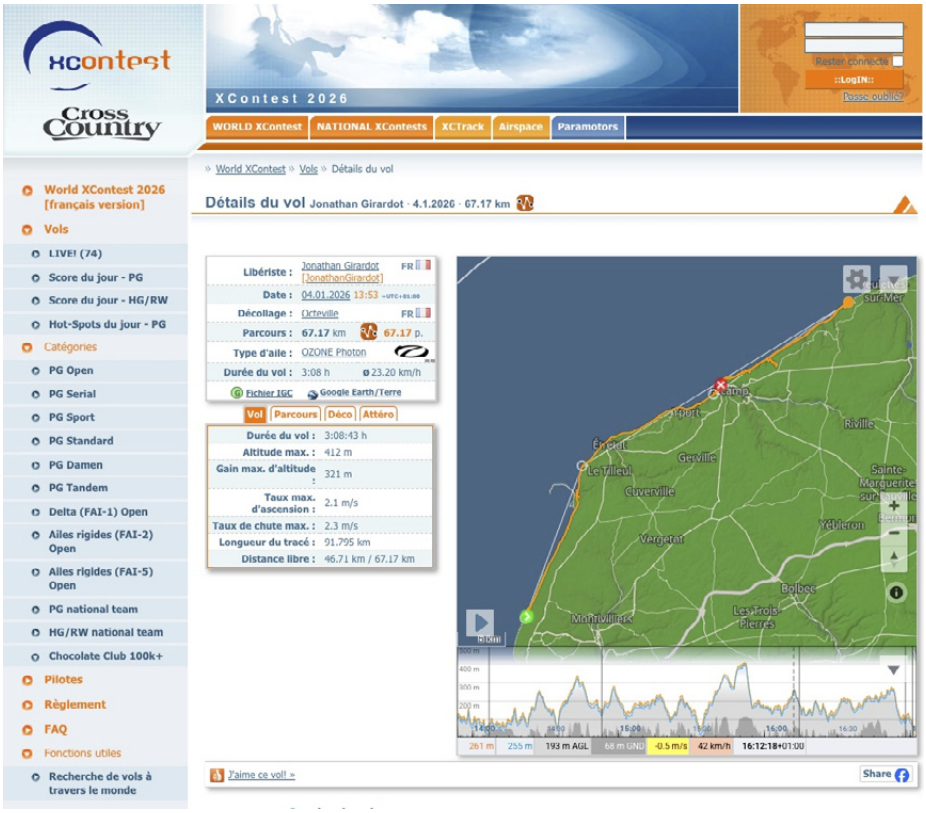
#winterthermals above the sea

January 4, 2026, 1:53 pm: Jonathan Girardot takes off for a flight along the cliffs of Normandy. The air temperature is 4°C, the sea temperature 9°C. A difference that is not enough to generate sufficiently strong pure thermals, but combined with dynamic lift caused by a 15–25 km/h north-northwesterly wind, the lift carries high and allows a 67 km coastal flight.
The thermal component is clearly visible in the shape of the clouds, and the turbulence at a site that is usually very laminar is another indication of the presence of real thermals.

A magnificent winter flight...

.Lowest point: the channel of the port of Fécamp. A successful gamble, with constant attention to emergency landing options (wind slightly oriented to the north, therefore 180° and a return to the southern shore if necessary).

A magnificent region... moreover, it allowed a 67 km flight in 3 hours, at the beginning of January. Alt max: 412 m ...



A small collapse, even though, given the wind direction and the topography of the cliff at this spot, there should normally be no orographic turbulence.

TKOF SKI

Photo : Jerome Maupoint

A brief reminder of a recurring topic: taking off on skis is actually quite easy... as long as you prepare for some surprising differences...

During the winter holidays, many pilots are tempted to take off on skis. At many sites, there is no other option, as the takeoff areas can only be reached using drag lifts

SURPRISING OBSERVATIONS

However, those trying it for the first time are often surprised by the differences between a foot launch and a ski launch. There are several reasons for this.

On the one hand, when taking off on skis, katabatic wind often flows down along snow-covered slopes, meaning you usually have a tailwind.

Photo : Jerome Maupoint

MAESTRO 3

The next step

PHI-AIR.COM

Photo: Sascha Burkhardt

Make sure that your bindings are securely fastened before taking off and that they fit properly. A ski which comes off in the air can be very dangerous for the skiers below you. Ideal: A ski binding with a leash.

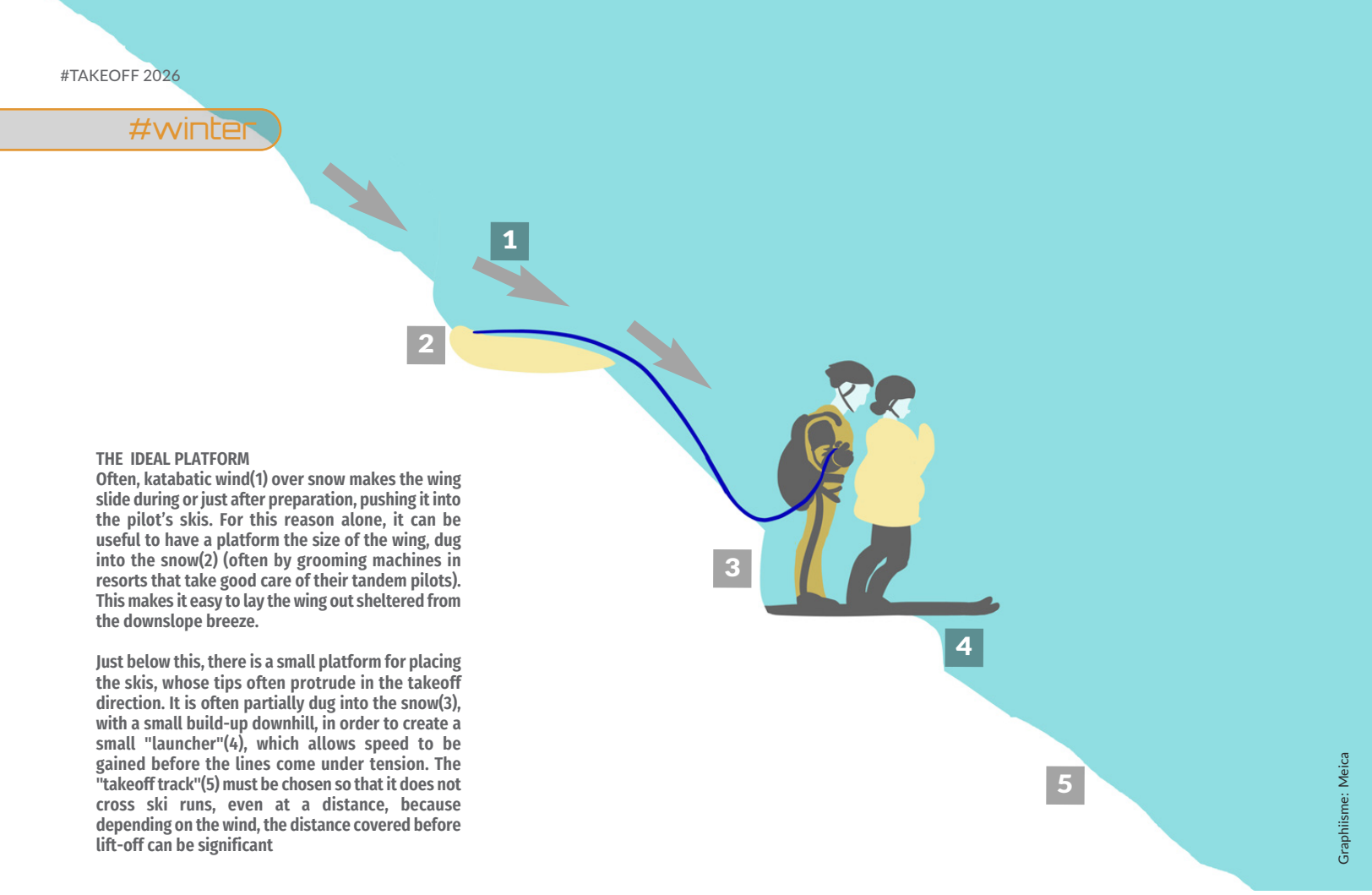
Photo : Jerome Maupoint

This is not a problem in itself, since on skis we can very easily build up speed, and keep it for a long time, with little effort. But you have to be prepared for this different feeling: during inflation on skis, you hardly feel the wing, and it often takes time to come up.
With a headwind, it is even worse: you get pushed backwards, because with skis on your feet it is very difficult to resist the wind with a forward impulse.

Ideally, whether with tailwind or headwind, you have a small "launcher", a slightly steeper section just below the takeoff platform, allowing you to build a bit of speed before the lines come under tension.

This ideal takeoff also allows you to start with the skis already aligned in the takeoff direction. Of course, it is possible to prepare with the skis parallel to the slope and then inflate the wing by turning the skis downhill, but the risk of an asymmetric rise is higher, and the initial impulse is sometimes insufficient.

Despite the completely different nature of paragliders 25 years ago, the behaviour and potential issues have hardly changed today.
Below, a wing hesitating to come up straight: a lack of initial impulse remains a timeless problem.



Graphiisme: Meica

THE IDEAL PLATFORM
Often, katabatic wind(1) over snow makes the wing slide during or just after preparation, pushing it into the pilot's skis. For this reason alone, it can be useful to have a platform the size of the wing, dug into the snow(2) (often by grooming machines in resorts that take good care of their tandem pilots). This makes it easy to lay the wing out sheltered from the downslope breeze.

Just below this, there is a small platform for placing the skis, whose tips often protrude in the takeoff direction. It is often partially dug into the snow(3), with a small build-up downhill, in order to create a small "launcher"(4), which allows speed to be gained before the lines come under tension. The "takeoff track"(5) must be chosen so that it does not cross ski runs, even at a distance, because depending on the wind, the distance covered before lift-off can be significant

In the top drawing, you can see a sketch of an optimal take-off platform, as professional tandem pilots in ski resorts prepare them in order to be able to fly all day long "without bugs".
This ideal take-off also makes it possible to start with the skis already aligned in the take-off direction. Of course, it is possible to prepare with the skis parallel to the slope and then inflate the wing by turning the skis downhill, but the risk of an asymmetric rise is higher, and the initial launch impulse is sometimes insufficient.

If you find this type of take-off for your solo launches as well, the technique is quickly mastered...
If you take off from a place without a prepared platform, choose the flattest possible area on which to lay out the wing, with a sufficiently steep slope below. During inflation, do not be surprised at first by the lack of pressure in the risers, often due to a lower initial speed compared to a foot launch.

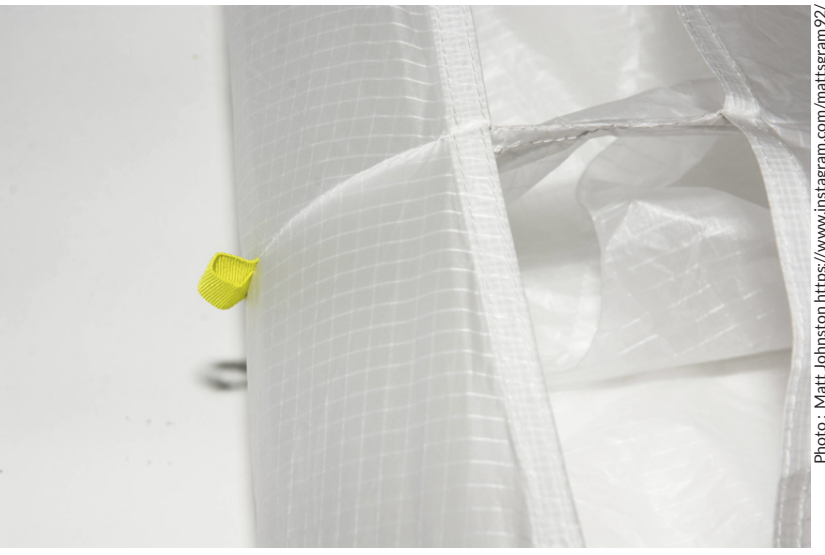
Afterwards, the speed increases very quickly, and it is often necessary to apply a lot of brake so that the wing, once it has "woken up", does not overshoot.
With a tailwind, the take-off distance and the required speed can be significant...

Photo : Jerome Maupoint

IF THE WING SLIDES

If you don't have a sufficiently horizontal area to lay the wing out on the snow without it sliding, there are several options.
You can partially bury the leading edge in the snow; this prevents the wing from sliding, as long as you don't pull too hard on the lines during preparation.
Some Skyman wings are equipped with a small hook, stored in a pouch, which holds the leading edge on slippery grass or on snow when it is slightly buried.
Other wings, such as the Bantam from Nova, feature a loop on the top surface, allowing wooden pegs to be attached.
Such pegs are also available in paragliding shops. If the wing does not have a loop on the top surface, the device can be attached to an A-line, but this is less practical.
4 pegs, distributed along the span of the leading edge, are normally sufficient.

Photos : Sascha Burkhardt



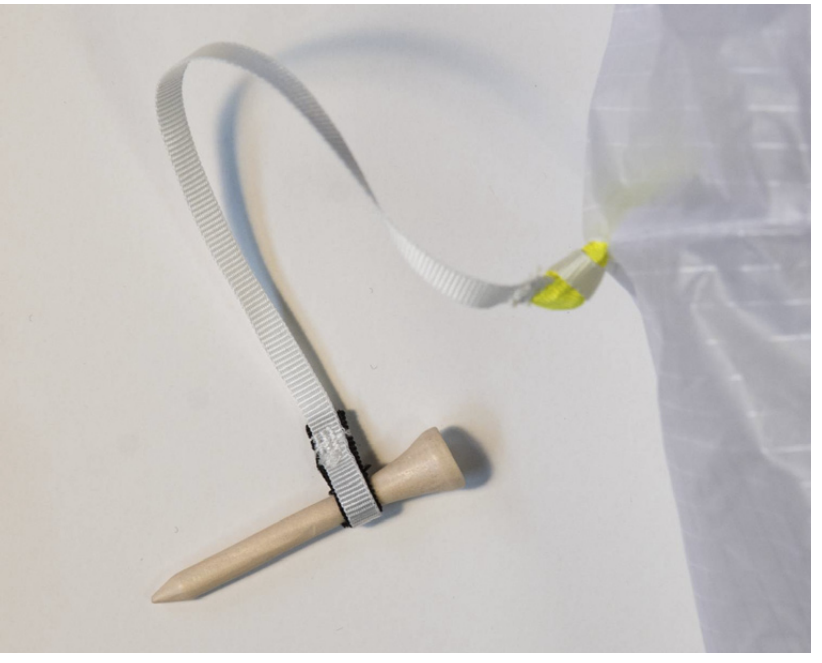


Photo : Matt Johnston https://www.instagram.com/mattsgram92/

At takeoff, especially during preparation and in case of a mistake, as well as during landing, skis are extremely dangerous for cutting lines: you must stop abruptly before the wing falls back or onto the pilot, especially since the katabatic wind will quickly blow it into the pilot's skis. Photos: Jérôme Maupoint

SKI AND PPG

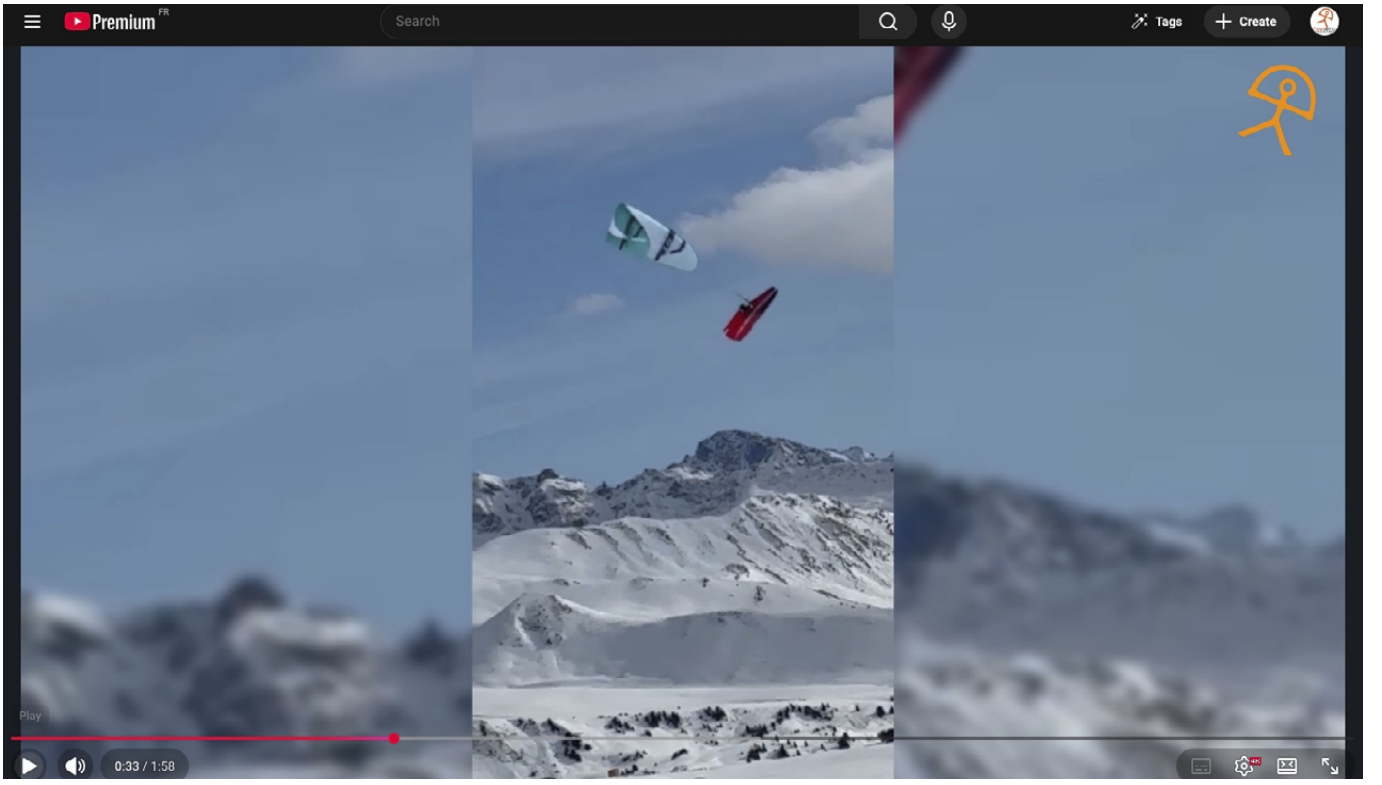
Taking off with skis on your feet is quite easy on a paramotor. You just need to step back slightly toward the trailing edge so you can build up a bit of speed before the lines come under tension. Then it's even easier than on grass: apply throttle and patiently wait for the lift to build...

It feels very much like taking off on a trike...

When taking off with skis on your feet, the extra inertia in the turns can be a surprise.

Skis under a Kangook trike: taking off is easy. For a trike pilot, there are no surprises.

#trends 2026



#trend? parakite & submarine

They may seem contradictory, but in reality a submarine harness, with its extremely low drag, also clearly has its place under a parakite, as shown here under a Bandit.

Beni Kälin confirms that the sink rate is significantly reduced, and therefore the parakite's performance is clearly higher.

The sequence at 0:33 also shows that the pilot's low drag increases pitch amplitudes.

BANDIT

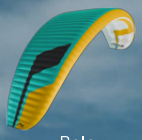
SIZE	10	13	16	19	22
COLOR	CERAMIC/WHITE				
AREA (FLAT)	10M²	13M²	16M²	19M²	22,5M²
NR CELLS	63	63	63	63	63
WINGSPAN (FLAT)	803CM	936CM	1054CM	1148CM	1259CM
MAX CHORD	150CM	167CM	182CM	199CM	215CM
AR (FLAT)	6,5	6,8	7	7	7,1
AREA (PROJECTED)	8,25M²	10,72M²	13,19M²	15,67M²	18,55M²
GLIDER WEIGHT	2,3KG	3,0KG	3,5KG	3,9KG	4,4KG

EN 926-1

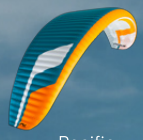
JESTER

Pure parakite. *Maximum fun.*

The Jester is our first parakite. Designed utilising on our experience with paragliders and developing kite wings for third parties, it offers a radically fun flying experience. It combines speed, agility and control for dynamic descents and proximity flying.



Belo



Pacific

Brick

Sizes

14 / 16 / 18
21 / 24

KOOPER P

All *in one*

From 2.09 kg

The Kooper P is Niviuk's most versatile reversible harness. Its modular structure allows for various configurations. Ideal for hike & fly, thermalling and soaring, it can also be used for speed flying. Light, ergonomic, compact and safe, it is equipped with an airbag and an integrated emergency parachute compartment.

Sizes

S / M / L

NIVIUK | P SERIES

Photo : Antoine Boisselier /Ozone

#sublite available

The Sublite from Ozone is available in size M, with sizes S and L expected to follow during January.

The chassis technology, made of Dyneema lines stitched onto fabric – a technique already used on the F*Race – allows a weight of just 1.55 kg in size M.

However, the back protection remains relatively thin, yet it is still certified with a 42 G peak.

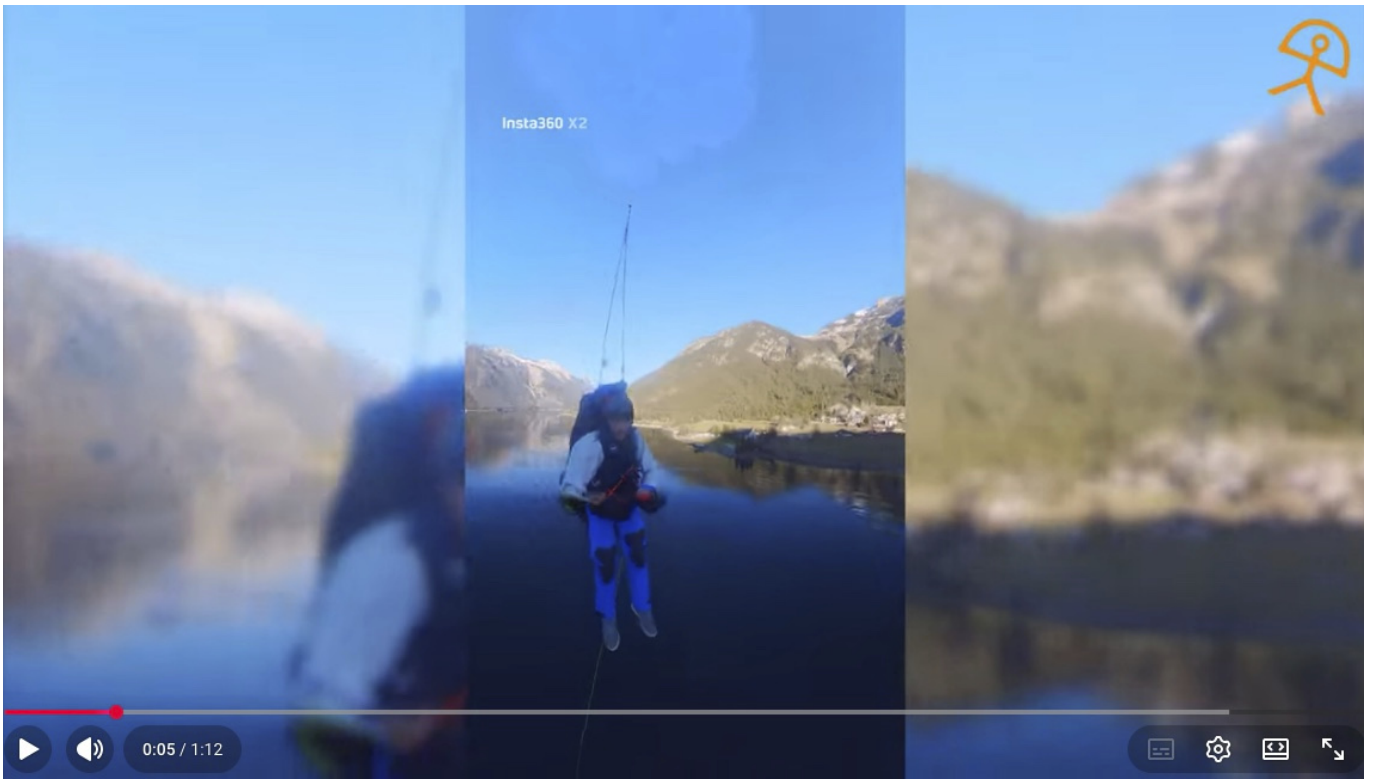
The cockpit is aerodynamically well positioned, yet remains accessible, unlike the first versions of the full-size Submarine. The length of the fin is more moderate.

#trend2026

Photo : Stefan Kurrle/Independence

Independence Pioneer 4

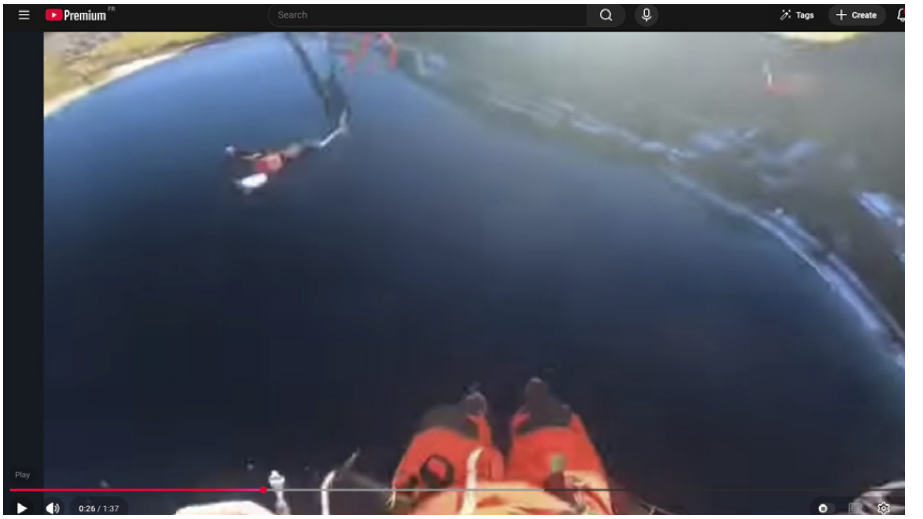
The Pioneer 4 from Independence has arrived.
It is a highly progressive paraglider: with the limited accelerator system, it is certified EN A, but with a quick adjustment, the accelerated speed increases and the wing is classified as EN B. The pilot can therefore switch "wings" in just a few quick moves, once ready to step up a class.
This system is far more than a simple accelerator shortcut: the wing had to be designed and certified twice to cover both configurations!



#phi secours test taux de chute

Fun fact: for the certification of a reserve parachute, the sink rate is not measured using flight instruments, but with a rustic yet very reliable method.
The pilot deploys the reserve, releases the paraglider, and falls into a lake. Attached to the pilot is a 30 m rope with a weight.
The time is measured (number of video frames) between the moment the weight touches the water surface and the moment the pilot himself hits the water. This time is divided by 30 m, giving the average sink rate over those 30 m.

Here, the Phi team is taking part in the EN test of the brand's new Pop / Pop UL reserve parachute. A special feature is a new construction technique that reduces the number of lines to 12 (+ one central line), compared to 16 to 20 for most other reserve parachutes on the market. The lightest model in the range weighs just 720 g, making it the lightest on the market. An ultralight 610 g version has been built, but it has not yet been decided whether it will actually be commercialised.
There will be at least two different models, each available in four sizes.
Right: Hannes Papesh goes into the water for a good cause.

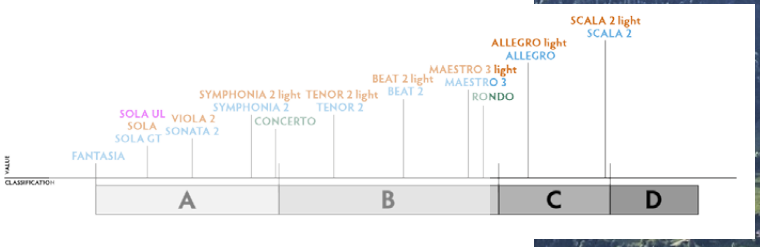


#phi first EN D

The new EN D from Phi does not yet have a name. It is the first wing in this category from the manufacturer, which mainly offers an impressive number of models (7!) in the A and B categories; see the overview of the range below.

Interestingly, the Scala was initially intended to be a D, but during certification it turned out to be a "High EN C".

The new EN D will be lightweight and aimed both at hike & fly pilots and at "classic" cross-country pilots, who are increasingly asking for lighter wings.



#niviuk Koyot 6, 6P

Many pilots started their flying career under a Niviuk Koyot. It has now been released in version 6 (right) and 6P (top, february 2026).

Special feature: during take-off, it is said to be even more damped in pitch, with an even lower tendency to overshoot.

In addition, winglets are now making their appearance: we have already described in detail the advantages of these lateral stabilisers, which induce more stable flight, improve spiral recovery and reduce parasitic roll.

xcontest

World of XC paragliding

Skywalk Mescal 7

The new version of Skywalk's EN A wing, the Mescal, is also being released with winglets.
Photos: Tristan Shu

#takeoff 2026

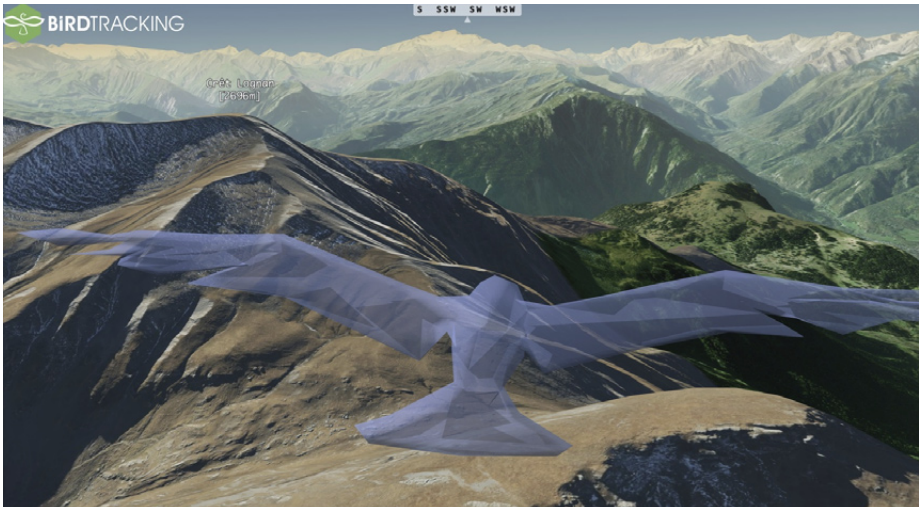
Photos: Tristan Shu/Skywalk

#xc-tracking

sportstracklive &vectorvario

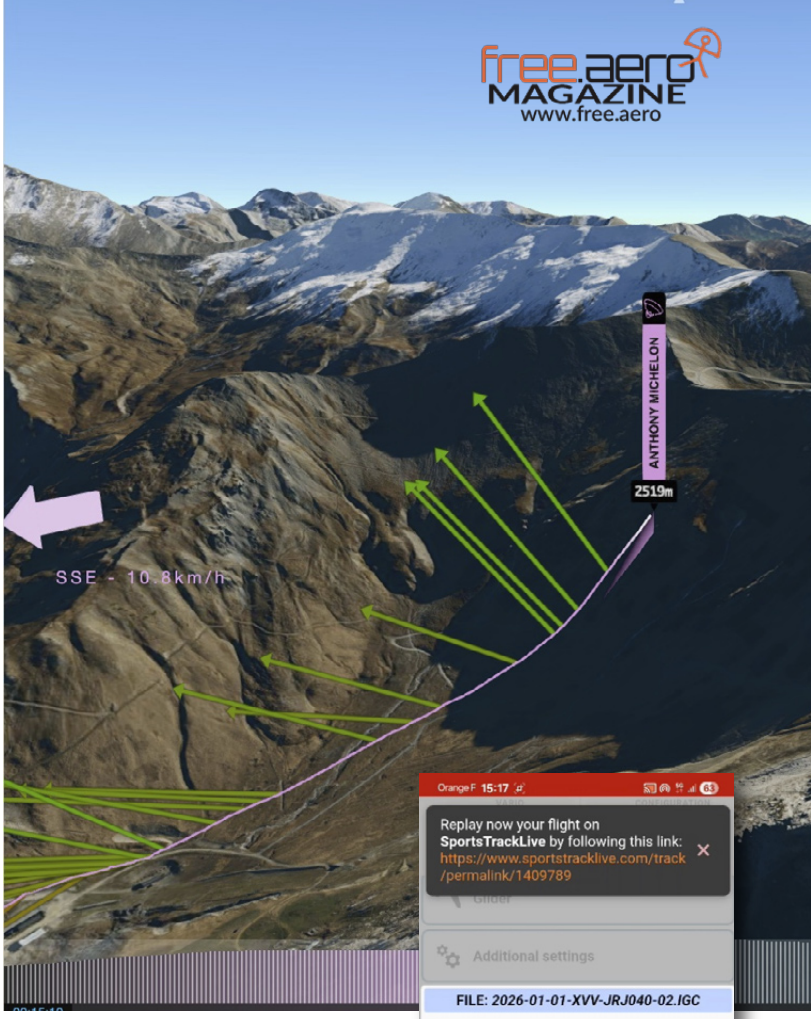
SportsTrackLive is a tool for recording, live transmission and replay of XC flights that is increasingly used worldwide. Visually, it is undoubtedly one of the most successful tools of its kind. We will describe it in detail in one of the upcoming issues.

SportsTrackLive is also used for tracking birds by wildlife professionals!



SportsTrackLive now integrates the display of in-flight wind vectors into the replay. To do this, the pilot can transmit the flight directly to the server from the Vectorvario app. We will describe all this in detail in the next issue, as we are still in the middle of testing this unique instrument, the Vectorvario.

For a better understanding of its usefulness, we will review on the following pages the principles of measuring true airspeed in flight.



AIR SPEED PROBES

The Vectorvario represents a small revolution: for the first time in a very long while, a reliable measurement of true airspeed relative to the air is integrated into a modern, very compact instrument that makes the most of this data. Here is a reminder of the basics (TAS and IAS), which we had explained using the example of two older instruments, including the Compass, which can now only be found on the second-hand market…

Both are real pitot tubes which calculate air speed by measuring the increase in pressure caused by the air flow. They are therefore aeronautical instruments which measure IAS, (Indicated Air Speed).The difference lies in, amongst other things, the number of extra sensors which have been integrated as well as in the processing of the information.

TRUE OR INDICATED SPEED?

Remember: pressure anemometers such as the pitot tube measure speed by measuring the pressure of the air flow. For a paraglider flying hands up, it therefore always shows the same value whether at sea level or above Mont Blanc. Obviously the paraglider will fly faster at the height of Mont Blanc because, in less dense air, you have to go faster to reach the normal pressure against the profile, but the dynamic pressure, in other words the IAS, remains the same. It's the IAS speed which is interesting if you want to compare two wings, even if progression through the air (and over the ground) isn't the same as a function of the altitude.

Photo: Sascha Burkhardt

For orientation in the airflow, Flymaster give a tolerance of +/- 20° - inside these limits, the error is negligible. We noticed in fact that, during our tests, the speed indication seemed very stable and reliable throughout the whole flight, even when the probe was attached to the risers, as on this paramotor.

Instruments with cups or blades like the Skywatch or the Vaavud give the real speed, close to the True Air Speed or TAS: at an altitude of 2000 m, they show 55 km/h instead of 50 km/h for any given paraglider. Their reading is independent of the pressure, because the dynamic pressure of the wind is compensated by the aerodynamic force due to the air flow created by the movement. Therefore the measurement corresponds to the real progression of the paraglider in the air, and approximately to that which can be read on a GPS if there is nil wind.

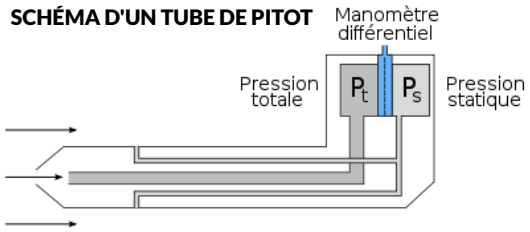
Instruments equipped with pitot probes recalculate from IAS, taking into account the altitude, the same 'true' flying speed (TAS) and allow it to display the two speeds by choosing one, or both at the same time.

Compass Instruments have made, with their C-Probe, an instrument in its own right. Bedecked with sensors, it even includes humidity, roll, pitch and acceleration of the instrument in the calculation, to eliminate any disturbance due to the pilot and air movement.

Flymaster make do with measuring the dynamic pressure (IAS) and acceleration. The manufacturer points out that during a flight at 40 km/h in an air mass at 20° and pressure of 1 013 hPa, the difference between a humidity of 0% and 100% will only change the speed calculated by 0.18 km/h, which is negligible.

But Flymaster also don't measure movements of the instrument nor its position compared to the pilot. The IAS is recalculated in TAS and displayed on the screen of the Flymaster instrument.

SCHÉMA D'UN TUBE DE PITOT



Dessin: Dr. Wessmann

A pitot tube measures the difference between the total pressure in the direction of the flight and the static pressure. This difference corresponds to the dynamic pressure and allows the speed of the flight to be calculated.

$$v = \sqrt{\frac{2(p_t - p_s)}{\rho}}$$

The Flymaster probe is fed by a 1.5 V battery. The cordless instrument communicates with all the recent Flymaster instruments by transmitting to them via RF (not Bluetooth) speed and temperature. It weighs 232 g and costs 150 €.
www.flymaster-avionics.com

The opening on the Flymaster pitot tube.

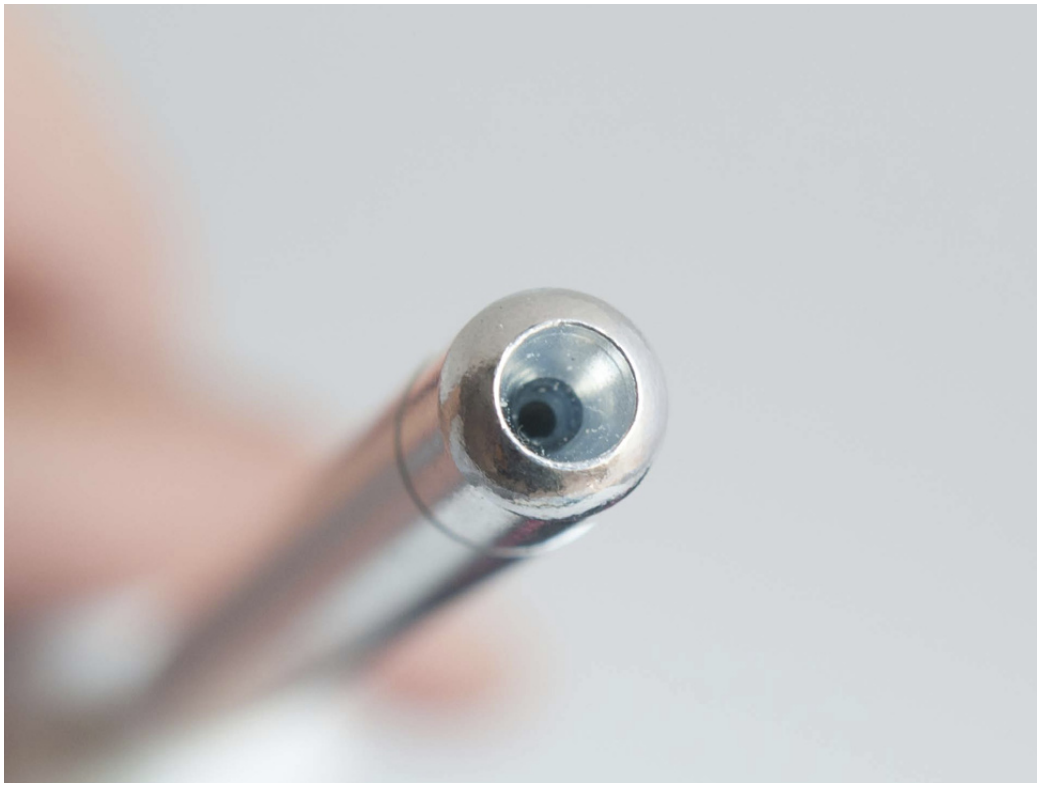


Photo: Sascha Burkhardt

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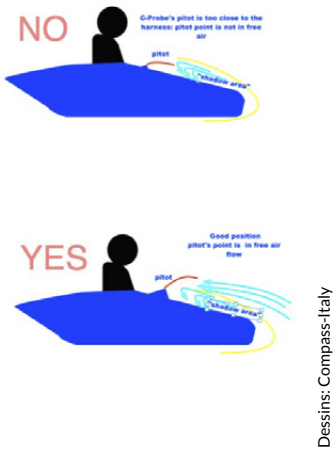

Dessins: Compass-Italy

The now-discontinued Compass C-Pilot system together with the C-Probe was the first instrument to work with a multitude of sensors to properly measure and correct the different airspeeds.
It integrated a complete IMU with gyroscope, accelerometer and magnetometer, as well as a thermometer and a hygrometer.
However, the whole system was heavy and not very practical. The Vectorvario offers even more possibilities, weighs only a few grams and attaches to the riser. This is why we are keen to present it to you very soon in even more detail...

The Vectorvario is produced by a French start-up. The company tests the devices in its own mini wind tunnel, which is also used to accurately calibrate the "pro" version of the instrument.

This version is used by many paraglider manufacturers for the development and fine-tuning of wing prototypes.

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.

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Photo: Stefan Kurrle

#takeoff 2026

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