

Never exceed load limits!

Exceeding the take-off weight limits as given in the technical data of the paraglider („Pilot take-off weight“) increases risk of an incident in case of pilot's error. The smaller is the wing area as compared to take-off weight, the greater the risk – so among the most exposed will be racing paragliders like Snake XX and Hadron XX, as well as Snake and Hadron 1.1.

In years of reflex paragliders' successful development pilots got used to expecting of reflex paragliders high resistance against human-induced errors, including excessive wing loading. Such habits were born in times when typical paramotor wing size for a 130kg take-off weight was the Nucleon with flat surface area of 27 qm. The wing loading in such configuration amounted to 4,8 kg/qm, increased to 5,5 kg in case of 20 kg overload.

With those designs exceeding the maximum take-off weight usually did not create significant troubles.

With time and experience performance of the new designs grew, so that fulfilling wishes of the top pilots became possible as for increasing speed and agility of the paragliders. Such effect is achieved - among others - by decreasing area of the canopy. In result, wing loading of modern high-performance wings like Hadron XX reach 7,5 kg/m², and in case of Snake XX exceed 8 kg/m²! **This is the highest possible, not-to-be-exceeded wing loading.**

With increased wing loading paragliders significantly change their behaviour and any experienced pilot should know that perfectly well. The most dangerous aspect of exceeding the MTOW is the hyperreactivity of the canopy. A clear analogy here can be an automotive one – compare driving a regular car at 120 km/h to a sports one at 180 km/h. In the first one you've got a regular steering wheel, and turning it by 15 cm will bring a correction of your path. In second case similar turn of a small sports steering wheel will send you tumbling out of the road. By the same proportion the smaller is the wing, the faster it flies and its reaction to the same steering input will be way more rapid and dynamic.

CAUTION!!!

Check your actual take-off weight! Some pilots calculate their take-off weight based on the advertised numbers, say paramotor 29 kg + canopy 6 kg + pilot 87 kg = ca. 120 kg. The real take-off weight can be up to 15 kg greater. People forget to include the clothing, instruments, backpacks, car keys, sandwiches, rescue kits etc. Even omitting such obvious things as the fuel or the rescue chute weight can happen!

Good advice: time to time get on a full gear prepared to launch, including the canopy and paramotor, and step on a weighing machine! The result can be a real surprise.

<http://www.dudek.eu/en/safety/nieprzekraczalne-limity-obciazen.html>

Adjusting the hangpoint system in a high-performance canopy!

Experience shows that high-performing canopies like Snake and Hadron are easier to steer with a „low“ or “medium“ hangpoint system.

“High” hangpoints, especially “soft” ones (i.e. not connected to the paramotor mainframe) can, due to their inertia, make the control of an agile canopy significantly harder, while possibility of a quick pilot reaction during dynamic sport flying is a must. Additionally, increased distance to the risers makes it harder to operate and control all the systems.

On the other hand, “high” hangpoints are doing great in recreational flights under such paragliders as Nucleon, Synthesis or Universal. Of course if a pilot is experienced enough to fly advanced wings of the Snake and Hadron class and has no use for dynamic maneuvers at the moment, he can deem the high hangpoints as offering greater stability and comfort when sight-seeing. Nevertheless, even during such flying ensuring quick pilot reactions and effective control of the accessories is vital.

To sum it up: when flying smaller canopies (22qm and less) and bigger aspect ratio (5,9 and above) it is recommended to use „low” or “medium” hangpoint systems (that is up to the shoulders).

<http://www.dudek.eu/en/safety/dobor-wysokosci-podwieszenia-w-skrzydle-wyczynowym.html>

Do not try a spiral with released trimmers!

Fundamentally, executing any dynamic maneuvers creating high loads (spiral, dynamic wingover etc) with opened trimmers **is dangerous!**

Releasing the trimmers shifts the loading center of the canopy towards the leading edge. This rule is valid for all paragliders, but the more reflex traits in a profile, the more radical the effect. In a typical reflex paraglider (Nucleon for example) the load distribution after releasing the trimmers looks like: A row =60%, B=30%, C=5%, D=5%.

Carrying that much load by the A and B rows of reflex paragliders (90% in total) offers us the stability we so much crave. On the other hand, however, when coupled with a dynamic figure like a spiral it can move the load dangerously close to its maximum values.

More on the load distribution in various paragliders at diverse riser configurations you can find here: <http://www.dudek.eu/en/reflex-profile/>

Analogous situation emerges during execution of a spiral or wingovers with big ears pulled. Here again we have the entire load concentrated on reduced wing area and this, coupled with aggressive G-load maneuvers, shifts the singular loads too close to the maximum values again.

<http://www.dudek.eu/en/safety/nie-rob-spirali-przy-otwartych-trymerach.html>

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