

Atterraggio duro - Hard landing!

For the first time in his career Sebastian Kawa damaged a glider in a hard landing. An investigation of the events should help to avoid such events in the future!

"What happened was very surprising to me. For the first time in my career, I damaged a glider on a hard landing. A very unpleasant experience with the new GP14 on the steep slope of Puvallo! The terrain in the Apennines is not exactly inviting for landing in many areas. Almost every suitable, flat area is urbanized, the valleys are V-shaped and in the middle there is a narrow brook. Fields, if available, are on steep slopes. Thus, it is very difficult to find a suitable landing site.

What happened?

About 30 km from the finish line, I was still at high altitude and made the decision not to take any risks and start the engine. It was just a training day, where no points had to be collected. After the start with electric engine some hours ago, still 75% of the electric power was available. I could easily come home with that. I thought about how to use the remaining energy most effectively and turned knob to start the engine. Nothing happened!

I still had enough time. After a short look around, I saw no less than 10 possible landing fields - all in mountainous terrain, all on the steep slope! So I took off my sunglasses and tried to get the engine running. At first I thought I did not have enough energy to extend the pylon and turned off the navigation display. I rebooted the system and tried cranking again. Nothing happened!

My options dwindled ...

After another 15 km, only two suitable fields were in sight. Very steep, but slightly larger than the previous ones. Since the further course of the valley was not visible, I decided to land on one of the two yellow-brown fields next to a farm and a paved road. Unfortunately, it turned out in retrospect that this field was bumpy, which added to the other difficulties!

I've landed on similar steep hills before. On some glider sites such as Jeżów Sudecki (Grunau) or in Bieszczady there are strips with slopes up to 11%. Even with an ASH 25 I landed (in Bieszczady) on a slope as steep as this one in Apennines. However, it was prepared landing site with smooth grass! In Italy the situation was different. The surface of the field was rough and there were trees in the approach sector. In order to land in such a field, you must be approach even with a light glider at a speed of 130 km/h in order to be able to fly uphill parallel to the ground. Fast airplanes need even more speed! I have dumped all water already so I crossed the line of trees with exactly 130 km/h and felt a hard bump just before I expected to fly for a while uphill to loose speed. The plane jumped at a steep angle losing speed almost in seconds.

With no speed it was not possible to change anything in the situation, I saw the treetops below me again. You wait ! The next moment I was back on the ground and sliding several meters on the fuselage after glider lost it's undercarriage. Amazingly no more damages were seen. Later I found out that instrument panel pulled two screws from the floor and belly was cracked. Very little for such landing.

Not recommendable!

My situation was worse. The same moment I hit the ground I felt a strong backache and had big difficulty getting out of the cockpit. I lied down on the wing to ease it off few minutes, a bit of relief occurred, fortunately I was able to move and feel all my limbs. Actually, this action was not right, because in such a situation, I would advise anyone not to move that much – unless you're sure the spine is intact.

I consider it unlucky to hit such an uneven slope what was invisible till last moment. Looking from above waves, if have same colour are indistinguishable. Fortunately, the GP14 is a light and very strong glider, so it helped to get away with only a small damage. Most important finding: even if the engine still worked at the start, it can fail at any time. It was the case with my landing in the Apennines. After the engine cooled, it did not start again because the pylon did not touch the limit switch.

Never rely 100% on the engine! Electric or digital systems fail instantly without any prior signs of wear or malfunction so it would be better to have two sets of electronic gear. We use two loggers. Don't we?"

Happy Landings
Sebastian Kawa

Outlandings in mountainous areas / Outlandings with (turbo) engines - what is important?

After a hard landing in the Apennines Sebastian Kawa worked up his experiences and shared with us!

Decide early and have more options ready

Must land in mountainous terrain, it is usually very fast due to lack of options. Faulty starts of auxiliary engines worsen the situation dramatically. Therefore decide early, because: landing out with engine always need more height than without!

Upslope landings can be trained!

There are gliding schools that fly regularly on places with inclined landing strips. Uphill landing can be trained.

You need more speed!

A gradual reduction of the speed a few meters above the ground, which is often seen on flat airfields, does not work when approaching the steep slope. For pull up, to intercept path parallel to the ground, you have to keep your speed until last moment and flare with more energy to fly about 1m above the ground uphill. *When practicing on moderate uphill strips if you have speed sufficient to hover about 0.5-1m above the ground for about 50-100m, than it is a good approach. We have very often windy conditions so more speed is required also to avoid sudden drop of speed and as a consequence falling dawn from few meters.*

Use the entire length of the field.

The speed reduction when flying uphill is fast. So it is not necessary to be fixed on the lowest meters of the field because it is more dangerous to catch obstacles in the approach than roll on some at the end. In most cases there should be no problem to slow down and stop when going uphill.

Airbrakes - carefully!

Adjust altitude, the point where you want to stop. Then: set the flaps, retract the airbrakes, accelerate - to be able to pull up in front of the rising slope. *Many gliders tend to sink a lot even when the airbrakes are only slightly opened. They loose speed instead of zooming up. With less flap, I would not use L -flaps for such approach as they produce more drag*

than lift, and a higher approach speed, this problem can be avoided ! There are planes, for example PZL 104, which can not flare enough to end parallel to any uphill slope without help of the engine.

Curved landing!

The last part of roll should be used for a 90° turn to avoid rolling back. In the worst case, you would have to remain in the cockpit squeezing wheel brake until help arrives.

Avoid obstacles!

Each approach over obstacles is more demanding than on a flat plane, as the interception angle increases further.

Green in front of brown - and not mixed!

In the mountainous areas it's better to choose GREEN fields. Green means it's re-cultivated at least once a year, and probably neither corn nor other tall plants will grow on it. In addition, in a re-cultivated field, the probability of encountering invisible trenches, hills and stones is reduced. Plowed fields are good too but brownish grass means it was not used for a long time and there are tall weeds.

Rules!

The competition rules should allow for a short test of the engine even if you used it for take-off.

As always with turbo's – fly as without engine!

Even if an engine was used to start, he may well refuse service on the next attempt.

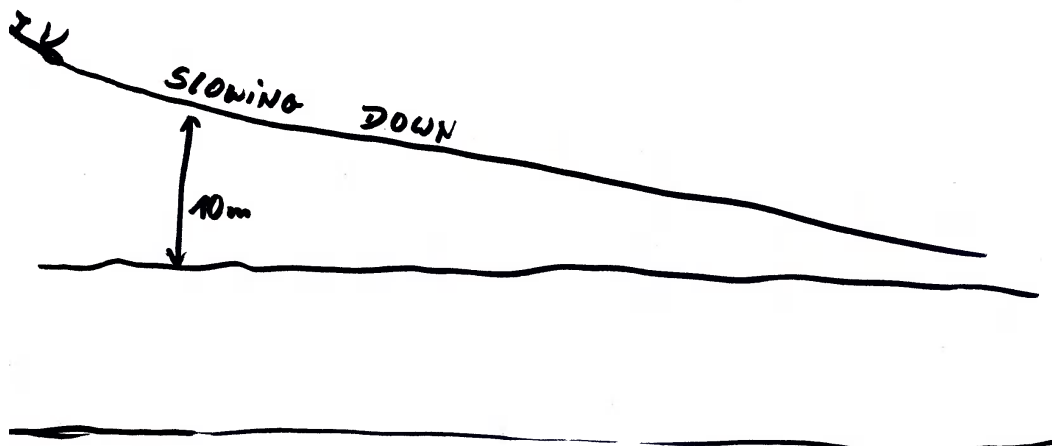
It was the same with my landing in the Apennines. After the engine cooled, it did not start again because the pylon did not touch the limit switch! Never rely 100% on the engine!

Happy Landings
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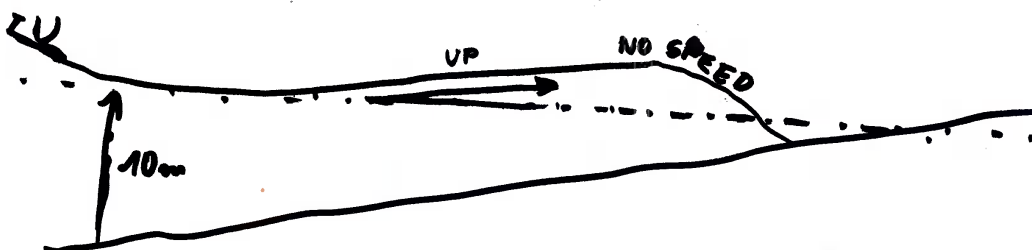
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Normal practice on flat airfield

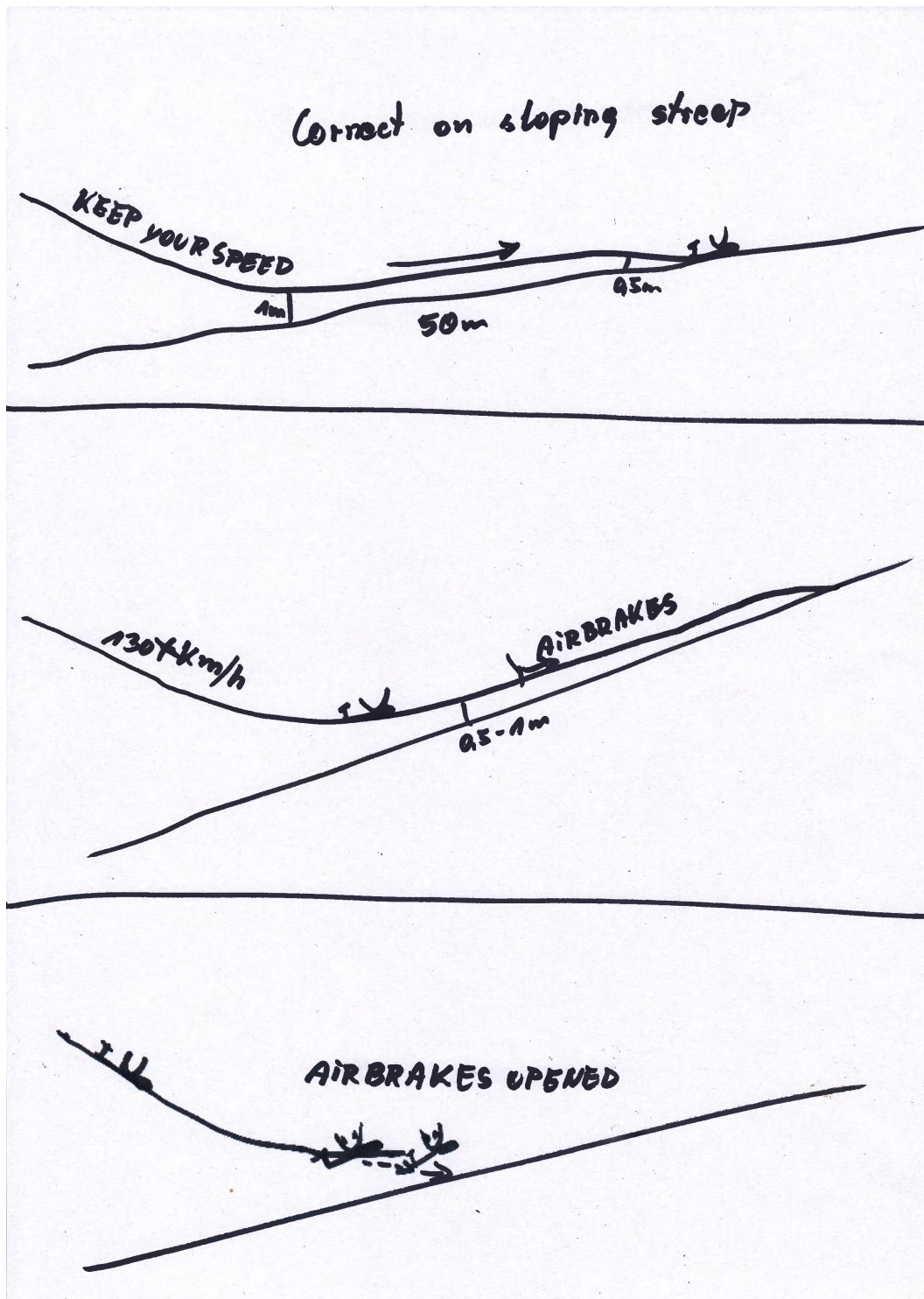


On slopes it does not work



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