

and sudden weather changes while carrying on life...consider that those same events could have dire consequences if airborne.

Get comfortable calling flight service on 800-WX-BRIEF and telling them your name, that you're flying an untrlight from (give your location) at (give them the time) and would like weather and NOTAMS (to make sure there's no new restricted airspace in your area.

Avoid strong winds. If they come up while flying, understand and respect rotor: the turbulent air that swirls downwind of obstructions. It can completely undo the orderly shape of a paraglider.

### PROPerly

The safest way to start your motor is with it on your back. If it's a pull-start, try to get somebody else pull it for you.

If starting it on the ground, check the throttle position at the carburetor and assume the motor will go to full power. Make sure you're holding it by the frame (not the cage).

Never reach back while in flight, the netting is not intended to keep hands out of the prop...only lines. And even that isn't a sure thing.

Be leery of letting go of the brakes when getting into the seat (or any other time), they can get caught in the prop on some machines which could wrap the wing all the way down to the motor.

### Stall

Adding power to a paraglider increases the chances for a stall because of the low thrust line. Rehearse what to do if the wing goes back: "hands up, power down."

Another complication of power is that most motors want to turn in a certain direction due to torque. It is risky to use brakes to counteract this turn. A better practice is to plan turns in the same direction as torque. Turning hard against the direction the motor naturally pulls can lead to a spin.



### Site

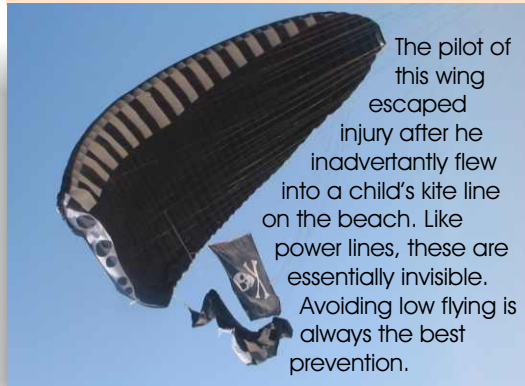
Pick a wide open site with no close obstructions. Avoid fences and trees in the departure/arrival path and be aware of rotor.

### Towing

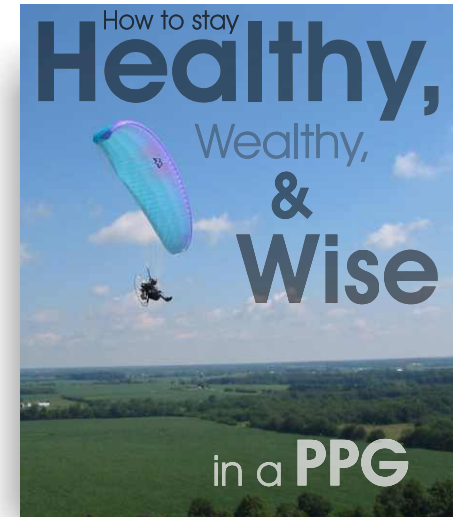
It's deceptively simple looking and surprisingly dangerous. Among other risks is "Lockout," a phenomena that quickly renders the glider uncontrollable at the hands of an inexperienced pilot or tow operator. Even with experience there is elevated risk and it should only be done with the greatest care. A number of pilots have been crippled or worse while getting towed from someone who is not experienced. Tow only with a certified tow operator.

### Water

Going into the water, even shallow water can be catastrophic. Moving water will pull the pilot under by dragging the wing. Escape is unlikely once the pilot starts getting dragged out to sea (or downstream) and the lines can quickly foul the pilot's swimming motion too.



The pilot of this wing escaped injury after he inadvertently flew into a child's kite line on the beach. Like power lines, these are essentially invisible. Avoiding low flying is always the best prevention.



It's possibly the Safest way to fly, but it's still Flying.

Here is a guide to Minimize Risk for the Paramotor Pilot

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**P**owered Paragliders (PPG or paramotors) have the potential to be the safest way into flight. The primary reasons are their low speed and inherent stability.

Contrary to what many fear (equipment failure, wing collapse, gust fronts, etc), the vast majority of the most serious accidents have been caused by pilots flying perfectly good craft into something other than their landing zone. Fortunately these accidents are easily preventable by following some simple guidelines which we present here.

First off, get good instruction from a thorough, certified PPG instructor. This will provide a basis for understanding paraglider flight, safety, equipment choices, rules, airspace and how to practically apply the knowledge.

This list goes in order of severity and commonness. It represents a wealth of experience by the paramotor community in terms of what types of operations have proven risky.

One principal that must be understood is that of energy and injury. The more energy (speed) the worse the injury. And the difference is dramatic. A 28 mph collision carries four times the injury potential as does one at 14 mph. That's huge! **And it's enough to turn a minor bruise into a fatality.** Those speeds are mentioned because most of our wings fly about 21 mph.

The above example is the difference between hitting something going upwind or hitting something going downwind with only a 7 mph wind.

## Low Flying

Almost everything bad happens while flying low. Obviously every flight begins and ends on the ground but if a pilot climbs up to at least

200' after takeoff, most risk is avoided.

Even at slow speeds the chances for a wire strike still exists, but not if you're cruising well above the highest wires. Note that in most wire strikes it is the ensuing fall that has caused the most injury although electrocution is certainly possible. At the voltages found on even low wires, wing and lines can be conductive. Pilots have been electrocuted retrieving their gear...the power **MUST** be shut off by the power company to avoid this risk.

In nearly all wire strike accidents the pilot was flying a familiar area **and just didn't see the lines.** They are essentially invisible. Whenever crossing over power lines, do so over the poles, at an angle, and at least twice their height.

## If you MUST...

Some can't resist the allure of the low. If you must, here are some tips that help reduce the risk.

Avoid flying downwind while low. Any miscalculation, unexpected obstruction, or motor failure will yield far more injury and damage. The speed difference between flying low downwind or upwind can easily be the difference between an inconvenience and serious injury or worse. To make matters worse, the higher ground speed means much less time to notice and react to an obstruction.

An insidious risk lurks too...it is a powerful illusion relating to the increased ground track radius of a downwind turn. This illusion, sometimes called the "downwind demon", occurs because the pilot perceives the low turning rate on the ground and pulls more brakes to make it look "normal". Unfortunately, before realizing it, they've put themselves in a steep turn and crash out of the resulting steep bank at high speed. Climb to and fly at least 200' while going downwind to avoid this illusion and it's attendant risks.



## Steep Maneuvering

It's usually gradual. A new pilot's early flying is all mellow as he gains confidence and builds mastery of the machine. But then banks get more "weighty" and little turns morph into wingovers. Before long the steep turns occasionally let the pilot get "light on his lines" as each crest is reached.

At and beyond this point the risk of a serious accident goes up dramatically. Doing the maneuvers close to the ground makes the risk skyrocket: these accidents are rarely forgiving.

The single highest risk of a fatal accident in a PPG is while performing steep maneuvering or aerobatics low to the ground! This is known from past experience.

## Watch This!

An interesting observation is that **nearly half of all fatal accidents have occurred with spectators present.** Resist the temptation to push the limits



when flying in front of or with others. Flying while somebody videotapes has a similar effect - it tends to make the pilots push their limits.

## Weather & Turbulence

Mother Nature inspires many accidents. There are, however, some easy steps to minimize her influence:

Avoid flying mid-day when thermal induced turbulence can easily overcome your ability to climb or control the craft.

Fly in the morning within three hours of sunrise or within three hours of sunset.

Don't fly anywhere near fronts, thunderstorms, virga, or even big billowy cumulous clouds. Things can change amazingly quickly in such conditions.

Check the weather to be sure there is no significant change expected. You've probably felt gust fronts