

Fatal Ignorance

The vast majority of paramotor prop injuries befall unsuspecting pilots starting their unsecured machine while standing in front of it. By vast, I mean that every single starting accident I'm familiar with happened that way—and I'm familiar with a lot.

But there it was. On my phone. A friend alerted me to a social media post where someone was claiming that starting on your back is more dangerous than starting while standing in front of it; going so far as to say it was deadly. Mind you, a motor going unexpectedly to power, even on your back, is dangerous, possibly causing a fall and injury. But I don't know of any such injuries while starting on the back.

A few have gone to power accidentally after start, including one that chopped up the pilot's wing, but *he* wasn't injured. Another *was* injured while walking out to his wing with an idling motor. He wasn't starting, though; his throttle cable went into the prop, setting off a cascade of calamities that ended in serious injury.

Another common myth is that clutched machines are safer than others. They're not. They *do* save lines. In a bad launch pilots tend to release power but not necessarily get the kill switch right away. Lines go into the prop. On non-clutched props, those lines usually get chopped, but clutched props are just spinning down from inertia and don't normally cut lines. Mind you, any time lines get wrapped up they should be inspected since internal, unseen core damage can happen.

Worst and Best Practices

Let's be students of evidence. Empirical evidence is how we know stuff reliably, and it's clear that starting an unsecured machine while standing in front of it is a *terrible* idea—nearly the worst option—second only to starting from the side (a few older models required this). Starting with the

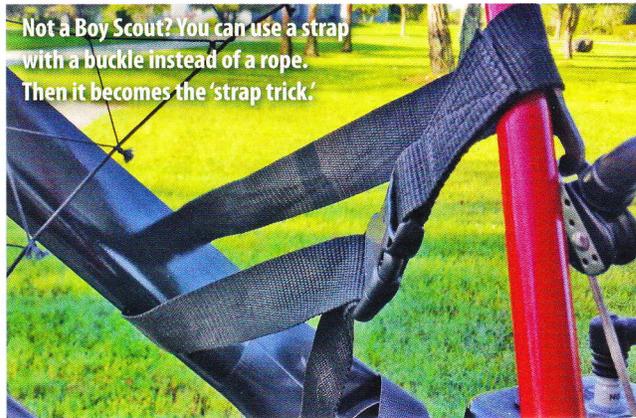


prop or frame secured is always best.

One positive outcome of all this is thinking about what *would* happen if the motor, worn on your back, went to full power just after start? Hopefully the kill switch works but, if not, you'd need to quickly stop moving, probably by quickly going to your hands and knees, then using an alternative way shut it off.

Mitigation is our mantra. Here are some ideas that we can employ, especially since so many machines have inadequate netting systems. Due to paramotoring's growth, prop injuries now happen about once a month.

1. Check that the throttle is at idle at the carb.
2. Fit a second hoop to the cage if it only has one, especially on frames with curved spokes. Does your machine need it? Squeeze the netting and prop together with your hands at its most vulnerable point—midway between the spokes. Imagine 100 plus pounds of thrust there to see how it does. Google 'safety cage add-on' for more info.
3. Make sure the throttle cable can't foul the prop regardless of pilot arm motion—usually nothing more than well-placed wire-tie stays.
4. Start your motor while it's secured to a rack capable of handling full thrust. That's a lot—some machines can push with 180 pounds.
5. If you have a clutch, use the 'rope trick' where a stout rope or strap is tied around the prop and frame before starting. The prop won't spin even if the motor is at full power. Don't remove the rope until you're ready to runup and launch.



Not a Boy Scout? You can use a strap with a buckle instead of a rope. Then it becomes the 'strap trick.'



6. If no rack is available, and you're physically able, start the motor on your back. Consider what would happen if it went to full power. Notice from doing runups that the best way to handle it is to point the thrust up in the air but that will be difficult if it pushes you into a run. If you're going to fall, keep your hands in.
7. If you have SafeStart on your machine, use it. SafeStart prevents the motor from powering up within the first few seconds of start. Unfortunately, it has an on/off switch and, in practice, pilots frequently leave it off.

Seat Belts Kill

Seat Belts Kill. They do. You can get trapped, cut in two or slowed down enough to suffer some other fate but they *save* way more people than they kill. Likewise, for paramotors, even if there *were* a few recorded incidents of injury while

starting a motor on your back, that would pale in comparison with the benefit. Yes, securing the motor is even better but let us not elevate the worst technique of starting while standing in front of it.

Overall we can do better. We must. And hopefully manufacturers, instructors, students and pilots will take this menace seriously given the influx into powered paragliding.

My machine is clutched so I'm starting to use the 'rope trick' which secures the prop, preventing *any* thrust if the motor goes to power. Thanks to Francesco DeSantis for the idea. Nothing is foolproof but it can sure help (see the illustration).

Choose educational sources carefully and be leery of what you read on the wild, wild webs. But keep learning—I certainly try. Even in ignorance we can usually learn and thereby increase our safety and enjoyment. Here's to feeding only air to the prop. 🌟

Two knots are used with the rope trick. One end uses a bowline, which forms a permanent knot.



The other knot, which you tie to complete the loop, is a fall apart knot. You will tie this one on every startup. You loop it through the bowline you already tied.

