WINGSUIT TERRAIN FLYING PUSHING THE LIMITS

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By Robin Heid

When Australian wingsuit flyer Steve Anderton died in August on a terrain flying jump in Norway, he became the third such fatality of the 2007 season, and highlighted a growing trend that may or may not be too dangerous to keep doing.

Wingsuit flying has almost always been a dangerous proposition. From its 11th century beginnings until the mid-1990s, about 75 percent of the people who tried it died doing it.

Then Patrick de Gayardon started flying a suit with inflatable airfoil arm and leg wings, and no rigid parts. The result was a suit that was both high performance and safe. Dozens of jumpers took to the skies from aircraft, cliffs and buildings to try the new wings, then hundreds, then thousands.

But while wingsuit skydiving proved to be no more dangerous than wingsuitless skydiving, the story was different with cliff jumping.

While most wingsuiters used their superior glide ratio to get even farther from the walls than in a normal track, there were several fatalities early in the century where jumpers tried unsuccessfully to wingsuit from short vertical walls, then outfly the less-than-vertical terrain below it to get a long flight.

Cliff jumping wingsuit fatalities dropped off as soon as flyers learned how much altitude was actually needed to get flying, then outfly the terrain as far as possible before opening.

In the last few years, however, some wingsuiters started flying closer and closer to vertical walls and even swooping low over ridges, outcroppings and other terrain features. The result is fantastic flying feats, mind-blowing imagery – and another uptick in cliff jumping wingsuit fatalities.

"It's obvious that flying closer to the terrain adds greater visuals and thrills, but it also increases the risk," says Jari Kuosma, president of Birdman, Inc., whose company first mass produced wingsuits. "I do think it can be done relatively safely but the location must be chosen conservatively and the jumper should have the mental and physical capabilities to make a right judgment call."

That is the tricky part, though, because, as Kuosma says, there are two very different ways to get into no-way-out trouble on a terrain flying jump.

"One is misjudging the flight path and making contact before opening, and the other is opening itself," Kuosma says. "With the first, the risk is flying so close that there is an actual contact. The second is when you fly yourself into a corner, where you can't get out, and you don't have enough altitude to open your parachute. That can happen during the flight or at the end of the planned flight."

Veteran terrain flyer Robert Pecnik agrees that good judgment is essential to survivable terrain flights, and says the way to good judgment starts with a lot of general parachuting experience and the proper mental approach.

"You really need to know about all aspects of BASE and wingsuit flying, and also be very competent with the suit you intend to use," says Pecnik, who was part of Birdman until he left to start his own wingsuit company, Phoenix Fly. "That includes reading about flying and aerodynamics. It is important to understand the theory of flying as well, not only to accumulate experience by jumping without understanding.

"The people who are performing good proximity flights at the moment all know about aerodynamics, and have a solid background in wingsuit skydiving, regular slider-up BASE jumping, and wingsuit BASE.

"Currency is also essential. I make at least 50 wingsuit BASE jumps in the season before I make technical flights. It's important to respect the discipline, be aware of your own abilities and limits, to be mature and to go step by step. I compare wingsuit terrain flying with high-speed parachute landings – swooping. It shares many of the same mechanics and rules."

Pecnik says that, like swooping, extensive general experience must be matched by specific techniques to maximize performance and minimize risk – starting with site assessment.

"The most critical thing is doing proximity only at suitable sites," he says. "You need enough vertical altitude to get flying and make a controlled approach; the line you take over the terrain needs to be steeper than your maximum glide so you have a margin for error. You want only to fly on the outside of the curve, so if you turn too slow you fly away from the object, not into it, and you must always have an escape route. If a person doesn't know if a site has these features or not, then it is already a sign he is not ready to try it!"

Pecnik did not specifically address the three 2007 fatalities, but said that most terrain flying fatalities and several other close calls share several elements.

"People go into terrain flying without having enough experience on the suit they're using, or enough wingsuit BASE experience generally. And, unfortunately, I see some jumpers trying proximity flying just because their friends are. That is very wrong. Ego or peer pressure should never be the motivation for such a hazardous activity."

Despite the rash of fatalities – or maybe in part because of them – terrain flying is safely self-regulating for the most part, Pecnik adds.

"I have seen more people making 'near' proximity flights in Italy, Norway and Switzerland. They make few jumps, going closer to the vertical part of the wall, but later give up because they find it too scary. And in light of recent accidents, I think the number of people doing this at a technical level has stabilized for the moment. Many would like to do it, but they are afraid of it, and that is good because the price we pay if we make a mistake is the ultimate one. Like in any sport or skill, things are already evolving and we are getting better with time and by learning from our mistakes and those of others. But don't have any illusions; an activity like this has close to zero margin of error."

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SIDEBAR: "PULLING LOW IS A RUSH, BUT IT'S NOT PRACTICAL."

More than 30 years ago Skratch Garrison was asked why he'd quit pulling at 500 to 1,000 feet like most other jumpers did at an Arizona drop zone known as The Gulch. Skratch's answer:

"Pulling low is a rush, but it's not practical."

Statistics back him up. In little more than two years, a dozen jumpers died at the desert DZ where sequential formation skydiving was born. That death rate – almost exclusively due to low pulls – also sparked the imposition of (much higher) pack opening altitude rules on parachutists jumping at U.S. Parachute Association DZs.

Proximity altitude rules probably won't be imposed on public cliffs in the wilderness, but already there are some wingsuit jumpers who feel the same way Skratch did about playing fast too close to the dirt.

"Proximity flying is a dangerous game," says Per Ericksson, a pioneering wingsuit BASE jumper. "I did it in the early days of wingsuits and before the term 'proximity flying' existed but come to the conclusion that it was too dangerous so I stopped.

"I concluded that it was too dangerous because to know the wall and talus inside out is crucial to survive it in the long run – and I do not jump the same high cliff or exit point often enough to learn the wall or talus well enough so that I know what is in front of or below me all the time so I don't get any surprises."

Ericksson says he also used "a very old technique – braking to change trajectory instead of changing angle of attack. It's like the difference between toggle hooks and front riser carves. Strangely enough, people still use that technique and that is, in my opinion, one of the major factors that kills and will kill more in the future. One example is Dwain Weston when he hit the (Royal Gorge) bridge; old style approach."

But while Ericksson stays higher above the ground these days, he knows that there are still jumpers out who want to fly in close proximity, and for them he echoes Robert Pecnik.

"Learn the topography of the terrain you are flying/tracking. This will usually take a few years and a lot of jumps and, of course, some talent.

"Never try to 'out fly' – as in, flying over – a buttress, ledge or talus slope, but if you like to do it anyway, go steep, very steep, so you have range both 'up' and 'down.'

"Never brake to get closer; just change the angle of attack. Braking will make you dip when you are going again, much like canopies do, and it is hard to tell how much.

"Fly next to things, not over; flying next to a wall is safer than flying over a ledge. That's pretty much it." –Robin Heid