

On Tuesday, January 22, 2019, a P3 paraglider pilot crashed near Hugeroncito, Colombia. He sustained a head injury after his reserve parachute rigging failed. This is a 'Lessons Learned' report.

#### Facts:

- The injured P3 pilot got rated in the western USA in 2017.
- He is no stranger to cross country flight, having flown throughout the USA, including XC tours in VDB Mexico and Colombia, S.A..
- This pilot is an experienced PPG pilot.
- He attended SIV ~1 month prior to the accident.

The beginning of his Colombia tour included a 'warm-up' visit to Piedechinche. This flying site is known to offer benign thermal flying.

After the second day of flying near Piedechinche, the incident pilot discovered his camel-back hydration system had burst and leaked inside his harness. The result was a soaking of his Dudek pod harness and a slight dampening to his Gin reserve parachute container.

At the end of the day, the incident pilot completely unhooked his reserve bridle from the harness, inspected his gear, then allowed the gear to dry in the shade while on the immaculate hotel grass lawn.

The incident pilot also decided to partially unpack his reserve (removing the reserve from the diaper but leaving it partially unfolded to ensure it was dry). The harness and reserve diaper dried for 1-3hrs exposed to a combination of sunlight and shade.

After the gear was verified dry, the pilot began installing the reserve. It was during the reserve bridle attachment procedure when the incident pilot became conflicted on the correct attachment. He was confused by the rubber band keeper-connection to the mallion. (The rubber O-rings used to stop the riser from sliding on the steel mallion).

Pilot friends are not exactly sure what happened after that point in his installation process-- because the pilot was eventually alone. We do know the incident pilot requested, then later collected, a tool to close the mallion nut. From this point it is strictly speculation, however, we believe the pilot wanted to have another set of eyes on this gear adjustment. He created a temporary attachment between the riser and the mallion by securing the riser to the mallion with rubber bands (see pic) and went to dinner. After dinner the incident pilot returned to his room and prepared his personal luggage for bus departure to another city to take place the following day. The pilot and his group relocated to another flying location, Roldanillo.

This year the meteorological conditions were stronger in Roldanillo than average years. On the fifth day of XC flying, and the third day in Roldanillo, the pilot had a typical morning. The tour group launched from Aguapinella then took a flight route northerly towards La Union. There were five pilots flying together including this author. These pilots were in the immediate vicinity of the injured pilot, all pilots within 1km of the injured pilot and, the small town of Higueroncito, which is located 2km SSW of La Union.

The injured pilot was the lead pilot in a flight of two, echelon right formation. This author was initially trailing ~1km behind and ~300 meters above the flight of two, watching with keen eyes for potential lift indicators. Three other pilots were also within 1km of this two ship formation.

When this author closed the gap within ½ mile of the two-ship formation, he encountered severe turbulence and immediately gave a radio broadcast with instruction to fly high or, avoid the area. A few minutes later the author neared the two-ship formation within 200 meters horizontal and 50 meters vertical. The author transmitted radio instruction for pilots to cross the valley to La Victoria (stereotypical flight plan for pilots operating in this area). The lead two-ship formation turned right with intentions to depart the mountain range with hopes of crossing the valley.

1km before the leading two-ship reached the valley, the incident pilot encountered a strong thermal and immediately initiated a clockwise turn. The trailing #2 pilot began following in the same right turn. Again, this author was keenly watching both gliders in the two-ship formation for indicators of lift and the strength.

The incident pilot was ¼ into his first right turn when he encountered a sharp thermal edge. The pilot was subjected to an immediate full frontal collapse. The collapsed wing fell back and behind the pilot. While the pilot fell back, he also began twisting clockwise under his wing (line twists). The wing then began to fully reinflate and surged forward. Even though the incident pilot was twisting he still had control toggles in each hand and then attempted to stop the wing overhead—unfortunately, too aggressively. The wing abruptly fell back, again.

As the wing fell back for the second time the pilot continued twisting clockwise under the glider. The pilot rotation and line twists continued as the wing began a counter-clockwise cascading event. The pilot continued a slow clockwise twist under the glider while the wing spiraled in a counter-clockwise rotation. During this entire event the pilot remained seated in his pod harness, stiff leg, not bent.

This author made a radio broadcast “Reserve, Reserve, Reserve”. The injured pilot released his right hand from the control toggle and immediately grabbed the reserve handle. He executed a text-book ‘look-reach-pull-throw’. The deployment handle and bag were aggressively tossed/thrown upwards and away from the wing to an unobstructed area of airspace. Unfortunately, at the moment when the deployment/diaper bag should normally open, the reserve bridle disconnected/exited the harness, unattached. The reserve fell to the earth inside the deployment bag most of the way down to terrain. (The parachute eventually fell out of the deployment bag before it hit the ground.)

While the reserve fell to the earth, the injured pilot remained locked into a counter-clockwise cascading event. Upon seeing the reserve failure, this author broadcast on the radio “Full Stall, Full Stall, Full Stall”. This author observed the incident pilot attempting to pull the toggles but the lines were locked in place.

The injured pilots descent rate was not “death spiral” speed. The descent was later estimated to be ~1,000 fpm. This author attempted to match the injured pilots descent rate however, was unable due to his high-performance glider in above average buoyancy combined with turbulent conditions.

As this author continued to spiral down directly above the pilot locked in the spiral, the author began emergency radio broadcasts indicating the injured pilots name and his general position. This communication occurred before the pilot impacted terrain. Other pilots in the group acknowledged the emergency broadcast and immediately began emergency procedures. The injured pilot remained in the same cascading event until impact with terrain.

The incident pilot crashed on a mountain spine, ½ way between top and bottom. He crashed into the only thick vegetation along a bare spine.

After the injured pilot impacted, this author along with three other pilots, monitored the downed pilot for movement. No movement was observed. The author continued emergency descent with his anti-G drogue parachute then made several attempts to top-land near the accident scene but, the thermic conditions were too strong. The author instructed all pilots circling above the accident scene to land immediately, except for one pilot. The author requested one pilot to remain airborne as long as safely possible to serve as an overhead observer and coordinator. Meanwhile, a nearby farmer was observed running down the mountain to the injured pilot.

All other pilots in the immediate area landed safely, some within .5km of the accident site. This author was fully equipped with a basic trauma kit, 2 extra liters of drinking water and several various communication devices. He continued delegating, issuing instructions, and coordinating rescue efforts.

The heat index that day was unusually high that day, 40C temp. The high temperature combined with the steep and rugged terrain, made for a brutal hike for a very athletic pilot. It was ~1 hour before the athletic rescue pilot was able to reach the injured pilot. The injured pilot was found lying on the ground, conscious but not moving, disorientated, and unable to coherently communicate. There was no blood on the injured pilots body. The rear of his helmet had a baseball sized crushing/indentation but it did not penetrate the inside helmet liner. His left eye was black/purple and almost completely swollen shut.

During the next 4 hours, emergency personnel were recruited, dispatched, and participated in the manual extraction process of the injured pilot. Rescuers and the injured pilot would be exposed to the elements for 4.5hrs before the injured pilot was loaded into an ambulance then transported to a nearby hospital. The injured pilot remained conscious for the entire day however, incoherent with slurred speech. During the rescue several of the rescuer's suffered with severe dehydration (vomiting, dizziness).

The injured pilot was transferred off the mountain to the nearest hospital in La Union. He was admitted for ~1hr to be evaluated/analyzed, catheterized, and continually monitored while another ambulance was arranged to transport the injured pilot ~50 miles to a better hospital in Pereira.

Within 3 hours, the injured pilot was successfully transferred to Pereira. Pereira offered a large hospital with a neurologist. The injured pilot was admitted to the hospital and remained under close observation for 5 nights before getting cleared to return to the United States.

Miraculously, the injured pilot did not have one broken bone. However, the head trauma left him with temporary double-vision. Doctors anticipate the double-vision to eventually pass and normal vision to resume.

### **Some Lessons Learned and Reminders:**

- Be disciplined with a safety practice that includes a 'buddy-check' after any modification or adjustment to a flight critical component.
- During the pre-flight check, if ever interrupted at any time, start the entire process over and begin again at step 1.
- Fly with a trauma kit. Unprepared rescuers can use it to save you or, you can use it on another person.
- Regardless of where you fly, always carry personal medical information (allergies, blood type, etc..) and emergency contact information.
- When the emergency chute did not properly deploy, it was the robust helmet that prevented death. (Is your brain bucket certified and robust or, did you opt for something simple that only passes as a 'helmet'?)











**This is how the harness bridle was found. The reserve bridle was never connected.**

