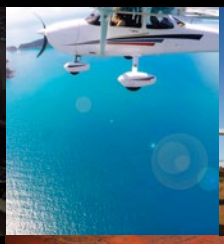
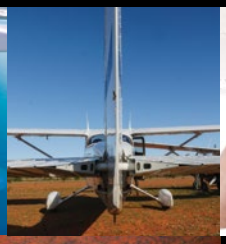
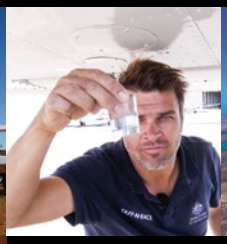
Australian Government
Civil Aviation Safety Authority

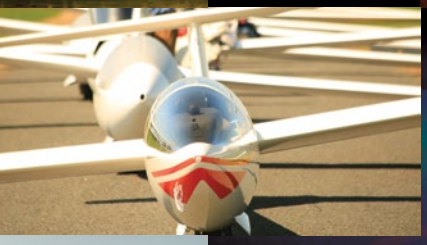
CLOSE CALLS

SPORT AVIATION SPECIAL 2018

OUTN BACK SERIES II

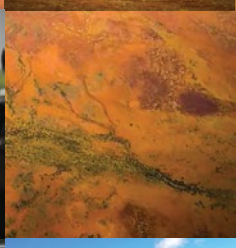






plan **arrive** **survive**

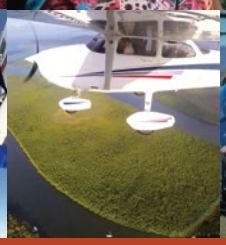



It's massive, remote and challenging. Are you ready to fly the outback?

In this new series, follow the VFR flight of a Cessna 172 and GA8 Airvan on an epic 6000 km flight through some of Queensland's most isolated locations. Along the way, hear tips and advice from local experts, keeping you safe and legal in unfamiliar territory. Incredible footage puts you squarely in the pilot's seat as we drop in at Birdsville, overfly the magnificent Gulf Country, tackle myriad controlled airspace down the east coast, and cool our heels over the Whitsundays. Jump aboard the aerial classroom.



outnback.casa.gov.au

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cover image | Martin Vlcek
1801.2335

Introduction

Close calls are real-life stories, sent to us in the hope that others will learn from these experiences. They work on the theory that you should 'learn from the mistakes of others, because you can't live long enough to make them all yourself!'

This is our third *Close calls sport aviation special*, and you will notice again that a number of high-profile members from the sport aviation community have been prepared to share their experiences.

They are telling their stories, regardless of possible embarrassment, to promote openness and safety. Reporting rates within sport aviation organisations have improved significantly, getting the message out that it's not about finger pointing, but about fostering a better safety culture.

In the last few years, the sport aviation community has been adopting the use of safety management systems, human factors training and safety promotion through member forums and online.

However, ongoing development of a safety culture is vital. Between 75 and 80 per cent of aviation accidents result from some type of human error, with skill-based errors (including landing errors or visual lookout) the most common, followed by decision making (including poor pre-flight or inflight planning). The simple truth is that tragic events can unfold to pilots who are well prepared, competent and cautious—or at least, believe they are.

Working with a number of sport aviation organisations, we have developed a series of five human factors e-learning modules to help pilots understand their human performance strengths and weaknesses.

The five modules cover:

- Introduction to human factors in sport, recreation and general aviation
- Information processing—the human factor
- Are you fit to fly? Age, stress, fatigue and drugs
- What's really going on? Situational awareness and decision making
- Threat and error management.

You will find the modules on the sport aviation homepage of the CASA website: casa.gov.au/sportaviation. Each module will take about 20 minutes to complete.

Given the sport aviation community makes up almost half of the aircraft operating in Australia, it can be expected that there is a much higher incident rate in this sector, some of which sadly end up as fatalities.

The following page shows a breakdown of sport aviation fatal accident statistics covering 2010 to 2017. In 2017, there were 14 fatal accidents and 18 fatalities in the sector. This does not include VH-experimental accidents.

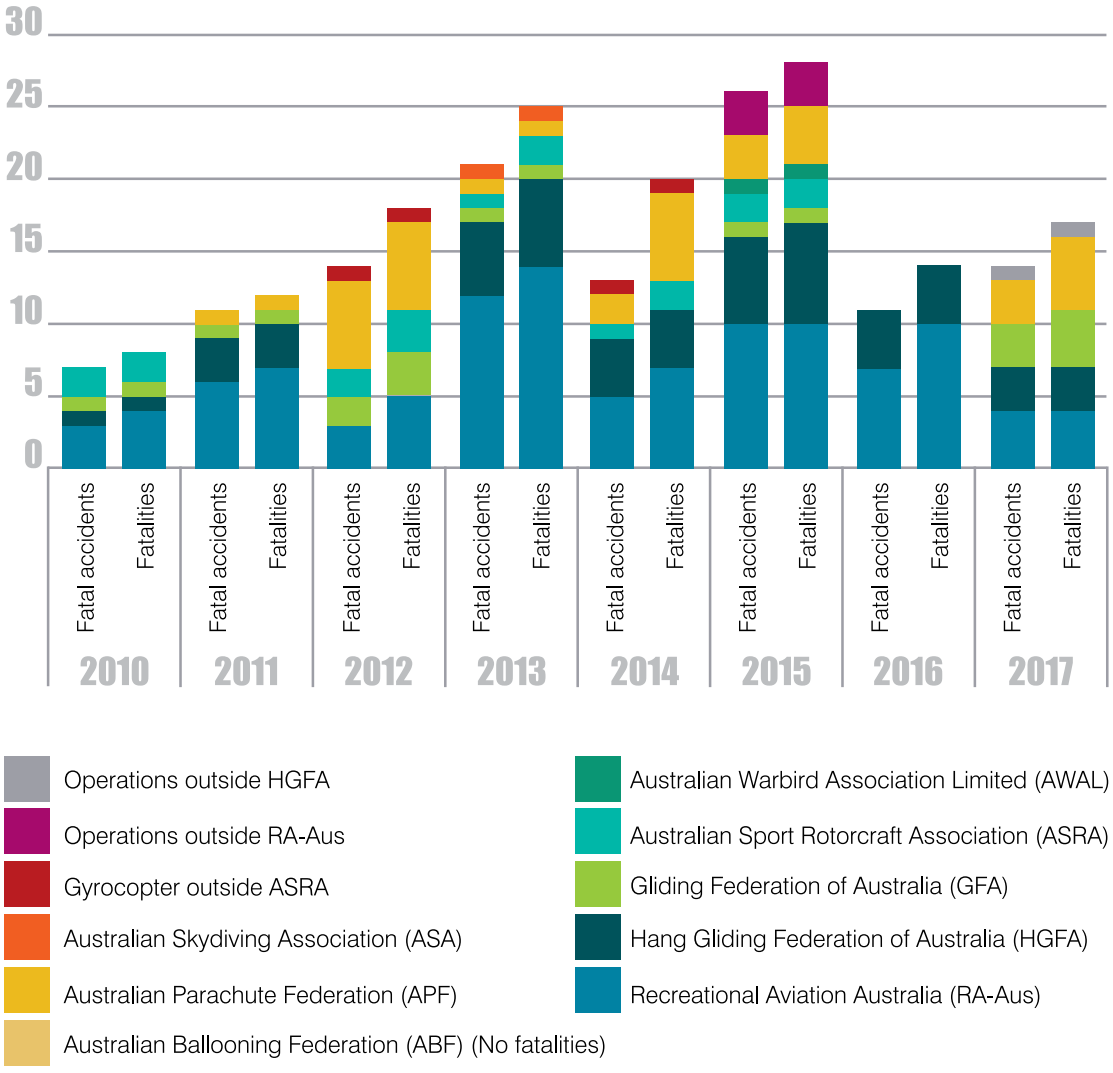
But it's not all doom and gloom. Through proper pre- and inflight planning, pilots have been able to avert situations with potentially disastrous results. These close calls also provide examples of pilots, who by planning and taking control, flew out of potentially disastrous situations.

We would like to thank the pilots who have submitted their close calls, taking the first step in making aviation safer. We urge other pilots who have had close calls to share their stories; and as always, if we publish yours, you will receive $500. Email us at **fsa@casa.gov.au**

We hope you enjoy reading this sport aviation close call special.

Fly safe—the Sport Aviation and Flight Safety Australia teams.

Recreational Aviation Administrative Organisation (RAAO) fatal accident statistics (2010–2017)



Acid trip

Name withheld by request

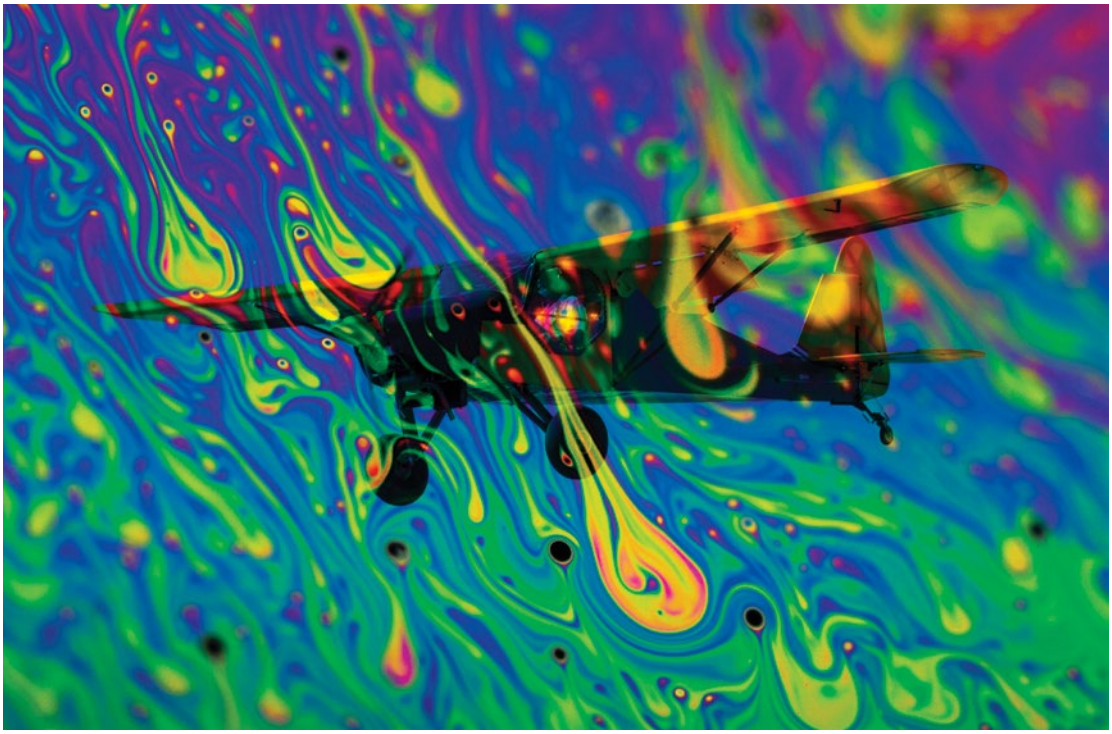


image | Rob Mark

A recreational pilot realises he should have trusted his nose for trouble

Autumn mornings often present great flying weather in South East Queensland and so it was on this morning as I prepared my aircraft, a 35-year-old amateur-built timber and fabric two-seater, for a 90 nautical mile flight to a breakfast fly-in at Murgon. Conditions in the air were as good as they looked from the ground and the trip up was one of those early morning flights that remind me why I love flying.

After two or three hours on the ground having a great breakfast, catching up with friends and meeting new people who also love flying, it was time to perform a quick check of the aircraft, climb in, buckle up, start up, radio call, taxi to the end of the strip, line up, throttle forward and once again I was in the air and bound for home.

Not long after departing the circuit area, and while on climb to the planned altitude of 5500 feet, the red alarm light on the engine monitor came on. A quick scan confirmed it wasn't a temperature alarm. A more careful look revealed an over-voltage alarm indicating 16.1 volts. A bit high, but not the end of the world I thought. The flight continued.

Ten minutes or so later I noticed a faint strange smell. It wasn't fuel and it wasn't smoke (I could relax a bit). I couldn't identify exactly what it was, but I was flying past a coal mine and power station at the time and I wondered if perhaps that's what I was smelling—the smell of burning coal did seem a good match. Another part of my mind said that at about 4000 feet AGL it was unlikely I'd be smelling anything on the ground, but I didn't have any other explanation.

While wondering what the smell was, I was also contemplating what to do. I was about 40 minutes from home and about five minutes past Kingaroy. There were a number of other fields a good deal closer than home. Should I turn back to Kingaroy? Divert to somewhere ahead but closer than home? I decided not to decide but to keep a close eye on things for a bit.

A minute or two later the smell had decreased to the point where I wasn't sure if I could smell it or not. The over-voltage alarm was still there, but everything else appeared normal. Satisfied the engine wasn't going to stop, I continued towards home, a bit more relaxed but still alert for anything unusual.

A few minutes from home I noticed the smell again. Once again it was faint, but definitely there, and definitely not fuel or oil or melted wiring. It was then the idea struck me that perhaps the battery might not be happy with being charged at 16.1 volts. I resolved to inspect it as soon as I landed.

After landing, taxiing back to the hangar and shutting down, I opened the hatch into the rear fuselage where the battery is located and was greeted with a choking cloud of sulphuric acid fumes. I had to ventilate the fuselage for a few minutes before I could access the battery. Removing the lid of the battery box the underside was covered in yellow droplets of acid condensation. The battery itself was hot—I needed gloves to remove it. Then I noticed the styrofoam packing around the battery, which was there to stop the battery from moving within the battery box. It had begun to melt—not from exposure to battery acid but from heat.

So, what did I learn? A few things:

1. Just because a particular fault (a failed voltage regulator in this case) won't stop the engine doesn't mean the flight should continue. While I didn't actually ignore the over-voltage alarm, I didn't take it seriously enough. I should have taken the first opportunity to put the plane on the ground and investigate.
2. What you don't know can hurt you. I'm well aware of the dangers of exposing lithium ion batteries to over-voltage conditions. Now I know lead acid batteries also don't like sustained over-voltage. The results might take longer to manifest and may not be as dramatic, but had my journey home been an hour longer (or perhaps even less), I may well have had a fire on board and I have no doubt if that had happened, I would likely not have survived.
3. The advent of relatively inexpensive and highly accurate digital instruments can give pilots a far greater awareness of the performance of their aircraft's systems in flight, but you have to know what to do with the information presented. In my case, I made some decisions that could have had disastrous consequences because I didn't know what to do with the knowledge that the electrical system was sitting at 16.1 volts.
4. Time and cost pressures definitely drive sub-optimal decision making. The fact I'd promised my wife I'd be home by lunchtime and that I had a heap of things to do that afternoon definitely contributed to my decision to continue the flight. Potential costs if I'd had to leave the aircraft parked somewhere also crossed my mind.

My aircraft has been repaired and I've enjoyed a number of great flights since. But I'm sure I dodged a bullet that day and it was by good luck rather than good management. I'd like to think I'll make better decisions next time I encounter a fault in flight. Time will tell.

Fully loaded and going fast

Morgan Mackay

image | Filipe Dos Santos Mendes

Listen at
flightsafetyaustralia.com

Skydivers are often asked why they'd want to jump out of a perfectly good aeroplane, but what if it wasn't perfect?

I was in the States and it was a sunny California day and a group of friends and I were being put through our paces for our accelerated freefall (AFF) ratings. We had flown an examiner interstate and our days were busy with jumping, packing, briefings and debriefings. The course was challenging, the days long and hot, and our examiner was pushing us on every jump.

On days like these I welcomed the aircraft ride—a brief 15 minutes to catch my breath, run through the dive in my mind and recheck my gear. On this particular day we took off uneventfully like we had many times that morning. Climbing through 1000 feet, 17 jumpers began taking off their seatbelts, sweating in our nylon suits—we anticipated this moment on every load.

I watched the jumper by the door as he lifted the roller. Cool air rushed in, a taste of freedom soon to come. However, he closed it again quickly, pointing to a few drops of liquid on the perspex. Chinese whispers spread around the plane as the message was relayed to the pilot—there was fuel spraying down the side of the plane. We peered out of the small perspex windows, the source of the leak unknown.

The engine noise changed, and I felt the thrust of the turbine reducing as the plane banked to the right. I instinctively buckled my seatbelt for landing. Someone probably spilt some fuel when refuelling or left the cap off. It seemed logical that the pilot was turning around immediately to land and check it out. I checked my altitude—1880 feet. High enough to get out, but maybe not with 16 people in front of me. Besides, everything seemed to be under control.

We came out of our 180-degree turn, and then there was an uncomfortable silence as we began descending. 'Are we gliding?' someone asked. There was more silence. I could see the airport out my window—we were on base leg for two six, but it was a long way out. I willed the plane for better glide just like all those times coming home from a long spot under my parachute. The plane slowed and the airport rose higher in my field of view. I looked at my altitude. We rapidly descended through 1000 feet, too low to get out. I turned to my friend on the other bench. 'We aren't going to make the airport,' I said. 'We aren't going to make the airport?' he blurted back incredulously. I said nothing while he tightened his tandem passenger's harness.

I stared fixatedly out of the window. I couldn't see any big green fields, just houses, high-voltage powerlines and the freeway. A cacophony of beeps rippled through the plane as mine and the other skydivers audible altimeters shrieked their frantic warnings. Trees came into view. Comments such as, 'Alright, we're doing this', 'Relax', 'Hang on' punctuated the silence.

We passed over a row of treetops, 50 feet up over a field. It seemed like forever and most of the precious green field passed before we finally slammed down, bouncing a little. I could feel the pilot's futile attempts to apply the brakes in the loose dirt. We were fully loaded and going fast. Everyone was hanging on tight to the person in front of them.

'Open the door, open the door,' someone yelled. A stand of trees rushed past at astonishing speed, followed immediately by a loud bang. Everything went black. I was in a tangle of bodies and I realised I was upside down. Yelling and beeping was everywhere. My mind was filled with a fear of burning. Liquid was spraying somewhere outside. I tried to find my seatbelt latch to unbuckle. I struggled for a moment then remembered the saying, **'Slow is smooth, smooth is fast'**.

Click. I fell to the floor in a tangled mess of bodies—under me and on top of me. Everything was still black. I struggled to my feet and felt like a tortoise righting itself. There were people all over the floor. I had to kneel and step on them until I found some standing room.

'There is no fire ... relax,' someone yelled. I looked to the front—there was liquid spraying on the windows. The front of the plane was total chaos.

We crawled and scrambled out of the plane. Wrapped in tangled wires and impaled by steel stakes, it was upside down in a vineyard. Broken sprinklers were making little fountains everywhere. We helped each other over the wing, slipping on the aluminum surface, lubricated by jet fuel. We made it to a road. I had no idea where we were. A woman came up to a group of us and said, 'You hit our truck!' 'What, with our plane?' I questioned.

We found the rest of the skydivers standing around in someone's driveway. It seemed everyone was alive and well, if a little disorientated. The pilot had a bloody nose.

A policeman arrived and we were corralled together while he confirmed the story. 'The plane landed in the field over there, hit the road, clipped the back of the pickup truck, went under the powerline and then flipped over in the vineyard. Is that what everyone thinks?' We murmured our agreement. 'OK, you can go now.'

We started walking. A resident pulled over and offered us a ride. We got back to the drop zone a few minutes later to questions such as, 'Did you guys land off?' 'Why are you still packed?' Skydivers were preparing for the next load and the plane was late. 'Na, the plane crashed,' I replied. 'Is it OK?' 'Na, it's %&$#?!' I replied.

We caught up on events while someone went inside to tell the drop zone owner. Just a moment later we saw him drive past in the tug. Less than five minutes later he drove back past, Twin Otter in tow. 'We are going to combine loads 12 and 13,' echoed over the PA system.

image supplied | Tangled remains

Lessons learned

So what did I learn?

Seatbelts save lives. They are a reasonably recent addition to jump planes and are not used in all drop zones in all countries. Many people are dubious about their worth in jump planes. However, the force in our reasonably low-speed incident was surprisingly vicious. Can you imagine being slammed into by seventeen 100 kilo sacks of potatoes during an accident? That becomes several tonnes of force when you had a few Gs. Without everyone wearing seatbelts, I'm certain some of us would have been crushed to death. Knowing which seatbelt is yours needs to be part of aircraft briefings. Benches can be long and people can pick up the wrong seatbelt in a rush, leaving the person at the end of the bench without one.

The usual drop zone briefing on aircraft emergencies doesn't equate to much more than 'Wait for instructions from the pilot'. In our situation, there wasn't the time to wait for instructions from a pilot busy trying to land a heavily loaded plane in a populated area. Maybe aircraft evacuations should be practised as part of safety days. What specific situations should we exit and when should we stay? Who makes the decisions? Is it up to the individual? How do we get as many people out at a safe altitude without upsetting weight and balance? We have all thought about these things as individuals but we have never practised them as a group. We practise every other emergency procedure over and over again. But we are skydivers and not pilots, so tend to ignore the aircraft side of our safety.

Door safety is also an issue. The door remained shut throughout the incident and when upside down, the disorientated jumpers took a while to open it. In the USA, there is no lock-open mechanism like we have in Australia. With an open door one of the jumpers could have been thrown from the plane during the crash. Door open or shut for a landing—this needs to be decided as part of the emergency procedure.

There are ample studies and actual tests which show the correct attachment and brace position for a crash when wearing a single point restraint. This needs to be taught and displayed at the drop zone.

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First solo sorrows

Gavin Richardson

image | Neil Moralee

As most of you would understand, your first solo is a big deal. The emotions, nerves, confidence and premature elation is consuming and fatiguing in the days, hours and minutes leading up to the event.

On the day of my first solo the weather was perfect, the traffic was quiet and it all seemed to be 'falling' into place as if it was meant to be (no pun intended).

I had 17 hours dual time under my belt and had been flying well with my instructor—'like a demon' he had said. I had bought a second-hand gyro four months prior and I could smell the end of my training. The dream of flying my own machine whenever I wanted to was so close I could nearly touch it. Here lies the first problem—I was getting impatient. I was constantly looking at my gyro itching to fly it and getting itchier.

I'd had a good night's sleep and hit the airfield at 0800, with the plan for my instructor to fly it first, followed by some ground runs and then the solo. As mentioned earlier, the weather and traffic was favourable—it was going to happen today! With the pre-flight done, my instructor performed a few ground runs and a few circuits. It was so exciting to see my machine in the air doing circuits, being put to the test of its capabilities, with sharp turns and graceful landings. Upon completion of his check flight, he advised that the gyro wanted to move a bit right when the nose wheel was off the ground, and I would need a bit more left rudder than what I was used to in his machine. He also said it was a bit 'twitchier' than his. Advice that I took on board—or so I thought.

The question was asked that morning whether I wanted to do some dual time first before I went solo but I decided to just go straight for mine, with the rationale that I didn't want to be distracted by the differences of the two machines. Here was the second problem—I should have got my head back in the zone of how to actually fly a gyrocopter—something which I later completely forgot.

As I climbed in the seat my confidence was high. I began to taxi and started to spin the blades up and with a different pre-rotator setup, I didn't expect the whole machine to lurch left as the blades started up. It required a pulse on pulse off as opposed to leaving them on until they reached 100 revolutions per minute (RPM). While taxiing, I noticed severe stick shake which I remember discussing in my training as 'blade flap'. I had obviously never experienced this before as my instructor knew how to avoid it. I corrected it and felt both proud that I fixed the problem, but slightly nervous that it had occurred.

I persisted with a few ground runs, getting it light in the front and anticipating the right jump so to get used to steering it with more left rudder, all while trying to get the blades to the right speed. Here was the third problem—no rotor RPM gauge. My instructor's machine had a rotor speed gauge, and I was used to this luxury and knew when I was at flying RPM. My machine did not have such a gauge so I was trying to learn the speed of the rotors by listening and watching. I had bought a rev tacho and it was sitting in the hangar, not on my machine. I should have installed it. The blades were yet another new sensory input that I needed to learn, process and act on, together with the twitchiness and wanting to jump right and pulsing the pre-rotator. The rotor gauge would have been one less problem. It cost me sixteen dollars.

After several ground runs, I felt I was getting this thing pretty straight, and after a brief chat with my instructor, I advised I was going for it. He supervised from the middle of the runway with his hand-held radio. My radio comms were poor as we had found a problem earlier with the design of the aerial. But that only made my transmissions a bit scratchy. I could still receive OK.

I pre-rotated and started rolling but soon developed blade flap again which I managed to recover from—a combination of too much ground speed with the rotors not spinning fast enough. Could that have been fixed by the rotor speed gauge? Yes.

My next decision was the biggest mistake I made. I had recovered from the blade flap and sat looking down the rest of runway 34 thinking 'I have enough runway left to start from here'. I should have back tracked. My instructor thought I was going to as well, but I didn't. That, on top of all the completely new sensory inputs I was experiencing, was creating a Swiss cheese effect.

I started again, got it light and eventually I was off—but it kicked hard to the right. I gave it lots of left pedal but it didn't behave like I wanted it to. It still didn't come around so I tried to use the stick, which only made things worse. I was still climbing slowly—barely—and I was flying all over the place out of control. Before I knew it, I was at the end of the runway and looking at landing on the Illawarra Highway with four lanes of traffic at a height of possibly 50 feet. I was allegedly also cycling the throttle, panicking. Mistake number 4—I didn't give it full power. I made the decision to put it down before I left the perimeter of the airport. To avoid crashing into vehicles, I pulled the stick back and became a boat anchor. Mistake number 5—at no point did I look at the engine RPM or indicated air speed (IAS). In my gyro, all the gauges were in a different spot to what I was used to.

Landing on all three wheels on the bitumen (narrowly missing the grass unfortunately) I felt my back break on impact. The gyro then rolled over onto its right side and with the rotors and prop still turning, beat itself to death, self-destructing into the tarmac. I undid my seatbelt and could smell fuel, so I quickly turned the ignition off. I removed my helmet and despite my back pain, could not help but put my hands on my head and say sorry. Sorry to my instructor and the gyro fraternity for now contributing to yet another image-damaging incident that I have spent so long defending. It wasn't the fact that I was injured or my machine was dead—I could only think about negative publicity.

I was soon met by three fellas who witnessed it from the hangar. The first one consoled me as I cried in his arms. Men aren't supposed to cry. I did. He reassured me that he had also had an incident, which helped me slightly in that time of embarrassment, devastation and disbelief. It's interesting to note the things that people say in these times and how well we remember words despite all that's going on. That man said other kind things that I remember. However, another person said, 'You should have died and had your head crushed'—not so helpful.

Soon after, the cavalry arrived. Four varieties of police and detectives' cars, two fire appliances and an ambulance (with colleagues of mine)—all of who were helpful, non-judgemental and just as relieved as I was to be walking. The result was four fractured vertebrae, thankfully all stable. I was alive and walking.

We are not experts in what to say in traumatic times. Those who witness traumatic events are also human and also suffer the effects of adrenaline and disbelief, and they are often untrained in their response. Witnesses may not escape the effects of the traumatic event. It is just as important for the witnesses to ensure follow-up medical and mental-health assessment as they too may bear scars in the future.

After much processing, I recall all my mistakes quite clearly and for days would spontaneously shake my head as the flashbacks kept coming of those critical moments. Hindsight revealed there were too many new sensory inputs to process and too many differences between the two machines for an inexperienced pilot, which were compounded by my inexperience in decision making. I returned to the airport holding my wife's hand on day six post event, and was coincidentally met by my instructor with a fellow student flying above me. I walked the runway to retrace my steps, looked at my pile of uninsured twisted metal, had another cry then closed that chapter. I will now focus on a new chapter—getting back in the air.

I learnt multiple lessons that day of the crash and in the following days, not just about aviation and gyrocopters, but about life—valuable life lessons about relationships, priorities, values and myself. I am grateful for the incident and as a religious man, I have given thanks for it. My wife is encouraging me to complete my training and get another machine, but not just yet. I have a new appreciation for flying. It even rekindled my love for my job as a paramedic—simply by being a patient for once. Race car drivers crash cars, horse riders fall off horses and student pilots have close calls. We all make mistakes, and we need to show others, especially our kids, that we aren't quitters.

Expect the unexpected

Name withheld by request

I cannot remember the exact date of the incident as it happened over five years ago. I was flying my hang glider—a Moyes XT165 at Stanwell Park, south of Sydney. It was about 11:00 am and the visibility was clear to the horizon.

The wind was blowing from the east and was light, which had caused other gliders to land. I was able to find ridge lift inland over Stanwell Park railway station and was able to maintain a height of about 1000 feet ASL.

I had radio communications with a friend on the ground at Stanwell Tops car park who informed me he could see a Piper Warrior flying down the coast. My reply was that the plane was probably en route to Albion Park and would not pose any problems.

As the Piper Warrior flew past Stanwell Tops, it made a right turn directly towards my position and at the same altitude. My immediate response was a hard right turn with a large wing over in the hope of getting the other pilot's attention with a spiral dive to lose height quickly.

A hang glider head on has a low profile, but my blue and yellow wing caught the other pilot's attention and he made a hard left roll and turned to avoid a collision. The Piper Warrior flew past at about 25 metres separation and slightly higher heading in a south-west direction and climbing.

I was able to quickly recover the height I had lost on ridge lift over Stanwell Park railway and I still had sufficient height to land at the designated landing on the beach.

image | Jerry Dohnal

No formal report of the incident was made and I was unable to identify the other aircraft other than its make.

What I learned that day was always to be vigilant. No matter how quiet or how good the conditions are, you can still be surprised by an unexpected event.

Past the point of no return

Mark Sullivan | Branch Manager, Client Services Centre, Civil Aviation Safety Authority

image | Mark Sullivan

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flightsafetyaustralia.com

My life did not flash before my eyes, nor did I have a sense of impending doom, but it was a landing I was sure I could do, right up until the moment of impact.

And, like many aviation incidents, it can be put down to 'human factors'.

It was February 1997, and I was competing in the NSW Hang Gliding State Titles, held in Manilla, a small country town near Tamworth. I was flying a high-performance wing, a 155 square foot Moyes XS, complete with 95 per cent double surface, in-flight variable geometry, drag-shedding elliptical wing tips and a full mylar top surface. It was one of the slipperiest wings on the hill.

I was an experienced hang glider pilot, with over 200 hours in both intermediate- and high-performance wings. I was also a qualified GA pilot, with a respectable number of hours, plus I'd flown ultralights for years.

Like many other 20-year-old males, I arrived at the competition full of enthusiasm, hoping the days ahead would be filled with epic skies and epic nights. And I wasn't disappointed.

I was with a group of equally cavalier mates and we'd joke about the benefits of pub living and how it maximised our performance. And like moths to a bug zapper, we'd gather at the bar each night, jeering at those who called it a day, after their salads and water.

Night after night, our group propped up the bar and shared ever increasing tales of glory. Then one by one, we staggered to our places of rest, reincarnating ourselves late in the morning as functioning aviators, but not before lining our stomachs with grease and coffee.

Despite treating my preparation with such recklessness, I'd always set up my glider, attend the pilots' briefing, plan my flight and conduct pre-flight checks. And finally, somehow, manage to present myself clear-headed to the launch marshals, right at the perfect intersection of available daylight and favourable lapse rate.

In fact, in spite of the late nights, poor diet and the odd ale, my flying saw me well within the top ten on the second day of competition. But like most of these situations, I slipped into the final hole in the proverbial Swiss cheese.

The task for day three was a race to a declared goal, via a single turn point. This meant launching from Mt Borah in North Manilla, getting some altitude before the start, then tagging the start cylinder, which means taking an old-school photo of a declared landmark over Wimborne. The task was then to head east for about 30 miles to the turn point at Bendemeer, tag the turn point marker, and then fly north-east another 30 miles to the goal paddock at Uralla.

Launching into increasingly gratifying lift, I was quickly swept away from the hill in the company of a modest gaggle of fellow fliers, and shortly after tagging the starting line, I was cooling my heels at the top of an 8000-foot bubble of warm air and promptly established on my first glide. The course took the competitors along a fairly narrow valley riven by Halls Creek. Ordinarily, the fringing hills of such a valley would yield an abundance of lift and a healthy profit of altitude, at least on days when a brooding overcast sky has not infected the sun's heat with a far-too-early malaise. With a growing sense of foreboding, I watched as scattered cumulus cloud began to languish beneath the slow and almost sinister march of altostratus from the west. Minute by minute, the day was switching off, before it had begun.

In the world of hang gliding and paragliding, and dare I say the art of sailplane flight, a good rule of thumb when searching for lift is firstly to look for raptors or fellow fliers circling nearby. Secondly, if closer to the ground than cloud base, search for ground triggers. Thirdly, and if you are lucky enough to be nearer cloud base than the ground, look to the next cloud. Fortunately for me, or so I thought, I spied another wing at the end of a dead-end valley, circling.

So, here I was, at a crossroads. Should I take the well-flown path of other competitors and fly the safe, but less productive, Halls Creek valley, or roll the dice and join the circling pilot trying their luck at the end of the dead-end valley? In that moment, fatigue, overconfidence and pressure to perform all conspired to compel me towards a fate that was both humiliating and expensive.

It was an ambitious glide to that elusive circling wing. On reflection, it was probably a glide of 10 to 1. And I should point out that the behaviour of a hang glider in 'scratchy' low level (<500 foot) lift is remarkably similar to that of a glider performing a tight-field landing approach, that is, a sequence of 360-degree turns over the final approach point—think 'high key-low key' forced landing approaches in a powered aeroplane.

Unfortunately for me, it was well and truly the latter—the glider was circling to land! The air was so devoid of lift it felt like a hot knife sinking into soft butter. Not a bump. The whole ignoble situation was made even worse as I couldn't stretch my glide to the other pilot's landing field. And my half-hearted poorly selected plan B was strewn with powerlines.

It was at this point that my addled brain coughed up its most fetid pool of long-lost facts—if Europeans can routinely land tailwind up the side of a hill, how hard could it be for me to do the same?

Quite hard, I can confidently say now.

I found myself riding a five-knot tailwind at roughly 18 knots towards a slope of 40 degrees up. I was primed and ready for a spectacular demonstration of what is commonly referred to as a 'fly-on-the-wall' landing. Properly executed, such a landing begins with an uncomfortably early flare, which relies on momentum and slope to compensate for an angle of attack well in excess of 17.5 degrees.

The alternative—the 'bug-on-the-windscreen' landing—was in fact the technique that I ultimately demonstrated. It requires no attention to the timing of the flare but would typically benefit from having an indestructible airframe and full body armour, neither of which I possessed. The interesting thing about this method is that it's not until the moment of impact that the criticality of flare timing truly manifests itself. And with that, my flight came to a painful end.

I was alive! Sad, sore and sorry—I gradually checked myself. Firstly, I tentatively stretched my arms out, slowly turning them over. They had the appearance of raw pepper steak, and my right thigh was severely corked—I feared it was broken, but luckily an X-ray proved otherwise. After radioing for help and being rescued by good mates, I took the time to reflect. My glider was completely and utterly destroyed. So, other than the fact that good friends are a precious commodity, what did I learn?

Clearly, boozy nights and dreadful nutrition don't aid your next day's performance and overconfidence can blight even the most seasoned pilots.

But for me the greatest lesson, no matter what wing is carrying me, are the sins of 'get there-itis' and they take many forms. Sometimes it's the pressure of making sure the hire aircraft is returned to its home strip in fading daylight. Other times, it's the pressure of making good on a promise, despite VMC minimums facing you on every front. In my case, it was the pressure to push myself higher up the competition rankings, egged on by the ego and a trail of bad decisions. The old adage runs true—best to bail early and live to fly another day—or in my case, many, many other days!

CASA.GOV.AU/ONLINESTORE

Note: Most products are free of charge; however, there is a $15 delivery charge within Australia.

Obvious, with hindsight

Matthew Tomlinson

image | Matthew Jackson

Fifteen seconds. That was all it took. From the threat first being detected, to a potentially deadly situation, took just 15 seconds. This is the day I learned that a nice day of flying can turn deadly in the blink of an eye. It is also the day I learned the limitations of alerted see-and-avoid.

The day began three years ago at my home airfield, Wollongong, in NSW. I had been flying microlights there for a number of years, and knew the local environment well. It was a fine day for flying, and I had enjoyed a nice trip down the coast to explore Jervis Bay. The visibility was excellent, and my passenger and I had taken some stunning photographs of the white sands on Hyams beach. Returning to Wollongong after a couple of hours in the air, the belching chimney stack from the steel works at Port Kembla indicated a gentle sea breeze coming in from the north-east. This was quite usual for the time of year, and meant me planning an approach to land towards the north, on runway 34.

With my inbound call complete, I tracked straight towards the field and positioned to overfly at 1500 feet. A quick look down at the windsock—still north-easterly—and I began a gentle descent on the dead-side to the west of the airfield. Things were quiet; there had been no other traffic that I had heard since my 10-mile inbound call. Excellent, I thought—that's one less thing to worry about.

'Wollongong traffic. Microlight 1234 joins mid-field crosswind runway 34, Wollongong.'

It was the second I let go of the microphone switch that I heard it. 'Wollongong traffic. Cherokee Alpha Bravo Charlie joins mid-field crosswind runway 34, Wollongong.'

Huh? Instant confusion began to dominate my senses. I hadn't, up until this point, seen or heard a thing. And now another aircraft was telling me that they were in an identical position to me. I began

to look around frantically in every direction I could, trying to temper my increasing heart rate and adrenalin levels. Nothing. Perhaps he was above me? In a weightshift microlight, with the fabric wing above you, your visibility is great in every direction except directly above. I began a gentle turn to the left and back again to inspect the airspace above me. Nothing. Where on earth was he? There was nothing for it but to ask.

'Cherokee Alpha Bravo Charlie, this is microlight 1234, your present position please?'

'Ummm … Alpha Bravo Charlie … is … urrrmmm … joining mid-field crosswind runway 34.'

I strained to interpret the call. It was not a pilot's voice I knew from Wollongong airport. It was hesitant, and sounded inexperienced. And more importantly, it didn't really help me understand why I couldn't see him.

'Crossing the runway centreline now,' the voice added, nervously, in a follow-up transmission.

So was I.

It was then that we passed each other.

Flying head-on, with a closing speed of perhaps 150 kt, I was close enough to see a pair of startled eyes looking at me from the cockpit of the Cherokee. I had no time to do anything other than view the situation I found myself in. And as quickly as it started, it was over. I tried to suppress my true feelings, and instead tried to act as professionally as I could in the circumstances.

'Cherokee Alpha Bravo Charlie, microlight 1234 is visual with you now, and be advised that circuits are RIGHT HAND on runway 34 at Wollongong.'

It was now so clear to me. So obvious in hindsight. I was simply looking in the wrong place. Alerted see-and-avoid is only as good as the pilot making the radio call. If you make a mistake, like joining crosswind from the wrong direction, every other pilot is going to be looking for you in the wrong place. I would argue that in this case, the other pilot's error that day reduced safety margins below that of (non-alerted) see-and-avoid. My attention was deliberately drawn away from his location, not towards it. I was looking to the west of the field, while he was arriving from the east. And I believe that this is the main reason I didn't see him until he was flying right past me. The only thing that saved both of us that day was the luck that we had 200 m of lateral separation between us. That, for me, was too close a call.

I made an effort to talk to the other pilot after we had both landed. I extended a hand and introduced myself as 'the microlight pilot you nearly collided with'. I was friendly, and we spoke about what had happened. It was a simple mistake by a low-hour PPL student from Bankstown, who hadn't paid enough attention to ERSA when pre-flight planning his solo navigation exercise.

I learned a valuable lesson that day. I learned that alerted see-and-avoid is the best that most of us non-commercial pilots have to assist us in avoiding each other. But I also learned that it is only as good as the pilots who use it.

More than a tropical breeze

Jason MacLeod

images | Andy Lucy

In June 2016 I travelled to Bali for work but managed to make that coincide with a paragliding tour. With a newly minted licence and only 5.5 hours airtime, I was keen to get as much flying done as possible. Most of the flying happens in Candidasa, a challenging site on an old peanut farm. The launch involves leaping off terraces that contain all sorts of spiky, wing-destroying sappy trees. About five days into the trip, I launched on a particularly strong day. Two instructors assisted due to the strong winds. I relied too much on them. Propelled by my own eagerness, all I could think about was getting into the sky, pushing away my doubts about the conditions. I really shouldn't have launched. When I watch the video of my flight, the wind was barrelling up the hill and I was an inexperienced pilot on an A-wing. After my crash, no-one else flew that day.

A video of the launch (**youtu.be/1NedSRn42bY**) shows me going straight up even before I can turn around. All I remember was 'right brake, right brake' then my instructor yelling out 'speed bar'.

Unfortunately I couldn't reach it in time. I was being thrown around in my harness and the bar was up high, tucked in its Velcro strap. By the time I had gone on bar I was just above the hill. As I pushed the speed bar out I dropped down below the hill. By that time I was in serious trouble. I started to turn away but it was too late. Rotor. I don't remember much, but my vario shows me coming down about nine metres/second, straight into a cactus and rusty barbed-wire fence. My airbag cushioned much of the fall. Remarkably, I just missed three nasty strands of rebar sticking out of a concrete fence post. My only injuries were a few puncture wounds, cactus thorns and shock, but it could have been a lot, lot, worse.

My instructor and fellow pilots on the tour were quick to come to my aid. I think Marcus was the first on the scene. He told me to lie still and not move. Second, he unclipped my wing which was great because I was worried about being dragged through the barbed-wire fence. Be like Marcus to another pilot who crashes and you could make a big difference.

Glenn, a nurse, was also there soon afterwards. He checked for broken bones and concussion, treated my cuts from the barbed wire and helped me deal with the initial shock. Now I have promised myself to fly with a first-aid kit and keep up my first-aid skills. My instructor packed up my glider which was a big relief. I think one of the first things I asked was if my glider was OK. Crazy I know, but such is the pull of our sport.

When I did get on my feet and back to the hill a few other pilots sat with me. That made a big difference. I remember Kieran not saying much but checking I was OK. I was still a bit shaken up, a bit sore and didn't want to talk, but having people around was great. It was only when I recomposed myself about an hour or so later that I was ready to talk about the accident. Andrew, Glenn and Madison all helped me understand what had happened. We reviewed what they saw and I started to take note of the lessons I needed to observe.

A big one for me is a profound respect for rotor and strong winds. Going over the back was like being dumped in the surf—being drilled into the hard ground by a strong and powerful wave of turbulent air.

I also made a number of simple errors. In strong winds I need to recheck my speed bar. Now I have a little ditty I say to myself at the start of each flight, **'Holy Hell, Spandau Ballet'**, which refers to **harness, helmet, speed bar**. I now always unclip my speed bar on launch in strong winds so it hangs down a bit. Then there are other basics. It is essential to assess my capabilities, review the site, check my flight plan and observe the conditions.

I don't feel any shame in crashing. For me the most important thing is that I learn from it. Flying is also an inner journey. I am grateful for the crash in that it made space for me to face fear full on and also accept again how dangerous the sport can be if we are not vigilant.

Getting up in the air again as quickly as possible was very important for me. Having experienced pilots and the paragliding community I was with to support me was a beautiful thing.

Easter road trip

Anthonie Schutte

image | Andy Karmy

Listen at
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It's the Easter weekend. The weather's perfect, skies are clear and my mate Kevin and I are in the cockpit of my beloved Kitfox 3 'rag and tube' light plane. We're at 5000 feet and heading east for Kalgoorlie, 590 kilometres away.

My Kitfox 3 was a beauty. I'd purchased it from Skystar Aircraft Corporation USA and spent about 850 hours putting it together. I learned to fly in it, and you could say this plane taught me how to fly. The Kitfox 3 was an improvement on the earlier two models, and it surpassed all my expectations. However, my only concern was with the welded aluminium fuel tanks supplied with the kit. The intense heat caused by welding aluminium can affect the alloy and change the composition right where the strength should be. But when I looked over the rest of the aircraft, its quality reassured me I should have no concern.

To take my newly built Kitfox out for a spin, Kevin and I had planned a flight from Perth to Kalgoorlie. I'd recently gained my private pilot's licence and passed my CTA, which enabled me to fly unrestricted, while Kevin had flying experience of many thousands of hours locally and overseas.

We departed Jandakot, just south of Perth, at sunrise. The weather was perfect, and as we tracked east across the Western Australian countryside, Kevin described the finer points of cross-country flying. We arrived at Merredin mid-morning and topped up our fuel tanks with 40 litres in each, expecting to make it to Kalgoorlie without having to refuel again. During our flight my wife and kids followed us by car and we kept them up-to-date on my CB radio.

It was approximately 45 miles out of Southern Cross when I noticed the smell of fuel, and tried to determine where it could be coming from. As the fumes worsened, we decided there was no choice but to make a forced landing. Up to that point, we were not greatly concerned and started looking for the best landing spot. I contacted my family in the car and told them about our plan.

The only option was the Great Eastern Highway, but as it was the Easter long weekend, the road was crammed with traffic. We waited patiently for a clear patch. We were, however, unaware that our left fuel tank had burst at the seam and over 30 litres or so of fuel had drained into the wing.

Approaching from the west, Kevin banked the Kitfox to the right to line up with the highway. It was at this point that the accumulated petrol poured out of the wing, saturating both of us. Realising this was now an emergency, I switched off all electrics, the engine and fuel.

We glided in eerie silence. As I looked down, I realised the Easter traffic would make a safe landing on the road impossible. Our only option was a rough, narrow-gravel track, parallel to the highway.

Kevin and I didn't speak as I prepared for a rough touchdown. Without a running engine, our options were very limited, and I'd no doubt that this was going to be messy. Close up, the gravel track looked way too narrow and had small trees on both sides.

We touched down hard and the Kitfox bounced back in the air again. Almost paralysed, I sat staring ahead waiting for the next bounce. There was a wooden railway sleeper across the track. Rebounding from the next bounce, we touched ground again just before the sleeper.

The crunch of buckling steel must have been pretty loud but I don't remember hearing anything. Somehow my perceptions had turned off—I didn't care about my plane—I only wanted things to stop moving.

As we skidded across the sleeper, the right main wheel came up and jammed my exit door shut.

With the other wheel still intact, we started a ground loop. By this time, I'd removed my headset and was ready to unbuckle my belt. When the turmoil stopped, I sat in silence for a moment, reeking of petrol, then tried in vain to open my door. Unsurprisingly, Kevin hadn't wasted any time in getting out and so I slipped across his empty seat and out the only open door. I later learned from him that he'd had a similar experience previously, which taught him that in an emergency it's a good idea—if at all possible—to open your exit door before touchdown.

It didn't take long for my wife and kids to find us. Standing in my petrol-soaked clothing beside my wrecked plane, I asked my wife if she could bring me some clean, dry clothes from the car. Her reaction was to pull a packet of cigarettes out of her pocket. 'Ah, let me have a smoke first, I'm a nervous wreck!' she said. And began to strike a match.

No!

There was no fire, and the solid construction of the cockpit saved us. We didn't have a scratch on us. Skystar accepted responsibility and sent me a new Kitfox 4 kit with newly designed composite tanks at no charge.

My wife is still a smoker. She's now my ex.

Rescued in the nick of time: what not to do

Name withheld by request

image | Robert Frola

I had not long before purchased a beautiful Skyfox Gazelle aircraft from Boonah Queensland airport and I was very proud of the beautiful machine, bright yellow and very clean. It made such a lovely sight in the sky. I had done my solo flight in northern NSW but was relocating to Wyndham in Western Australia's Kimberley region, the most northerly town in WA with splendid scenery, big rivers and close to the ocean. How would I have my beautiful aircraft transported to WA? I got help from a chief flying instructor (CFI) whom I got to know, called Norm, who was living in Narromine NSW. He agreed to help me and met me at Boonah airport.

We departed in beautiful weather, me sitting in the left seat and Norm flying the Gazelle from the right seat. We flew VFR with the help of an added GPS. I learned on the way and Norm made me say some of the inflight checks; I remember one of his peculiar downwind checks was 'have we got wheels?'. Of course this was important, but I would not have included that.

We had a good trip over, quite a few stops on the way and about 28 flying hours. Once in Wyndham, Norm stayed in a motel and for the next few days gave me flying instruction. I passed all my endorsements and got my full pilot's certificate on 20 June. After Norm departed I was happy to practise, took a few passengers and honed my flying skills. I was especially proud that I achieved very good landings all the time.

Now it was time to go a bit further and a trip to Kununurra, 60 miles south, was planned. The morning was beautiful, very light wind, so I did my pre-flight checks. A quick check of my fuel levels revealed that I should have enough for the short trip, but did I have enough reserves?

I departed smoothly, there was no other traffic, and as Kununurra has the same north-south runway directions as Wyndham, I decided I would do a straight-in approach, i.e. you don't fly normal circuit procedure, but you get in straight final. The trip to Kununurra is straight forward—you more or less follow the highway, go between two high rocky peaks and in no time the runway is lined up in front of you.

About three-quarters of the way to Kununurra I thought I saw something strange in front of me. I did a quick 360-degree turn to check what it was, but where was it now? And how much did I turn? I didn't remember and now I didn't know where I was. I didn't do a written flight plan as the flight was so simple and straightforward, but now I had lost my bearings and couldn't remember my track. I was lost and couldn't distinguish any natural features on the ground that would be on my WAC map. And as I did not check my fuel thoroughly on departure I was now low on fuel. I noticed agricultural crops here and there, indicating that I was near Kununurra, but where? I couldn't wait too long as I was low on fuel, so I switched on the emergency frequency 126.5 and radioed a mayday distress signal.

Fortunately I didn't have to wait too long. Mike from the Sinclair workshop in Kununurra picked up the signal and advised me that he was flying over in a light plane to help me. He soon appeared and I was relieved, but what were we going to do as I was low on fuel? By radio contact he told me that he would fly ahead and find a suitable landing area, but what on earth would he find?

The Kimberley is just all rocky terrain with no place to land, except the roads, which would be OK for an emergency landing. And yes, that is exactly what we found. West of the Durack River, a dirt road was being constructed, but it had people working on it. As we had no time to waste and there was no alternative, we would have to swoop a few metres above the road, frighten the workers, all hell would break out and they would run for cover and for their lives into the bushes. Sorry mates, there is no other way. Mike lands first and I follow suit.

I am on the ground, safe. What a relief. Time to explain to all the workers and thank God they were not angry. They understand the situation and what a bonus—they offer me some fuel. What a blessing! Mike gives me the proper track directions for Kununurra and after thanking the workers, we flew off and in just a few minutes we landed safely in Kununurra. I was safe, rescued and it was time to thank Mike for his great help.

But what a lesson! Do not approximate your checks. Always do a thorough probe. Write down your flight plan with your track directions. Never again will I ever enter a life-threatening situation due to my own doing.

178 seconds, the real life version

Lee Ungermann | Former Manager Sport Aviation, Civil Aviation Safety Authority

image | CC0 1.0

This precautionary tale is one of what happens when experience, complacency and rapidly changing environments conspire against you to become a lethal combination. And at the time, no one was more surprised than me.

As a busy RAAus Chief Flying Instructor (CFI) L2 and commercial pilot, I had never had the opportunity to attend the national RAAus fly in. Somehow, every Easter when NATFLY was on, someone always wanted to book in for solid training days to finish their certificate. Being self-employed, that was kind of hard to turn down.

However, this particular Easter was looking good as I packed and prepared the aircraft for the flight. I was fortunate to be taking a relatively new aircraft from a local manufacturer in Ballina to NATFLY for the distributor display, and was excited with the prospect of attending the seminars and catching up with friends. My good friend was also coming with me, so we were both looking forward to the adventure.

The planning of the flight was meticulous, the stops were scheduled, the weather was looking great west of the range and we were set. Like most easterners, crossing the Great Divide to get to the great open westerly plains of safety is often the first challenge. And these ranges west of Ballina had claimed more than their fair share of lives.

Despite the optimistic outlook, the weather forecast alluded to bad weather coming in from the east later in the day. An early morning departure would put all that behind us and many track miles from our first destination.

The morning dawned clear and crisp; the aircraft was loaded, fuelled and we were ready to depart. Something was not right with the weather however, looming clouds to the right of our track indicated that the weather did not appear as forecast.

While the track to the west remained clear, we departed Ballina for Tenterfield determined to get west of the range as early as possible and into the blue sky promised along our track.

Having operated in the area for a number of years, I was intensely familiar with the weather of the region, so much so that difference in the weather was more of an anomaly than a concern at first; however, once west of the range I felt that the rest of the trip would be smooth sailing.

After tracking past Lismore on climb to 4500 feet, the temperature and pressure gauges were in the green, and the cloud had thickened with isolated cumulus beginning to tower. The weather to the north began to look decidedly threatening and appeared to be sweeping in from the northwest rather than northeast as predicted.

Overhead Casino the cloud had thickened considerably and appeared decidedly ominous to the north. Towering cumulus began to materialise as I elected to climb to 6500 feet approaching the range; our weight and reducing air density slowed the climb rate and our ground speed in turn.

I began to alter track left and right in the climb to manoeuvre around the rapidly developing convection. Low-level scud swept in underneath as we appeared to hang motionless in the sky watching the rapid development around us. The ground was all but covered as we continued climb through 6500 feet en route to amended level 8500 feet.

The rate of convective development around us was beginning to get concerning. Monitoring engine temp and pressure and with the engine getting hot in the extended climb, our vertical climb speed had dropped to a mere 250 feet per minute. The situation was becoming uncomfortable, and a quick glance behind me revealed that the visibility had gone.

We traced along a rising cloud bank approaching two converging towers of cloud; and passing 8500 feet we had no option but to continue the climb to remain visible and attempt to squeak through the cloud valley to the clearer air on the other side.

With decreasing air density, climb had slowed considerably again. Our options were becoming limited. With the engine temp approaching the red, we continued to the cloud valley.

Passing 9500 feet, we approached the towering cumulus only to come to the stark realisation that it was climbing faster than we were. Like slow motion in a Matrix movie, we looked around—only towering cumulus out either window, no option to turn back, high-nose attitude and a rapidly over-temping engine. With only blue sky ahead, we approached the rising pass.

I could hear only my own heartbeat in my ears as the windscreen misted slightly and then suddenly went white. (To understand what this is like watch CASA Safety Video '178 seconds to live' at **www.youtube.com/casabriefing**).

The feeling is indescribable when you commit such a cardinal aviation sin. My immediate thoughts turned to those I might leave behind, my friend's safety, and what every student I had ever taught would think of their CFI. I was no longer the teacher; I was a student in life and death.

For what seemed like an eternity the screen remained misty white, the airframe buffeting within our milky new environment. I could not believe what I had allowed to happen.

image | CC0 1.0

My mind raced—do nothing, do something! Suddenly the veil had lifted and we were reborn into open sky with would what could only be described as a second chance. There was no discussion on what had happened as we identified our emergency descent route, lowered the nose and hugged the building cumulus as we tracked around the wall of cloud and beelined it for Casino.

Safely on the ground, after the proverbial relief only a toilet stop brings after such an event, and trying to drink coffee from a cup I couldn't hold due to shaking so much, we discussed what had just happened.

The smell of fresh rain hit me as I looked up from what coffee I had managed to retain in the cup. The encroaching line of ominous weather had been racing to meet us. We had scrambled to keep ahead of it and make it back to Ballina. We'd made a hasty departure and a straight-in approach to runway 06 just ahead of the front line. On short final, the heavy rain caught up with us, effectively blanking all forward visibility, transferring vision out the side window. Given the circumstances, we made a somewhat graceful landing. It then rained solidly for three days.

I remember every bit of that experience, from the paint on the dials, to my grip on the throttle, to the tension in my friend's voice. To this day, I still react physically at the very thought of that moment, when I let my experience, complacency and decision making be compromised in a potentially lethal combination.

As I write this, I am on a commercial flight on descent into Brisbane, flying over the very spot where I almost became the statistic I always taught my students not to be. What I learned that day about human factors is something that cannot be taught, and reflecting on that experience, I can only come to the realisation that we were lucky. I made a lot of bad decisions that day fuelled by ego and complacency. My hope is that this precautionary tale serves as a reminder that no matter how much experience you have, overconfidence in your aircraft and your own ability breeds complacency, creating a chain of events from which there is no recovery, no matter how good you think you are.

Green walls of Salamanca

Tony Sandeberg

image | Fredi Bach

It was my second paragliding adventure to Europe. The first had been the best five weeks of my life, so I thought I'd do it all again. All the boys had rescheduled their work commitments and we arranged to meet in Thun, a picturesque village in Switzerland, to begin our trip. The plan was to fly a few local sites around Interlaken and slowly make our way to Piedrahita Spain, 2000 kilometres away, for the British Open Paragliding Competition.

Piedrahita is a mediaeval town in the middle of nowhere surrounded by dry, flat land. We were a few days into the British Open and it was common for 'dusties' laden with grass and dirt to blow around the launching area. You'd regularly hear someone call 'dust-eyyy', and everyone would dive onto their bunched glider except for the few out of the 100 or so pilots who were seeing to nature. It was not unusual to see a glider and attached harness 20 metres from the ground, snatched up by a Spanish diablo dust devil, resembling a Chinese dragon masquerading through the sky, with the owner hoping to see his 'more valuable than his girlfriend' glider land unscathed.

Most competition pilots had taken off, the light scratchy conditions making launch difficult. My prior flight had been unadventurous; hugging the ridge to the right of launch dodging the powerlines in light conditions was torturous. Eventually bombing, I hitched back to the top and relaunched, this time sticking to the left of the ridge. I'm low, 10 metres off the deck, it's really stable and no one is getting up—looks like another sled ride. I head out over the scratchy outcrop searching for anything then whack, the glider kicks back. Eureka!

The glider rockets up at six and a half metres per second. I keep the pressure on aware of my limited height and look up at the glider to see … its top surface! 'What the &*#!?' I scream.

image supplied | Piedrahita launch site

The time it takes to send a message from my brain to my hands seems like an eternity. Within seconds, I smack in. I hit square on my backside, just missing a huge granite boulder. I feel no pain as the glider ambles to the ground. My head spins, trying to absorb what has happened. The dusty returns and the glider is whipped off the ground and me with it—flung around like a rag doll and dumped again, landing a further eight metres away. Now lying on my right side the pain is unbelievable. I unclip my left riser hoping to stay grounded should the devil choose to return for a third round. My mind races, in an unusually organised manner. Did anyone see me deck it? I'm 200 metres from launch, and it's 40 degrees in the sun and I know I've done some major internal damage.

My hand finds my radio and I manage to put out a call to one of the boys. A welcome response crackles through. '&!*#, what's happened, are you OK?' comes the response. I have a feeling of relief that someone in the world is aware of my desperate need. Badly injured and alone on the side of a mountain in an unfamiliar country wasn't in the travel brochure!

I hear someone calling out but can't see them. I raise my arm, waving. 'Tony, Tony … where are you?' An unmistakable pommy accent awakens me from my nightmare. It's Dave, the hangie I met at the pub. He wants to help but is not sure what to do. He makes a call and eventually people arrive to reassure and support me emotionally. The value of this support and the natural will of human caring is healing on its own.

I'm roasting in my flying suit unable and not game enough to move. The pain increases and I begin to groan with each gasp of air, which somehow provides minor relief. An hour passes. 'Where's the f&*#ing chopper?' I yell. Scampering through the dense scrub, the paramedics finally arrive and begin their lifesaving routine. They cut through my harness and flight suit to assess my vitals and thankfully begin the morphine.

image supplied | Paramedics attending the scene

The sound of the chopper blades is exaggerated by the drug. The vibration of the propellers throb in my ears. Dust fills the air … am I still flying? Is the dusty back? A familiar voice reassures me as I am stretchered up the rough terrain to the waiting ambulance, to be transferred to the chopper just touching down on the launch. Squeezing me into the chopper, my head is twisted against the rear of the cabin … and me without a neck brace!

Touching down on the rooftop of Salamanca hospital, I am rushed to a CT machine. Scans are taken and I'm painfully placed into a bed and wheeled into a green painted room. Within minutes a doctor approaches. 'Hablas Español?' 'No hablo inglés,' I respond. 'I am Dr Blanco. You have a burst fracture of your L1 vertebrae and have ruptured your bowel, bladder and kidney. Don't move your legs or you'll be a paraplegic. Nothing by mouth for seven days,' he says. I can't wake from this horrendous nightmare … but I'm not dreaming. My eyes glaze and swell with tears. The night slips away in a state of drugged terror.

The next morning I call my daughters in Sydney and attempt to explain what has happened. Within days my youngest, Tennelle, arrives at my bedside and we both embrace and burst into tears. The guy in the bed next to me lights up a smoke …. the drugs they have given me freak me out and I'm seeing little people on the stark white ceiling of my shared room … with the green walls. I'm flat on my back, can't move, can't feed myself, and can't wipe my own arse. I urinate blood into a glass bottle for three days and it's 50 degrees with no aircon. I'm absolutely &*#ked!

Visits from fellow pilots and the hotel owner in Piedrahita are frequent; however, I'm not coherent enough to appreciate their concern. It's the custom in Spain for your family to look after you while in hospital. Tennelle organises a small apartment close to the hospital, large enough for her and her sisters, who arrived within days. The nurses come in and out, but I understand nothing. Tennelle studies the English Spanish translation book and gives them a run for their money! They show minimal compassion and absolutely no skill in moving a patient with a spinal injury. Finally, they move the smoker out and I have the room to myself. Each night one of my daughters stays in the spare bed next to me to ensure their dad is OK in this foreign, unfamiliar dilemma.

Dr Blanco visits and in good English explains that I need an operation to insert four titanium screws, three plates and a bone graft from my hip, finishing off with a blood transfusion. I'm speechless. I ask him to reduce my drug dosage … so I can at least be aware of what's happening.

The day for my surgery arrives. I am wheeled into an operating room and six hours later, wake feeling like someone out of the exorcist and so, so thirsty. But they won't let me drink. Nurses smoke in the recovery room, paying little or no notice to their one and only patient. Finally I get their consideration by literally projecting a massive vomit … onto the green wall!

I am wheeled back to the green room and the long recovery begins. Placed on my back with the bandages and staples pressing into my spine and I am told to stay in this position. The days and nights pass, in a state of vagueness. I am oblivious to what's happening. Each day I slowly improve and am determined to get up from my bed and start walking.

One day a male nurse arrives and measures my chest. The next day he's back with what looks like body armor—a white plastic upper body brace, which allows me to get up and walk. Helped up by the nurses, my head spins, having been flat on my back for 14 days.

With my first step my legs begin to crumble but I push myself to walk the corridor, getting stronger each day. The hospital food is … hospital food, so my daughters sneak in meals from nearby cantinas.

image | Everste

The days dissolve into weeks. Negotiations with the insurance company are extremely difficult and eventually an agreement is made. They have arranged to fly a nurse over to assist me in my return to Australia. Each day emails arrive offering assistance and good wishes from friends and family back home. I look forward to this invaluable contact. In response my daughters produce a daily news sheet, highlighting my progress and the daily goings-on in our turbulent lives. I am finally allowed to shower; believe it or not … it's only been two and a half weeks!

At last the insurance nurse arrives to escort me back home. The doctor is insistent that I fly flat on my back, which will take up considerable space on the aircraft incurring additional cost.

The insurance company informs us that if this is to occur I will have to wait another month. I insist that I will be OK in a wheelchair, as I can't wait to get out of here. The next day I am up at 3 am ready for the ambulance ride to Madrid airport. I am wheelchaired into the first class lounge of Singapore Airlines and after such a torturous month finally begin to feel good. I'm going home! I have severe injuries but luckily no spinal-cord damage. My three daughters have looked after me like angels … what an absolute blessing.

The flight is fantastic in first class. I revel in the exceptional food, drink a glass of French champagne and nearly pass out, my first drink for a month! On arrival in Sydney I'm taken by ambulance immediately to Prince of Wales Hospital. Dr Gray removes my staples and gives me the OK. I am released the next day and spend the next nine months recovering. After months of physio and numerous checkups I'm almost normal again … well almost!

Two years later I decided to return to Piedrahita, revisit the hospital, thank the doctor and nurses and once again fly the site and get some closure on this immense life-changing event. It took two hours in the dust and heat to find where I smacked in … and eventually it all came back. Kicking in the soil where I lay two years ago were remnants of my flying suit, syringe caps and two Australian coins that must have fallen from my pocket. I broke down … releasing all the emotional pain of that Spanish diablo which altered the course of my life.

I often look back searching for answers that I can't find. Was I careless? Did I not read the conditions correctly? Were human factors involved? Was 12 years flying experience enough?

I think I was just in the wrong place at the wrong time.

Overly task focused

Name withheld by request

image | Galyna Andrushko

As I sit here typing in a neck brace, arm cast and with a mouth full of stitches, I can't help but note the irony. I'm often referred to as 'the safest man in hang gliding'. My pre-flights are like most people's pre-purchase inspections. Once, when nominated for the safety committee at a competition, I heard someone yell, 'No … he'll be too safe'. So how does someone who has successfully avoided injury throughout many years as a fighter pilot, hang glider pilot, glider pilot, solo marlin fisherman, kite surfer, skier and snowboarder suddenly come unstuck? In this case a self-proclaimed, risk-management expert failed to do just that. I became too task-focused, too engrossed in 'training like you fight' to borrow from military jargon, to consider the bigger picture.

The outcome was that on a reasonably windy day with a low top-of-useable lift (2500 feet AGL) a cross-country hang gliding flight was continued from the flatlands into hilly country. At approximately 15 feet during landing, violent rotor slammed the glider into the ground resulting in significant injuries.

Firstly, I'll address what the root cause was not. It was not a lack of airspeed during the landing approach or a failure to respond to the increased rate of descent by letting the bar out to pay off excess speed in order to cushion the landing. I had plenty of airspeed. The increased rate of descent was unlike anything I have ever experienced before in nearly 700 hours hang gliding. From about 15 feet, I was slammed into the ground almost instantly before I had any time to react.

The root cause was primarily a risk-management failure, likely contributed to by over confidence. This was a no-stakes free flying day, not a competition. Winds were 12–14 knots and a bit gusty on the Mt Bakewell take-off hill, essentially launch-in-a-lull type conditions. With very light lift and a low inversion it was challenging enough to fly the first leg to Northam in the flatlands. From Northam the second leg to the Toodyay gaol entered the hills. I failed to consciously consider all the risks at this point and instead just 'flew the task' in never-give-up 'competition mode'. The risks of course were rotor in the hills, reduced useable landing options and reduced glide potential on such a low day. In terms of over confidence, I had recently been sticking great landings into tighter and tighter spots which probably had me at least subconsciously less worried about pushing further into the hills.

In hindsight, potential defences are obvious. A more robust and conscious risk-management process should have occurred before deciding whether to continue the flight into the hills. This should have considered not only the risks listed previously but also the rewards. In this case the rewards would have been minimal, especially considering that I am now missing out on several months of flying and the last competition of the Australian season.

The task was set by me prior to arriving at the hill. An opportunity existed to change the second leg of the task to avoid the hills on a windy day once we noted the actual conditions, but I failed to consider this at the time.

There is a bright side to the story. I always fly with a Spot tracker located in a chest pocket for easy access. I activated the SOS button after crashing. Everything worked as advertised and very expeditiously. I received a phone call from Spot HQ in less than two minutes and an ambulance was despatched.

So what's the damage? I get to ponder my mistakes for eight weeks while wearing both neck and hand braces while spinal and thumb ligaments heal. At least I'm told I should make a full recovery after a few months. Lesson learned—I'm sure I'll be a bit wiser for next season … and hopefully someone else can learn from my mistake!

Deadly decision

David Wood

image | Luxo

I'd test-flown this paraglider at 10,000 feet over the Himalayas and as far as I could tell, it flew fine. It was a Summit XC2 with about 140 hours on it. The pilot selling it was experienced and hadn't had any problems with it. My instructor knew the wing and said it was a good buy. The price was right so I snapped it up and headed back to Bali excited for the July–August flying season.

I mean, they said it's good, so it's good, right?

Wrong.

Very wrong.

The wind was perfect and the sun shining on my first day flying my 'new' second-hand wing in Bali. I flew back and forth along the Timbis Beach ridge in stable onshore wind and everything went perfectly. That is, until Big Ears.

Big Ears is a basic technique involving collapsing just the edges of the wing to reduce wing size and lose height. I was performing Big Ears to lose enough height to land back on top of the ridge. But something felt wrong. The wind was a bit louder in my ears and the wing sluggish, and I was losing height faster than felt comfortable. So I quickly released Big Ears and after a bit of a jerk, the wing returned to normal.

I suspected I'd just experienced something I'd only heard about in theory lessons, called a parachutal stall. I was pretty concerned because I needed Big Ears soon to top-land, and I wasn't willing to risk a top landing unless I knew 100 per cent what my wing was going to do. Unfortunately, I had no idea how dangerous a parachutal stall can be.

I performed Big Ears five more times to see if I could avoid a parachutal stall, work out how serious the issue was, and perhaps work out how to control it prior to landing. But on the sixth attempt, the wing surged overhead quite suddenly and although I recovered quickly, I was a bit shaken. I decided not to do that again, and found a way to land safely without Big Ears.

The instructors thought it must be out of trim, but there was a possibility I may have been causing the issue by keeping a 'wrap of brakes' on—meaning slight brake—during Big Ears. I didn't think I'd had any brake on, but wasn't 100 per cent sure, and I didn't want to post my wing to Australia and get it checked if I'd just been making a dumb mistake the whole time. The instructors agreed it was reasonable for me to try Big Ears one last time with absolutely no brake on to be sure I wasn't causing the issue, but that the decision was up to me.

With my instructor in radio contact and watching me, I took off for one final Big Ears attempt. He had me gain more height and go further out over the ocean as a precaution, and watched while I did one final Big Ears, with absolutely no brake. The wing again went parachutal, confirming the problem wasn't pilot input. So now about 300 feet above the ocean and still quite close to land, I released Big Ears …and that's when everything went to hell!

The wing surged violently and terrifyingly forward over my head, then fell back behind me and surged violently again. I was so freaked out and hyper-focused on controlling my wing, I had no idea I was in full free-fall towards the water and possibly the cliff. I also wasn't aware that this was what a full stall feels like—something I'd only heard about in class. I just knew I had to control the wing and that today might be the day I die.

The instructor was still giving me instructions on radio, but it happened so fast that to this day I don't know if I recovered the wing on instinct or because I followed what he was saying.

But recover I did, finding myself about 120 feet over the water and heading straight towards the cliff. I managed to correct course and scratch back up the hill to hop just over the bushes and land … falling to my knees.

The instructor said I'd followed every instruction, recovered perfectly, and that it was an equipment failure. Thorough subsequent testing showed the leading edge had less than one second porosity! This means the air passes through the fabric in under a second, making it useless and not airworthy. The deadly trap was that the wing would fly perfectly well in most conditions—it wasn't until something went wrong that it might not respond without vigorous pilot input. So the honest pilot who sold it to me had no idea the wing was an accident waiting to happen.

What are my take-aways from this?

Firstly, read the manual. I now know the manufacturer recommends applying 50 per cent of speed bar before performing Big Ears. This would lower the angle of attack and presumably reduce the chance of stall (something never covered in my theory lessons).

Secondly, pay super close attention in theory lessons, soaking up everything. And it never hurts to repeat your classes. You never know when one piece of information (like how dangerous a parachutal stall can be) will help you make a life-saving decision, instead of a deadly one.

Thirdly, test your equipment when you buy it if it is second-hand (if it hasn't recently been checked) and every six months after that.

I've just bought another second-hand wing and it's been THOROUGHLY checked and certified to be in 'as-new' condition. I'm slowly building up my confidence and air-time again. I look forward to many fun years of flying with the wonderful community of pilots who continue to help me fly higher, further and safer.

Thermal lesson learnt

Chris Sieberhagen

image | CC0 1.0

It was a warm, sunny, late morning on an abandoned airfield surrounded by patchy red earth. You could almost see the thermals popping all around. It seemed like a good spot for winch-launch training, the instructor also being the country safety officer. It was almost 19 years ago now, at Dunottar Military Base, Gauteng, South Africa.

I was on a locally manufactured Fun2Fly Aztec, at the time a firm favourite with students. Looking at the historical data, it seems the glider was unrated and I think that the design was based on the Edel gliders. The material was Gelvenor with Dyneema lines, and they were manufactured from 1995 onwards. This would have been in about 1998.

I launched and was pulled up to maximum when I pulled the pin and released the cable, immediately starting to scratch around for a thermal. Suddenly, my guts dropped like I was in a freight elevator and I knew I had flown into a strong thermal.

I pulled the right brake to turn into the thermal and spiral up, but as I pulled, I exited the thermal. The cascading air on the edge of the thermal pushed down on the side of the wing on which I was already pulling the brake hard. Half the wing collapsed and I started to spin violently. I pulled the left brake hard to stop the spin, putting myself in a full stall. I dropped like a stone, but at the time, naively, I was not worried at all. The manufacturer stated that the glider would unfurl, unfold or otherwise correct itself within four seconds.

I looked up and saw that the downward motion caused by the upwards rushing air was pinning the folded part of the wing to the underside of the glider, and it was not unfolding as expected. The lines on the right were hanging slack, so there was no point in trying to pull on anything on that side. The left was on full brake to stop the spin, and when I released it slightly, I started spinning again. I still had height and was working through my options, but getting closer to the ground rapidly. I think it was at this point that I started getting concerned. We did not have reserves, something which was relatively unknown at the time, and the harness consisted of a basic seat-type arrangement with no padding.

I started making small pistoning movements with the left brake, from full to about 75 per cent to push the air from the inflated area of the glider through the cross vents to inflate the right side. My fear at this time was that the loose-hanging lines would get caught over the wing as it inflated.

I shouldn't have worried: the wing was not unfolding fast enough, and I hit the ground feet first. I did a parachute landing fall, something I was familiar with because of a skydiving course I had done previously. It was my good luck that the field in which I fell had recently been ploughed, with huge sods of freshly turned earth, partly matted with grass, cushioning my fall. I guess it acted the way a modern harness with foam padding would. Despite this, it was still a huge hit and I was shaken and hurt. I didn't move for a while, hoping that someone would come to help me determine whether there was any spinal damage before trying to get up. But it seemed that no-one had even noticed—as soon as I was released from the cable, their attention was focused on the next student.

I slowly moved, first my arms, then my legs and then sitting upright. My lower back hurt like I was kicked by a horse, but there didn't seem to be any sharp pains, grating of bones or other signs of damage. I stuffed the glider into the bag and walked back to the launch area, my anger growing with every step. So many thoughts passed through my head. Why did the manufacturer make promises that were not true? Why did my instructor not look after me, check that I was doing OK up there?

I handed the glider back to her and left—I can't remember what I said, but she passed it off as nothing, not filing a report. I left and didn't fly again for seven years. When I did return to the sport, I only flew coastal flights, and even in this relatively smooth environment, I would suffer from a debilitating fear every now and again. Inexplicably and illogically, I would fly along without any issues, no turbulence and all of a sudden I just had to be on the ground. It felt like a steel belt around my heart, pulling tighter and tighter. Fortunately, with time and regular flying, this phobia disappeared. I guess it was also a matter of confidence—with better information and easier access to it on the internet, I gained a much better understanding of how thermals work, what they look like, what to expect and what it feels like when you're up there.

I've been flying for 12 years now after the incident, and will continue to fly for many more years. What I learned from the experience is that when you're up in the air, you are on your own—there is no-one to take responsibility for your safety and really nothing anyone can do to help you. Their involvement stops the moment you take off—no matter how good your training and how safe your glider, it is your own actions that determine your fate. Secondly, you can never have too much information, and with modern technology, there is no excuse not to keep learning. Learn about aerodynamics, weather, learn from others' experiences, visualise potential situations and mentally practise your actions and reactions.

Be prepared for anything.

Drinking distraction

Name withheld by request

image | Carlosgg1961

It was my rostered day as tow pilot at the gliding club. I got there early so I could pre-flight the Pawnee and prepare everything in good time before the briefing. The weather was looking great, one of those beautiful winter days with clear blue skies and great visibility.

I checked the aircraft over thoroughly in the hangar and everything seemed fine. Fuelled and oiled I strolled over to the clubroom for the daily briefing. It looked like an ideal day for a tow pilot—nice weather, not too busy and not too hot (unlike summer!).

After the daily briefing I strolled back to my car next to the hangar and collected my headset, kneeboard and my camelbak hydration pack to put them into the aircraft. The camelback went in its usual place on the parcel shelf behind my head. I left the headset on the seat ready. I pulled the Pawnee out of the hangar, hooked up the rope and waited till the first glider looked ready to launch, then I started the engine.

As it was the first flight of the day I did a full magneto and power check before take-off and all appeared normal. I taxied into position in front of the glider, did my pre-take-off checks, moved the stick around the four corners to check 'controls full and free', took up the slack in the rope and then we were off. Full power, keeping straight with rudder, let the tail lift, and then airborne. A few gentle turns and at 3000 feet the glider released.

Good lookout, power reduced, left turn to give separation from the glider and then back to the airfield for the next tow. As I turned onto finals the picture ahead looked good for the approach.

I reached down with my hand for the flap lever, a handbrake-style lever on the left cockpit floor. Depressing the button I pulled the lever up to select the first stage. Part way up I felt a solid restriction and the lever wouldn't go any further.
I could feel it wasn't locked correctly in position so I pulled it a bit harder to try and get it to lock. The restriction felt even greater the more I pulled. After several more attempts it still wasn't moving.

The picture out of the front windscreen started to look like I was getting too high, but with one hand still on the flap lever and one on the stick I didn't have a spare to reduce the throttle. The aircraft continued along finals.

What to do now? I slowly released the flap lever back to the floor. The lever moved down all the way as it should and the flaps stayed locked up. Now I had a spare hand for the throttle.

At this stage what I should have done is performed a go-around and done a simple flapless landing. What I actually did was reduce the throttle to idle in order to correct the rapidly developing overshoot, pointed the nose down and tried the flaps again. Same problem. Jammed whenever I got the lever part-way up. I tried again with more force but still it did not work.

I glanced down just to make sure I had the correct lever (this particular Pawnee also had a similar positioned lever for spraying) and yes, I had the correct lever but what I noticed was the blue pipe of my camelback leading down to the flap lever.

I immediately knew what had happened.

I always carried a camelbak in the cockpit while towing to stay hydrated as often there was little time for a drink stop on a busy day. I usually left the pipe dangling down from the rear parcel shelf on the left side close to my elbow so I could grab it during a turnaround and have a quick drink. The long pipe must have dropped completely down and got caught in the flap lever.

With no flaps an overshoot was now looking likely, but I still persisted with trying to get the flaps down. I ran my hand down the camelbak pipe and pulled it as hard as I could. Finally, it came free. I then grabbed the flap lever from the floor and pulled it up. It worked perfectly and I took both stages of flap at once.

My attention returned to the front of the aircraft and I realised that I wasn't going to make the runway as I was much too high. I applied full power and went around. But in my rush I left the flaps down. In this case it didn't really matter as the Pawnee had masses of extra power. I realised when turning crosswind the flaps were still down and rapidly raised them.

The following circuit and landing were uneventful but I was glad to get back on the ground. As I taxied back the next glider was ready. I taxied briefly off the runway to check the flap lever and as I looked down I noticed the cockpit floor was wet. I pulled on the drinking tube again and realised the bite valve on the end was missing. It must have been that which jammed in the flap lever and when I pulled it came off. I quickly located it on the cockpit floor, reinserted it into the tube and stowed it all on the parcel shelf, this time well out of the way of the flap lever. The rest of the day's towing was uneventful.

So what did I learn in those seconds which seemed like a lifetime?

'Check controls full and free' means all flight controls, including flaps. Do it before every flight because you never know what might be in the way.

I had checked the flap operation fully during the daily inspection, but at that point my camelback was still in the car so they moved freely. If I had done it prior to take-off I would have had the problem on the ground.

Always fly the aeroplane. Don't get distracted, and especially not on approach, or when low. If in doubt go around, climb higher and troubleshoot the problem at altitude.

Practise your flapless landings. One day you might need to do one for real.

And don't forget to stay hydrated!

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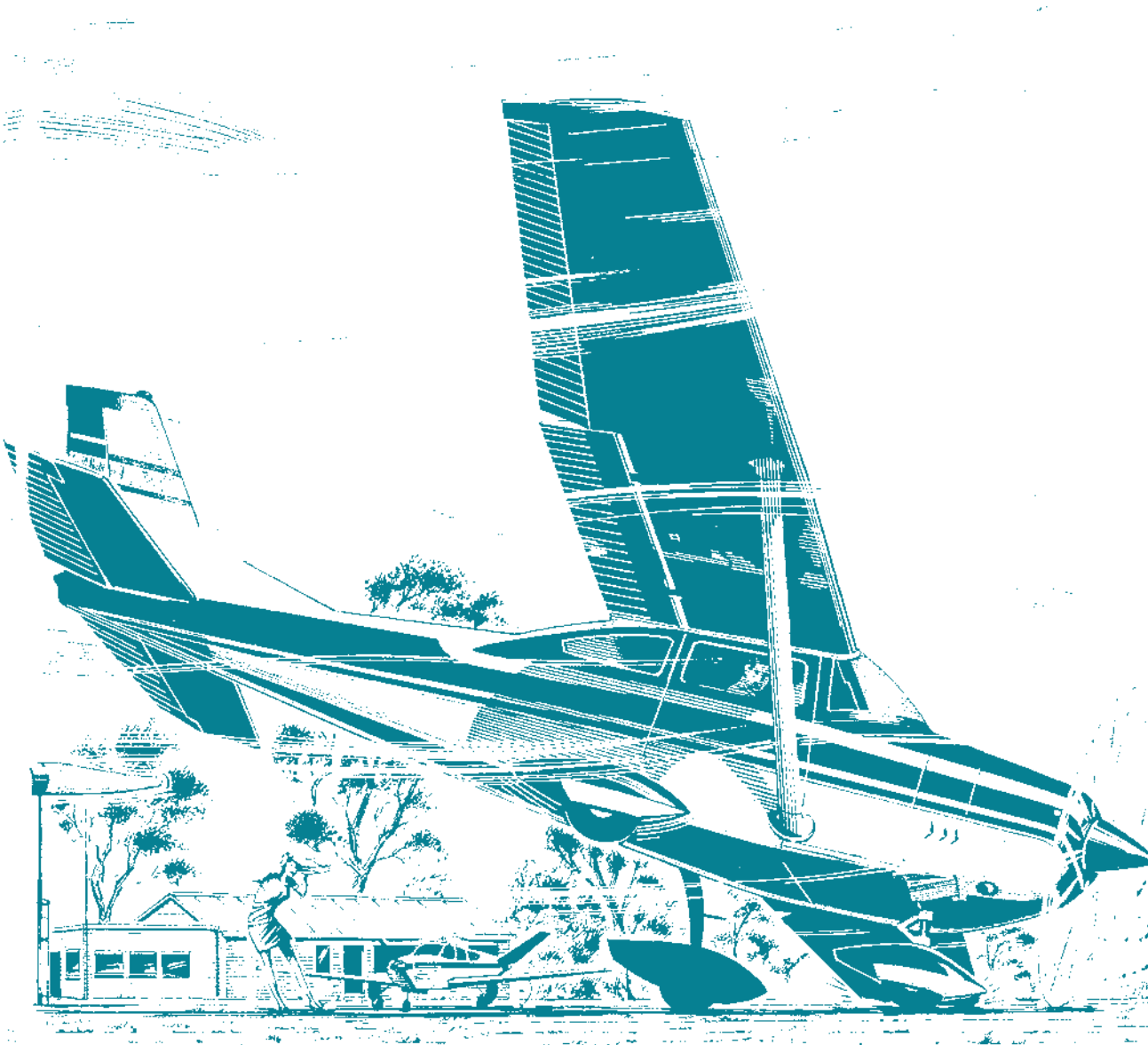


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