



Australian Government
Civil Aviation Safety Authority



Flightsafety australia

CLOSE CALLS SPECIAL Volume 2

DECISION-MAKING | FUEL MANAGEMENT | HUMAN FACTORS | SITUATIONAL AWARENESS



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HAVE YOU HAD A CLOSE CALL?



Often the experience is something you'll never forget and you've learnt a valuable lesson. Why not share your Close call so others can learn from it too? Articles should be between 500 and 1000 words.

Email fsa@casa.gov.au with your story or a request for a call back. If we publish your story, we'll give you **\$500** for an article you've written yourself or **\$250** for a story over the phone.

If we publish your story, we will not include your name if you ask us not to. If you have video footage, feel free to submit this with your close call.

Please do not submit articles regarding events that are the subject of a current official investigation. Submissions may be edited for clarity, length and reader focus.



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Introduction

Aviation is complex. There's a lot to know, some of which has to be instantly recalled under the stress of emergency, and the detail seems to go on forever. So how do we learn and retain the knowledge that has the potential to save our lives? The answer is as old as humanity itself: stories.

In every culture, storytelling is a fundamental way of imparting knowledge and insight. The holy books of great religions of the world are all based on stories, as is the wisdom of indigenous peoples in every continent. It is perhaps telling that the Christian bible contains hundreds of stories, but only 10 commandments.

There is increasing scientific proof that stories are a powerful communication tool. Professor Uri Hasson of Princeton University conducted experiments where subjects watched a TV drama and related the story to another participant. He found there were shared patterns of brain activation in study participants, regardless of whether they were watching, remembering, or imagining a scene. For pilots, that means the involvement of reading a gripping story of VFR-into-IMC flight or hearing a tense tale of fuel management gone wrong, is a powerful learning tool with a strong message. Experiencing the visceral unpleasantness of these situations, even on the page, provides a strong incentive never to endure them in real life.

Aviation has been no stranger to the great human tradition of wisdom through storytelling. Hangar stories ('There I was, nothing on the clock!') are at least as old as powered flight itself, and we wouldn't be surprised if historians discovered the Montgolfier brothers (inventors of the hot-air balloon in 1783) and their collaborator, Pilâtre de Rozier, shared hair-raising tales – which might well have involved in-flight fire, perish the thought.

This Close Calls Special is the latest then in a long tradition of aviation safety storytelling. Read, enjoy and let the words take you to places and situations you would never want to visit in real life. That way you will learn.

The *Flight Safety Australia* team



image: Dreamstime.com | Joggie Botma

Skydiver near miss

Complacency nearly led to horror, in an incident that still makes this pilot wince

By a *Flight Safety Australia* reader

Having just read your latest Close call, I was reminded to describe one of my own from many years ago.

At that time there was a very busy skydiving operation on our airfield, which operated almost continuously each day on the weekends.

The jump plane pilot and some of the skydivers were friends of mine and I enjoyed having them at our field. It provided entertainment and a social feel around the club and the jump pilot provided a sort of Unicom service to inbound or overflying aircraft.

I was very comfortable integrating my flying with their jump operations – maybe a bit too comfortable, as it turns out.

As most people would know, the jump aircraft makes many radio calls to forewarn of their drop time. The jumpers typically exit the aircraft at around 10,000 feet and open their canopies at around 2,500 feet after a 45-second freefall.

This usually gave a very comfortable margin above circuit height and, once the canopies are open, they are very easy to see and avoid.

... then saw that it was the suspension lines of an opening parachute – right in front of me!

On this particular day, there was a moderate southerly breeze blowing, meaning the jumpers were dropped to the south of our field to compensate.

As I took off for a flight to the south, I heard the jump plane give its usual calls, '2 minutes to drop ... one minute to drop ... drop complete'.

My aircraft is a high-performance aerobatic type which climbs very well and that, combined with the fresh southerly breeze, meant that as I crossed the airfield southern boundary fence, I realised I was passing through 2,500 feet – at about the time the canopies should be opening.

I looked up through my canopy to see if I could spot any jumpers, but could not see anything. As my gaze returned to looking forward, I was puzzled to see a strange dark line running down my canopy which, for a slit second, I thought was a crack, but then saw that it was the suspension lines of an opening parachute – right in front of me!

I simultaneously rolled and pulled hard to avoid the jumper and missed them by about 15 metres. I am convinced that in a less agile aircraft, I would have hit them.

I went back and landed in a state of shock, then apologised to the equally shocked jumper.

Lessons learnt: This was totally my fault and it was nothing more than luck that I missed the jumper.

Years later, I still think of how awful the consequences could have been.

Although I am embarrassed by it, I thought I should send it in for publication so that others may learn from it. 🌀

Think first, fly later

Startled by a near miss, this pilot didn't plan the next leg, near controlled airspace

By a *Flight Safety Australia* reader

I was in Western Australia for navigation training to complete my private pilot's licence.

The flight training school was in a small-town airport. I was due to conduct my third solo navigation flight, which would take me near controlled airspace around Jandakot. The trip there was fine. The weather was actually clear and, as I came in over the boatyard, I could see the city in the distance.

I made my inbound call and was cleared to the airport to join the circuit to runway 24R. Okay. I had the ATIS, VTC, CASA's Visual Flight Rules Guide, my ERSA notes and clearance. I maintained 1,500 feet and headed towards downwind. There was a bit of wind and a few bumps, but nothing out of the ordinary. I was looking forward to approaching downwind and abeam the runway threshold as I could go through my checks, relax and concentrate on the approach.

I must have just passed the Kwinana Freeway when I heard the tower call 'VH-XXX, EXPEDITE DESCENT!' That was me!

I looked to my right and the Twin Comanche I had seen a few seconds ago passing the runway threshold on take-off was now about 100 feet below me, heading towards me and climbing really fast. We were so close that I could see the look of horror on both pilots' faces in the twin. As I shoved the yoke forward, I felt the negative Gs lift me out of the seat. I saw and heard the twin go behind and above me. I'm not going to say how near it was, but it was closer than anyone with a healthy respect for mid-air collision avoidance would ever want.

The first thing I did was question what I had done wrong. Why were we so close to each other? 'VH-XXX expediting.' It sounded more like a question than a reply. I started the downwind checks, gathered myself a little and set up for the approach. I was turning base when I had my checks finished and clearance to land. I made the landing without any more hiccups, just with an overwhelming feeling of wanting the flight over.

I pulled in to get fuelled up again. The whole time I was thinking about what had happened on the trip in. All sorts of things went through my head. I started telling myself I had begun descending too late or hadn't been paying close enough attention. I decided that the sooner I got out of there and completed my trip the better. Wrong.

I fuelled up, had a quick look at the charts and flight plan and made my way out to taxi. I checked the Armadale outbound procedure again. Looking back on it, I didn't feel comfortable with exactly what I had to do, but thought if I got up there and took it one step at a time, I should be OK – just had to remember what my instructor had drilled into me.

I was cleared to runway 24L for my southern departure. I did my checks, took off and grabbed the Visual Pilot Guide for Jandakot to get my bearings. It put me on the downwind leg, departing and, with the nose pointed at the prison, I lost sight of it quickly. 'Damn. OK, I can learn from that.' I was on top of the train lines and made a turn to my right for track to Armadale.

I was now ready to make it over the hills and had just one more decision to make. I could see the television antennas on the top of the hills and remembered my instructor's voice telling me, 'Just keep the antennas on your

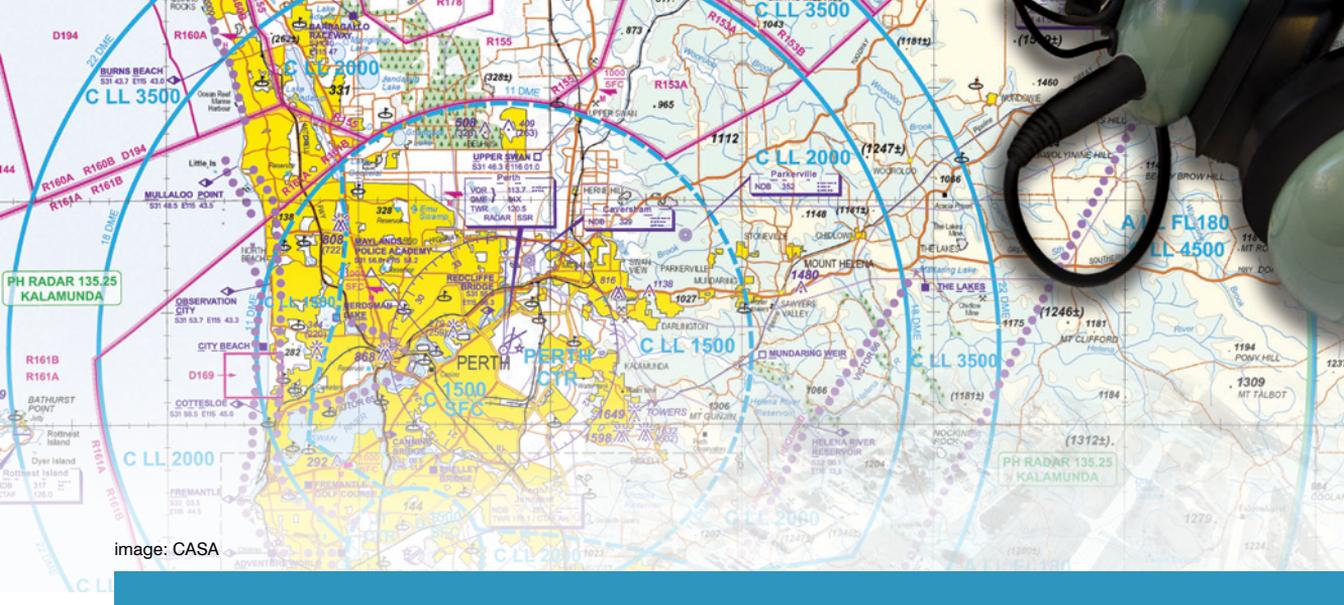


image: CASA

right.’ Hang on – or had she said, ‘Just keep to the right of the antennas’? She had said it so many times! Why couldn’t I remember?!

After identifying, I was confirmed as the culprit and told exactly where I was – in controlled airspace.

I realised I had been so busy mulling over the inbound flight and what had gone wrong, that I had done the worst thing possible. I had not planned properly for the next leg. I had absolutely no idea which side of the antennas I should be on! Fifty/fifty is a reasonable gamble, but I realised, all too late, that gambling was what I was doing.

It was too late to change direction as the towers were coming closer every second. I decided to bite the bullet and track to keep the antennas on my right. I tuned into Perth radar. Perhaps I could just keep out of Perth Class C airspace. It started out okay. A Qantas aircraft was cleared to 6,000 feet. Good, good.

‘Aircraft north of Jandakot, identify.’ My heart sank. I pressed the transmit button and meekly stated my call sign and position. After identifying, I was confirmed as the culprit and told exactly where I was – in controlled airspace. As I put my finger on the

VTC, it all made perfect sense. Air traffic control squawked and vectored me without further incident and, truth be told, they were incredibly considerate, considering the position I had put myself, and potentially others.

I think my troubles started by not fully assessing my near-miss after landing. I should have called someone and gone through what had occurred before I took off on the next leg of my flight. I hadn’t resolved the mystery of what had happened, so I lost confidence in my own abilities and I took that insecurity up on the next leg with me. There could have been much more serious consequences.

I decided to use this as a case study on myself, to learn more about what my development areas needed to be and work on them. I learnt a lot and am now going through my commercial licence training.

Lesson learnt: In hindsight, my approach was by the book and it was the pilots of the twin who were in the wrong. I don’t know what happened to them, but hopefully they learnt from it too. However, there is no excuse though for not being 100 per cent sure of where you are going to be flying on your next leg. ➡

Double trouble

It has often been said that a pilot's initial twin rating is the riskiest undertaking in their flying career. This story provides ample evidence to support that theory.

By Ian Robinson

I was only a 100-hour single-engine PPL when a cash injection allowed a visit to a small flying school, 'guaranteeing' a twin rating in two days for \$1000.

I was introduced to an Apache whose paintwork alone suggested that its performance might be just a little compromised. No matter, it was a beautiful day and my youthful instructor was full of enthusiasm. The aircraft passed its pre-flight and off we went for an uneventful and very enjoyable first flight.

After hours of C150s, the old Apache felt like a DH Mosquito! There was no single-engine work until the last 20 minutes, when the instructor demonstrated zero thrust, and I had my first taste of the foot forces required.

Lesson 2 was more of the same at altitude, but included a minimum control speed (VMC) demonstration, with a complete engine shutdown and restart using airflow. It was going well and the instructor decided on one more single-engine drill before heading back for circuit work. No problem – once again the engine was completely shut down, the prop feathered and we began a descent.

'We'll do a single-engine approach and full-stop landing as an introduction to the low-level stuff,' the instructor said.

It all sounded just fine at the time and our recovery to short final went by the book; however, that was where it all started to go very, very wrong.

I heard a call from the right seat, 'Short final, *\$*#, no gear! Go around, go around!' I had already performed the downwind checks and confirmed 3 greens, gear down and locked, so I did hesitate momentarily. My instructor added full power on the live (right) engine and took over the controls, yelling, 'Crank it, crank it!'

We were not gaining height but the ground ahead of us did rise.

We proceeded very slowly down the runway at about 30 feet, with him flying and me watching a propeller flicking over extremely reluctantly, and the engine not starting. My memory of the next few minutes is quite likely to be partially suppressed forever, but I'm pretty certain everything was forward by this time, so there was fuel. Not as helpful, though, were full flap and gear down! (Yes, it was down!)

As low-level passes go, ours must have seemed interesting to bystanders. We were not gaining height but the ground ahead of us did rise. I can remember suggesting, 'We put it down' while we still had runway, but the instructor elected to turn left, away from the rise. The next few memories are a series of still images and sound bites in my head. A tree, the sight and sound of the upper twigs running past the canopy, a house, a dog ... and then all was still after an incredibly soft impact on thick grass.

The next image is of the wreck, about 50 metres away!

The aircraft's track through the grass suggested a large yaw angle on ground contact. We must have been very close to VMC, so any higher and we could have rolled and impacted inverted. As I said, the gear was down, so our problem had been electrical, involving only the indicators.

Helpful people soon arrived and, after much headshaking, I was driven to a cheap motel for the night to be ready for the investigation next day. Unhurt, but pretty shaky, I decided to shower and relax. Would you believe it, the shower tap labels were reversed, so my attempts to cool the water resulted in a scalded shoulder? I had survived the crash, only to be burnt in the bathroom!

Lessons learnt:

- A zero thrust setting is safer than a complete shutdown at low level.
- Instructors can make mistakes. (Everything forward, gear up, flaps up, blue line, etc. – it just didn't happen.)
- An old aircraft may not perform by the book.
- A controlled forced landing straight ahead would have been better than pressing on and losing control, even if the gear had been up.
- Avoid cheap motels. 🚫



images (modified): CASA | Piper Apache/Aztec, Wikimedia Commons | Fluffball

CRASH COMIC

Burning Desire

by Dale Dieckmann

MY LOVE OF FLYING STARTED AT AGE 3.

AND IT ONLY INCREASED FROM THERE.

I STARTED FLYING IN 1977.

AND SOON I WAS ENDORSED ON MANY TYPES OF AIRCRAFT.

HOWEVER, MY DREAM WAS ALWAYS TO OWN MY OWN AIRCRAFT...

WHEN I FOUND A KIT I LIKED, I IMMEDIATELY DROVE TO THE FACTORY FOR A TEST FLIGHT.

AND IT WAS LOVE AT FIRST SIGHT.

SOON I WAS BEGGING MY WIFE TO LET ME TAKE A SUBSTANTIAL AMOUNT OF MONEY AND TURN IT INTO AN AEROPLANE!

WITH MY WIFE'S BLESSING, I WAS SOON DEEP IN TO THE BUILD - WITH MY SON, WHO'S ALSO A PILOT.

FOR 18 MONTHS WE WORKED TOGETHER MOST WEEKENDS AND MANY LATE NIGHTS - CUTTING, BENDING AND RIVETING THAT DREAM INTO SHAPE.

ONE DAY, FINALLY, WE HAD A PLANE SITTING IN THE DRIVEWAY!

WE WERE ECSTATIC WITH THE WAY IT TURNED OUT - AND IT WAS ONE OF MY BEST DAYS EVER WHEN WE GOT THE ENGINE GOING.

ANYWAY ... OUR BIG MOMENT HAD ARRIVED: TEST-FLIGHT DAY! WE GOT TO THE AIRFIELD, FITTED THE WINGS AND CHECKED EVERYTHING.

UNFORTUNATELY, OUR CONSTRUCTION HELD A DEADLY SECRET ...

SIX CRUCIAL RIVETS ON THE RIGHT-HAND WING HAD TRAGICALLY MISSED THEIR MARK.

I'D FLOWN 6 HOURS IN THE FACTORY PLANE SO FELT GOOD, BUT FATEFULLY I FORGOT TO ONLY PUT 20 LITRES OF FUEL IN THE TANK - A DECISION THAT ALMOST COST ME MY LIFE.

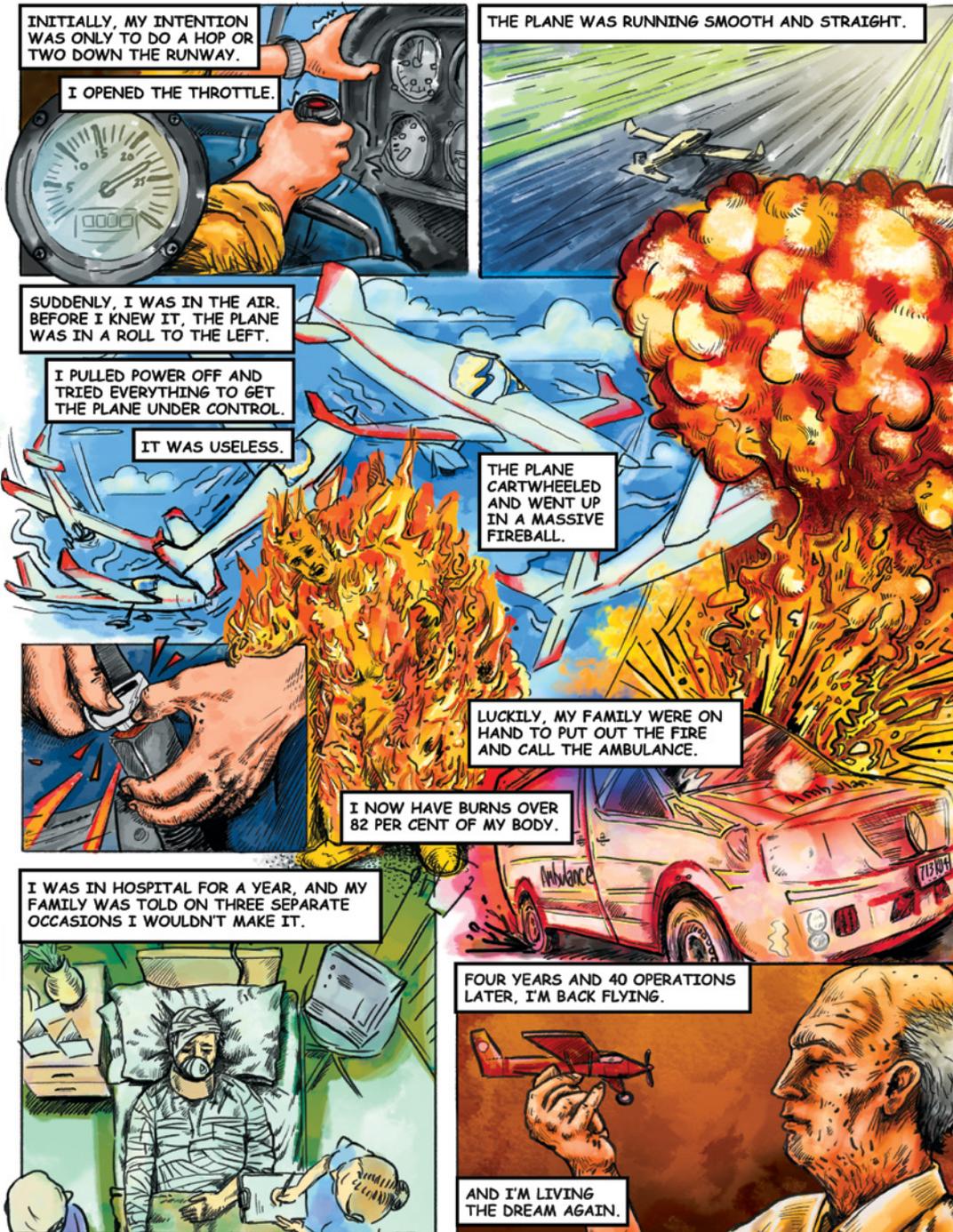


Illustration: Sebastian Danta

POSTSCRIPT: I underwent 43 surgeries and lost a section of my bowel. My lungs were damaged from inhaling flames and smoke and I have reduced mobility because of burns to my feet. The doctors couldn't work out how I was still alive. I told them I was a tough old bastard. I'm very happy to still be in the land of the living, and I still love aviation, although I no longer fly. Every week I go to the RAAF museum at Amberley and work on restoring an Avro Anson.' Dale Dieckmann, 2019

Something to watch

They say time flies when you're having fun

By a *Flight Safety Australia* reader

I was doing a short flight with a friend from Cambridge (Hobart's GA hub) across to Bruny Island to have a look at some oyster farms.

The day was clear, if a little cool, and glorious for flying. All went smoothly as we tracked south of Hobart, my passenger enjoying the view after getting over a slight case of nerves. Seeing your own city from a light aircraft – a Cessna 172 in this case – is always fun.

We landed on Bruny, enjoyed the oyster farm inspection and then took off again a couple of hours later. The plan had been to return directly to Cambridge, but we had plenty of fuel and no shortage of time, so I asked my passenger if he'd like to have a look at the D'Entrecasteaux Channel which lies between Bruny Island and the south west of mainland Tasmania. Having spent plenty of time in that area – he owned a shack a bit further down the coast – he was very keen to see it from the air.

Why not, on such a glorious day?

I made a departure call from the Bruny strip, noting it was 'time two two'. Knowing there was plenty of fuel on board, I calculated that if we were passing this point by one zero on the return, we would be well within the limits of the reserves required.

We flew south west for a bit, away from home base, tracking along the coast and enjoying the view. My passenger and I were both keen divers, so we got to chatting about the spots we were seeing, what the various mountain ranges were that we could see off to the north and how stunning this part of the world was.

Rounding South East Cape, I checked the time again to make sure all was good. Yep, two two; plenty of time to make that one zero requirement. I decided to track a bit further up the coast, knowing the scenery just got better and better in this remote part of the state.

For the first time in 4 years, my watch battery had failed.

Ten minutes later I figured it must be time to start heading back. I checked my watch again. Two two. That seemed oddly familiar.

'What time is it?' I asked my passenger. 'About ten to,' came the reply.

Bugger. For the first time in 4 years, my watch battery had failed.



images: (modified) Adobe Stock | Oleksandr Moroz | Jan

We didn't track coastal – I simply turned the nose directly towards Cambridge and said we'd best get ourselves back home. We still had plenty of fuel, but I'd certainly given myself a glimpse of how quickly things can go wrong.

So what should I have done? Carried a back-up watch? Nobody wears 2 watches. Been more aware of the time? Yes, perhaps.

What would have been far more sensible was to have planned the flight – even if just a rough, written sketch, with some timing points written in. By just looking at my watch and expecting the one zero that would indicate a need to be at a particular point, I had no inbuilt mechanism to guard against the watch's battery life coming to an end. If I had been noting time on a written plan, it would have been obvious very quickly when I wrote the same numbers several minutes apart.

It didn't cause a problem on that short flight where the safety parameters were wide. On a longer cross-country flight, when diversion decisions could have been affected by assumed endurance, it might quickly have become serious.

Lesson learnt: The lesson is simple and one that we're all familiar with: plan the flight and fly the plan – it builds in safeguards against the most unlikely of errors. ➤

A few home truths

A bemused pilot ponders domestic life and aviation – and their interaction

By a *Flight Safety Australia* reader

You can learn a lot about safety by listening to hangar talk.

What do you do on a 'touch and go' when the flaps refuse to retract and the end of the short strip is fast approaching? Recycle the flap settings – that sometimes works. It did for me.

What happens on a cold starry night at 5,000 feet, miles from anywhere, when the previously smoothly purring single engine begins to cough and splutter? Apply full carby heat and hope any ice is melted quickly? Again, that worked for me.

Acting as check pilot during club competitions in a venerable Cessna 150, what is the correct protocol when the ex-RAAF PIC with thousands of hours on the most sophisticated aircraft, but few on the Cessna, is about to 'go-round' with full flap extended? Say 'flaps' very firmly and audibly. And we cleared the trees bordering the country strip with room to spare.

Sometimes, however, a problem arises which you have not heard discussed. One occurred when, as a student, I was completing my final five-hour navigation exercise to gain an unrestricted licence. The instructor arrived at the field late, but I had prepared well in advance and we took off soon after.

Three incidents occurred during the flight, none of which I really understood until several days later. I had planned for A050 but the instructor told me to climb to 9,500 feet, saying he would do the necessary communication with ATC. I was happy to 'aviate' and 'navigate', leaving the 'communicate' part to him.

Soon after reaching the new level, I heard a mildly reprimanding ATC on the radio saying we were on the incorrect frequency and should change to the one he was giving us. Embarrassing, but not really my problem. I thought the instructor was using the incident to impress upon me the importance of correct communication. He definitely succeeded.

Arriving over a country airport where a landing was planned, I was meticulous in letting down to circuit height on the 'dead' side and accurately flying the crosswind and downwind legs. I was really anxious to impress this instructor. Imagine my horror when, on turning base to finals, I was asked, 'Do you intend to land downwind?' The windsock clearly showed I was landing into wind. I pointed out this fact to the instructor who then agreed with me and we landed uneventfully. Once again I assumed this was part of the test I was undergoing to become an unrestricted pilot.

Suddenly, with no warning, the engine stopped.

Fuel checks on the ground showed we had sufficient fuel for the flight home. Back in the air, I was given an unexpected diversion to an unknown locality. I thought I handled the diversion well. Just 15 minutes out from home base I was feeling comfortable with my day's performance. True, the instructor had not said much on the flight but we were not there to chat; my job was to convince him that I flew well enough for my licence restriction to be lifted. Suddenly, with no warning, the engine stopped. From the startled look on the instructor's face, I knew this was no test.

It was the only time before or since that I have had an engine quit on me in flight. The silence is awesome. In less time than it takes to tell, I recognised the cause of the engine failure and fixed the problem by reaching down and changing fuel selection from left to right tank on the console of the Cessna 172. The engine immediately started. I had run the left tank dry.

Before that day, I had always flown with fuel selection on both, ignoring the left/right switches. On this flight the instructor overrode my choice, saying that tanks should be alternated each 30 minutes for a more balanced flight. He took it upon himself to make the change, doing so several times – and with no real choice I was not going to argue with him. But somehow, in the final stages of this flight, he forgot to make the switch – the left tank was exhausted. No harm was done as the other tank held adequate fuel. I completed the day's exercise successfully.

A few days later I found out why my instructor, normally really sharp with his instruction, had been so far off his game as to make 3 errors with a student, one of which (at least) could have been serious and all of which were embarrassing and unnecessary.

That morning, before he set off for the training aerodrome, he and his wife had argued seriously enough for the D-word to be used. He had spent the day in a highly emotional state of mind. Sitting beside me for 5 hours with little to do but chew over his worries, he became even more preoccupied with his domestic problems and less aware of what he was doing.

Lesson learnt: The safety lesson I learnt that day has not been forgotten – flying demands total concentration. Emotional worries and personal concerns must not be taken into the air. 🌀



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Not so simple after all

Skipping vital checks almost plunges this pilot and his passenger into the ocean

By a *Flight Safety Australia* reader

Many years ago I was over the moon to be offered casual weekend work flying joy flights in an aerobatic, radial-engine warbird.

I had just moved into a new management role with a large operator but I missed the line flying. Therefore, I was really looking forward to being paid to roar about and turn upside down – a complete contrast to my previous flying role.

It had been many years since I had used my aerobatic endorsement and I had never flown this type of aircraft before, but a check flight with the chief pilot quickly quelled any reservations. My aerobatics were surprisingly tidy. The aircraft was designed as a training aircraft for Communist-bloc pilots and was a delight to fly. The fun of rediscovering my aerobatic skills reminded me why I had pursued a career as a pilot.

I was rostered to take over from the other pilot at lunchtime the next day, with 3 joy flights to conduct in the afternoon. Each flight followed a similar profile – a short transit to the training area before flying a basic aerobatic sequence consisting of loops, slow rolls, barrel rolls and stall turns.

I did feel a little uncomfortable with my lack of familiarity with the aircraft. As a full-time pilot, I had logged many hours flying one type and was used to knowing my aircraft and its systems inside out. However, I knew that if I took things slowly and regularly referred to the checklist, I would be OK. The pneumatic air system and metric gauges were unfamiliar to me at first but the simplicity of the aircraft meant I was soon able to dispense with the checklist.

The pilot I was taking over from told me that he had refuelled the aircraft so I should have enough fuel to finish the day without needing to refuel again. The endurance was specified as just under 2 hours. Take-off to landing was about 20 minutes, plus taxi time, so I calculated that my 3 flights would leave me with sufficient reserves. The fuel gauges, like most in this category of aircraft, were virtually useless.

It was a beautiful day for flying – clear and cold. The first 2 passengers left the hangar with ear-to-ear grins and empty sick bags. The final flight ended with the sun low in the sky and we were treated to a beautiful orange and pink sunset as we pitched into the circuit with the canopy cracked open

to let the bracing slipstream wash over us. After taxiing back the long way to let a large multi-engine aircraft depart, we shut down in front of the hangar as the customer's husband and young children filmed from the tarmac. It was the passenger's birthday and her husband had bought the flight for his wife as a present. I helped her out of the cockpit, another satisfied customer and congratulated myself on a job well done.

I was proud of my flying and pleased my efforts to make sure the passengers enjoyed their flights had paid off. The only downside was that I had not had any break between flights. As each passenger unstrapped, I barely had enough time to do a quick walk around before greeting the next passenger and beginning the process again.

I spent half an hour cleaning oil off the cowl and fuselage while admiring the robust profile of the old warbird. Just before pushing the aircraft inside the hangar for the night, I ordered fuel so the oncoming pilot would not need to refuel before the next flight. I knew the refueller quite well and we chatted amiably as he set about filling the tanks.

I felt myself go white as I realised I had used every drop of the usable fuel!

As he completed the paperwork, he made some comment about thinking the tanks were smaller than they were. I thought nothing of it at the time but, after I pushed the aircraft into the hangar, his comment began to bother me. I checked the docket and saw he had pumped about 120 litres into the aircraft.

I felt myself go white as I realised I had used every drop of the usable fuel! It was sheer dumb luck that had allowed me to taxi back to the hangar without the engine failing due to fuel starvation. I was even more



image: CJ Nanchang

horrified when I recalled my track back to the aerodrome – over a large cold lake.

As a professional pilot I had never even come close to running out of fuel – that was the domain of cowboy operators and low-timers, wasn't it?

How could I have been stupid enough to put my passengers and myself in that situation?

Lessons learnt. On reflection, I identified a number of errors that contributed to my very narrow escape. I realised that I had failed to lean the mixture after take-off and consequently my fuel burn was much higher than predicted. If I had been more familiar with the aircraft, I could have been cued by the sight of the mixture lever being in an abnormal position during the transit to and from the training area.

Dispensing with the checklist was irresponsible, particularly as I was apprehensive about my lack of experience with the aircraft type. Furthermore, I had not visually confirmed the fuel level prior to accepting the aircraft from the other pilot or even once during the afternoon – a schoolboy error.

Did the other pilot say he had refuelled before, or after, his last morning flight? His casual assurance that I would have enough fuel for the rest of the flights would have been of little comfort to us as we ditched on our return to the airport. Just a simple glance inside the tanks between flights would have been enough to recognise the need for more fuel, but I had allowed time pressures to distract me from the most basic safety and airmanship checks.

The primary factor though was my complacency. I had convinced myself that flying a relatively simple aircraft on joy flights would be an easy task and I failed to take the appropriate amount of care. The memory of the happy family welcoming their mother after her birthday flight and the thought that I had nearly brought about her demise haunted me for weeks, but it was all that I needed to remind me complacency is a potential killer. 🌀

Punching holes in Swiss cheese

A cluster of small innocuous decisions can add up to an unexpected fright, as this private pilot now knows

By a *Flight Safety Australia* reader

It was December 2004 and I'd just got my PPL(A). I'd organised for a bunch of friends to travel down to Kooralbyn for a skydive. I decided to take 3 of them with me in a Cessna 172 from Archerfield to the short strip at Kooralbyn.

I conducted a basic plan for the return flight, leaving on Saturday and returning on Sunday and worked out the max fuel, based on the weights of my friends, who aren't the smallest of people.

Forecast temperatures were in the mid to high 30s, so it was definitely one of those hot and heavy situations. With that in mind, I thought there was plenty of runway at Archerfield to take-off and, by the time I need to take-off from Kooralbyn on Sunday morning, the fuel load will be a little less and the temperature a bit lower. The flight to Kooralbyn was uneventful and the skydive was eye-opening. But what was even more eye-opening than jumping from 14,000 feet was the flight home.

The next day I completed all the usual checks and dipped the tanks. I had intended to leave early, but after some breakfast banter, I didn't even make it to the aircraft until lunch, with the temperature well into the 30s.

With some basic mental calculations, I was cutting the fuel a little fine so I asked the locals if Avgas was sold here. At that time, they had none. I could make it to Archerfield but wouldn't want to run into any of the snap storms that Brisbane is renowned for and that were forecast for later that afternoon.

It was hot and my 3 passengers were heavy so I thought maybe the extra fuel was probably not a good idea anyway.

After starting the engines and completing the run-ups, I taxied to the short and bumpy runway. Brakes on, full power, Ts and Ps in the green, static RPM, brakes released and we were away – but not as fast as we should have been.

The end of the runway was getting closer and closer and my speed was not where I wanted it. I thought to myself, 'Those trees at the end are starting to get much too close for comfort'. Rotate speed couldn't come soon enough and as I pulled the stick back to get into the air, the trees were still too close, so I pulled back some more.

The end of the runway was getting closer and closer and my speed was not where I wanted it.

'BEEEEEP' the stall warning blared and my temptation to pull back on the stick even more was almost overwhelming. I was grateful for all the stall training during my licence course and, even though those trees were perilously close, I lowered the stick and managed to clear them. All the while my passengers were blissfully unaware.

I was sweating more than a little as I tracked for the circuit back at Archerfield. My left tank was reading zero and the right didn't look much better. Looking at the mixture lever, I noticed it was rich; I had forgotten to lean during the cruise and I gloomily thought, 'This could cost me much more than fuel money'.

As luck had it, I landed, taxied to park and shut down. I can't recall what level I dipped the tanks at after that flight but I clearly remember the wooden dipstick wasn't gleaming in the sunlight.

Lessons learnt: This experience taught me the utter importance of doing as you were trained – planning, stall recovery, calling forward to your destination to request airport information and denying passengers if the weight risk becomes too great.

This experience in my early flying life was invaluable, but hindsight makes me wish that I had simply planned and made decisions more effectively that day, rather than run the risk of becoming another entry in the chronicles of Swiss cheese. 🌀



images: CASA

CRASH COMIC

Tasmania or bust?

By Nasir Rakhangi

AT AVIATION COLLEGE, MY ROOM MATE AND I HAD A BRIGHT IDEA...



NEXT DAY, FLYING AT 4500 FEET WE FELT A VIBRATION THROUGH THE YOKE..



THE TACHO WENT ALL THE WAY- READING MORE THAN 3500 RPM..



THEN WE LOST ALL POWER... THE PROPELLOR STOPPED WINDMILLING... I PICKED A PLACE TO LAND..



IT WAS MIDDAY, SO YOU COULDN'T SEE TERRAIN SLOPES VERY WELL..

IT WAS A SMOOTH LANDING BUT SUDDENLY...!



WE SAW A STEEP RISE AHEAD!

THAT'S WHEN I GOT.. **SCARED!**



WE WENT UP THE SLOPE AND, AT THE TOP, BECAME AIRBORNE AGAIN..



WE LANDED AGAIN AND STOPPED JUST SHORT OF A FENCE.. THEN WE SAW THE WING WAS COVERED IN **OIL!**

THE OIL LINE FROM THE SUMP HAD A HAIRLINE FRACTURE!..

illustration: Steve Bloomfield

LESSON LEARNT: This pilot applied correct procedures for engine failure, made radio calls, selected a field, stayed calm and made a smooth landing. The author went onto a successful career flying large jets for an Indian airline.

Dogged by distraction

Distraction by a fellow pilot's skills caused this embarrassed aviator to review his limitations

By a *Flight Safety Australia* reader

The Cessna 305, or Bird Dog, made its debut overhead the jungles during the Vietnam War. Decades later, I was excited to be flying this aircraft for my first paid flying job. Boy, was I rapt!

Inspecting powerlines has to be one of the most challenging, demanding and exciting jobs around. The inspections of the wires and the vegetation surrounding them were made from a few hundred feet above ground level.

However, early morning flying was magnificent, with slivers of orange sunlight peeping over the horizon and the pristine crisp autumn air of outback NSW.

Tailwheel Cessnas that have not been ground looped are rare in Australia, so my chief pilot made sure I had a thorough checkout in the machine to avoid adding to the statistics.

The start of my first day went well. With the first 2 sorties going to plan, and after 4 hours of flying, I was feeling a little less tense. After a bite to eat, it was time to head back to base.

I went to top up the oil as the old Continental engine was a little thirsty. Opening the cowl, I removed the locking pin on the oil filler cap and started to pour in a litre of oil. Just at that moment a glider commenced a winch launch close by and climbed out in front of me at an impressive angle. 'Wow, that looks cool', I thought, as I finished topping up the oil and then closed and fastened the cowl, with their locking pins facing rearwards.

The usual company pre-take-off checks were completed without any abnormal readings. After a thumbs up from my observer in the back, I applied full power, smoothly and gently, my feet finely seesawing the rudder pedals, to make a good quality take-off for a budding amateur.

Departure track was 175 degrees and cruising altitude was 1,500 feet. I smoothly rolled left onto the departure heading while passing over the rural township.

Then I craned my head against the perspex window and my heart sank.

Unbeknown to me, there were droplets of black oil tracing my departure from the parking bay. After 10 more minutes of spraying oil droplets across the countryside, my oil pressure gauge thought it was time to let me know what was happening by dropping into the red. I quickly glanced to the side of it, but the oil temperature was only slightly higher than normal.

Then I craned my head against the perspex window and my heart sank.

Slick, glistening black oil covered the left wheel and strut. (During my initial checkout I had been told that, in the unlikely event of the oil filler cap being left off, the C305 would not siphon the oil onto the windscreen like most Cessnas, but would deposit it outside the cowl onto the fuselage and left gear leg.)

What an idiot! I had left the oil cap off the engine after topping up. My immediate thoughts were: Where will I land? How long have I been flying? How long do I have

before my engine stops? I will lose my job!
What is my rear observer going to think?

Automatically, I reduced power to not much more than idle and chose a slightly upward-sloping sheep paddock among the gentle rolling hills to put the Bird Dog down. After landing, the sheep quickly gathered at an inquisitive distance to see this red and white oily-looking machine, with a very red-faced pilot to match.

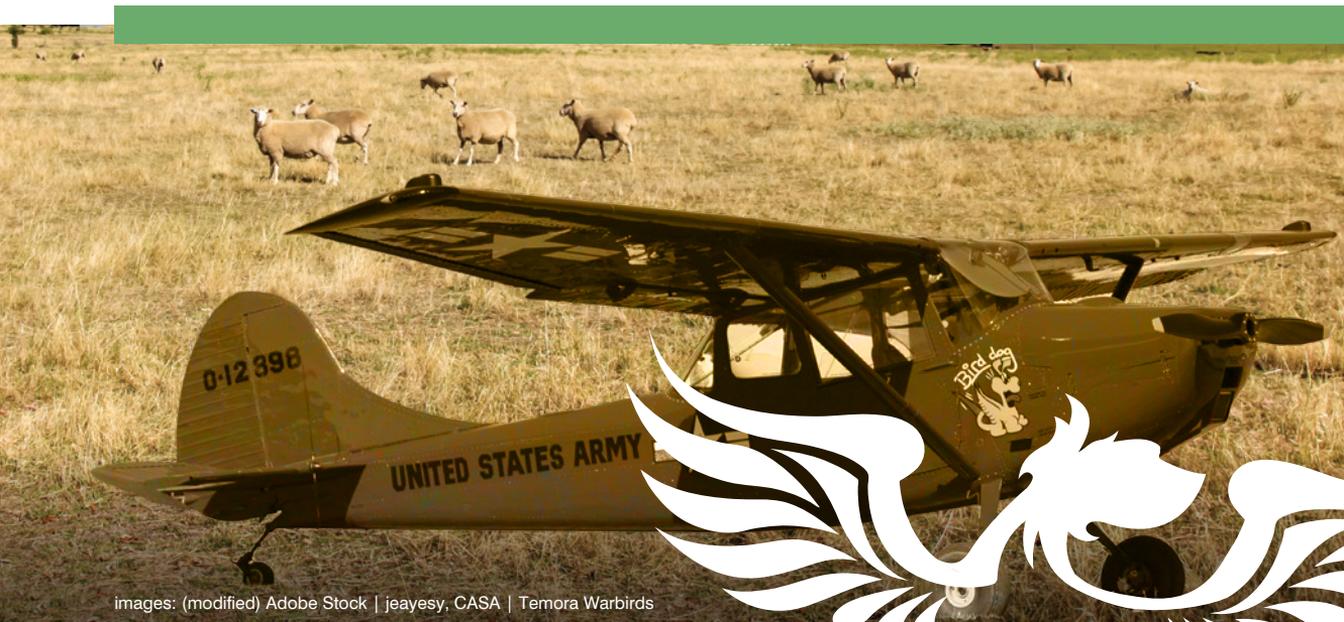
I quickly topped up the oil with the four-litre bottle in the rear of the aircraft kept (obviously) for the occasion. After checking that everything was back in place and oil cap on, I took off and flew back to base. The remainder of the trip was flown in silence. The boss was definitely not impressed, but thankfully did not fire me.

Some reflections on my flying that day:

- When I was filling up the oil, I was distracted by the glider launching. I shut the cowls and put their pins back in place, but didn't check the oil filler cap.

- After I jumped back in to take-off from the paddock, I noticed I had exited in such a flap I had left the master and the mags on.
- Fatigue. It had been a very early start and now was well past lunch. I make more mistakes when I am tired and, therefore, need to be extra vigilant, or just not fly.
- After landing in the paddock I should have talked to the chief pilot before flying again.
- What would the outcome have been if I had been flying over ocean, forest or mountains?

Lessons learnt: This incident was one of the best things to happen to me in aviation. It highlighted several things, as well as lowering my pride a notch or 2. Since that day, I have made a habit of doing a thorough inspection of my aircraft before I take to the air. Twelve years later, after flying over foreign countries, inhospitable deserts, oceans and dense jungles, I am thankful for the lessons learnt over the sheep paddock that day. 🙏



images: (modified) Adobe Stock | jeayesy, CASA | Temora Warbirds

Power line!

The skill of this pilot narrowly averted disaster

By a *Flight Safety Australia* reader

All too often we read or hear accounts of helicopters experiencing near-misses or collisions with power lines.

If the crew survives to tell their tale, their explanations of these events are many and varied. I always thought my training and vigilance in this high-risk environment would never let a near-miss or collision occur on any of my flights.

I had been deployed with my pilot to assist with firebombing duties as an air attack supervisor on an active fire in the Gypsy Creek area of the Bunyip State Forest east of Melbourne. I was an accredited supervisor with 10 years' experience in both rotary and fixed-wing aircraft.

Our working platform at this fire was a Bell 206 Long Ranger. Training included briefs on hazards and power lines and safety was always a priority – for good reason. The helicopter was mechanically sound, the pilot and I were fit, healthy and hydrated and the weather conditions on the day were hot and sunny, with a moderate wind and good visibility.

The early Autumn weather continued to be dry and the regular weather changes resulted in little if no rain. The fresh northerly wind that drove the fire for most of the day abated to calm conditions by early evening. The smoke from the fire settled into the valleys of the ranges and fire behaviour became quite sedate.

Firebombing operations ceased by last light and we were instructed to land at Noojee and rest there for the night before continuing operations the following day.

Not only had the day included firebombing, but also the plotting of the fire perimeter and reconnaissance required by the Incident Control Centre.

The following morning our first task involved intelligence gathering about the fire's behaviour and condition, mapping the new fire perimeter and reporting that information back to the centre. Overnight, the fire had spotted over a bulldozed firebreak along a ridge and was burning slowly downslope into steep inaccessible terrain on the southern flank of the fire.

We concentrated our efforts in this area as it was the only active fire perimeter. We used Helitack (helicopter-delivered fire resources for initial attack on a wildfire) to assist in suppressing the active fire edge. This technique is often very concentrated and intense.

Private property bordered the state forest directly below this ridge and consisted of open, undulating terrain, with small vegetated areas. Cattle grazed on the grassland and a farmhouse was located up on a ridge close to the fire perimeter. During our operations, we had flown over and close to this house on numerous occasions.

Running east-west and downhill of the house was a single-strand power line. Being silver in colour, it was quite easy to see. The supporting timber poles were also clearly visible, as they stood alone on the open ridges. Another span ran from one pole up the ridge to the house. The pilot and I recognised the existence of the poles and power lines and always maintained a safe distance.



image: Bidgee, CC BY-SA 3.0 AU

Late in the morning on the second day of operations, I had a call of nature. I asked the pilot to find a suitable spot to land so I could get out and relieve myself. An obvious level location to land the helicopter was on the creek flats, a few hundred metres downhill from the house. Visibility was good and there was no turbulence in the lee of the range.

We descended following the ridge, passed over the silver power line to the flats and came to a hover about 10 metres above the ground. The pilot then taxied to the left and towards rising terrain between 2 ridges at 10 knots ground speed. The silver power line was clearly visible up and away from us.

Then – power line!

The pilot and I saw the power line at the same time and a shiver pulsed through my body. Where did that come from? The power line was now under the rotor disk and just above the cabin. Pull-up! I could not believe how close the rotors came to the power line and possible wire strike.

The power line was now under the rotor disk and just above the cabin.

Only the skill of the pilot averted disaster by pulling up and manoeuvring away from danger. 'That was much too close'.

Apart from the pilot's skill, the only other thing that saved us was the slow forward speed of the helicopter. The pilot quickly found a suitable spot to land and I jumped out. We looked at each other, realising just how close to calamity we had come.

The power line we almost collided with was not the one we had identified earlier. This was a separate span, black-insulated, quite narrow and running parallel to the silver strand, but further down the hill. It was almost invisible and had sadly slipped through our 'vigilance and situational awareness net'.

Once airborne, we followed the black power line to see where it went. One thing that made it difficult to identify was that its supporting poles were in stands of trees growing on the ridges, with the long span drooping low into the valley it traversed. We hadn't anticipated or expected another power line running in proximity and parallel to the other one. It was a potential trap for anyone!

Lessons learnt: This was a really close call and a disturbing incident that could have resulted in severe consequences. It highlights the importance of vigilance and the need for constant visual alertness when operating at low levels in unfamiliar terrain, particularly in helicopters. ➡



images: (modified) Adobe Stock | Wirestock | batuhan toker, CASA



Radio failure

Preparation and attention to detail saved the day when a statistically unlikely event happened

By Dave Prossor

It was some little time back that I was asked to ferry a Cessna 172N from Devonport, Tasmania, to Moorabbin for sale. Easily done I thought – but that was not to be.

I caught a commercial airline flight to Devonport and, with my flight gear in hand, caught up with the Devonport contact.

My flight kit was my nav bag and a zip bag with my lifejacket in it plus a drink bottle and a sandwich.

I had previously contacted the airline and asked permission to carry an aviation lifejacket in their aircraft as it had a gas cylinder in it and received approval.

I got the aircraft keys and paperwork, then had the tanks topped up, both sides.

After a comfortable departure I followed the coast east bound and then stepped off Tasmania and flew north, island hopping. First Swan Island, then Clarke Island, Cape Barren Island and onto Flinders Island and a refuel.

It had been an interesting flight, with lots of water and a few islands. I had been flying with the left tank selected for most of the flight.

At Flinders Island there was a westerly wind so I chose to land on runway 23, into the wind. I taxied up to the fuelling station and got the ladder out with the intent of refuelling the left tank first. I opened the fuel cap and nearly fell off the ladder. The tank was full to the very top!

But I had been flying on the left tank for 90 minutes plus. There should have been a marked reduction of fuel in the left tank of at least 50 litres. Instead it was full. I checked the tank selector. It was still on the left tank.

I topped off the right hand tank and paid the bill for the fuel. What now?

I had about 200 nm to run to Moorabbin. I chose to stay with the left-tank selection with the knowledge that it had got me to Flinders Island so I had a good chance of getting the machine to Moorabbin on the same tank selection.

No-one had told me about the tank selector issue back at Devonport but someone knew more about it than me.

Panic over, I saddled up and departed Flinders Island airport. I called Centre and advised that I would be running scheduled calls of 10 minutes apart. The next was due as I stepped off 'feet wet' at the top end of the island.

So there I was – halfway across Bass Strait on a scheds call arrangement and unable to make a routine 'all is well' call.

I made the call and there was Deal Island ahead. Just before the next call was due, something brushed my knees. I jumped but found the cushion strip under the left hand side of the instrument panel that had fallen off. Phew! No snake or other wildlife to worry about. I had already had that with the tank selector.

Approaching Deal Island, I hit the PTT button to talk to Centre. No response and there was a funny sound in my headset. I tried again. No response. I tinkered with the radio settings and faintly I could hear Centre talking with other traffic.

So there I was – halfway across Bass Strait on a scheds call arrangement and unable to make a routine 'all is well' call. I was still flying and the aircraft and the weather were OK. What now?

I could see a situation where Centre would hit the big red panic button and have a flock of SAR search aircraft passing me as I continued towards Moorabbin. What to do?

A bright light lit up in front of my eyes. I will try squawking 7600 – radio failure – on the transponder. I dialled up the number and hit the ident button. Soon Centre came back and called up several aircraft that were on scheds or in the area to check that they were OK. They were.

Next they called me. They asked that if I could hear them and was OK, to hit the ident button twice. I did. We now had comms of a sort.

Was I continuing to Moorabbin? I hit ident twice. Did I want to continue on scheds using the transponder signal? I hit ident twice. I was flying at 5,000 feet so they probably had me on radar by then. They arranged that when I hit the coast of the mainland, I should hit ident 3 times. I did as they asked.

There were a couple of changes of radio frequency normally between Wilson's Prom and Moorabbin but Centre told me to stay on the same frequency. I hit the ident twice to signal OK.

As I got closer to Moorabbin, Centre told me to stay on their frequency all the way to the 3-mile marker for Moorabbin and then transfer to the Moorabbin West frequency and land on runway 5L. The tower would give me a green light for the landing approval.

The tower did and I gave them an acknowledgement flash of my landing light. I had checked it as serviceable in my pre-flight checks.

I landed and taxied off to meet the sales agent. He had already been notified of my issue by Centre.

I told him of my adventures with the fuel selector and then the radio failure halfway across Bass Strait.

I told him I suspected the cushion strip falling off had something to do with the radio failure. The strip was adjacent to the ignition keys and the master switch.

I never did hear the final story about the fuel selector or the radio failure. They must have been fixed because, soon after, the aircraft was sold and disappeared from the airport, no doubt minus the snags I had put on the maintenance release.

Lesson learnt: Another ferry flight adventure was over but I had learnt a good lesson on how to use the transponder in an emergency situation. 🌀



image: Deal Island in Bass Strait | Shelley Ross

Power isn't everything

A low-time pilot learns not to believe the hype about turbine helicopters

By a *Flight Safety Australia* reader

I started flying when I was 14. My goal echoed that of any young pilot at any flying school around the world who had been bitten by the aviation bug – work my way up to flying the biggest aircraft I could to the furthest reaches of the Earth.

However, after 8 years flying aeroplanes, my goals were turned on their head after I experienced my first flight in a helicopter. I was awestruck! The freedom of landing and taking off from anywhere, no wings, no runways, hovering ... I was hooked! I signed up to a course and after 2 years, I was a fully qualified helicopter pilot working in south-east Queensland.

In 2008 I had finished my training on the Bell 206 Jet Ranger and was keen to use my new qualification on an all-powerful turbine helicopter. An early opportunity came in the form of an air-to-air photography job. The job seemed simple: follow 3 aircraft around the ranges, filming them for a training video for the government. I had another pilot onboard to handle the filming, an ex-helicopter instructor with thousands of hours on the Jet Ranger, who was now flying light jets for another company.

The day was beautiful. CAVOK was forecast throughout, with light surface winds. The area forecast mentioned that the winds would increase in strength quite sharply with height but it wouldn't be an issue as most of our work would be at low level.

We departed from the airfield behind the 3 aircraft and the task went exactly as planned. After 30 minutes of filming, the last sequence involved the 3 aircraft landing in a pad together and then the pilots departing for lunch at home.

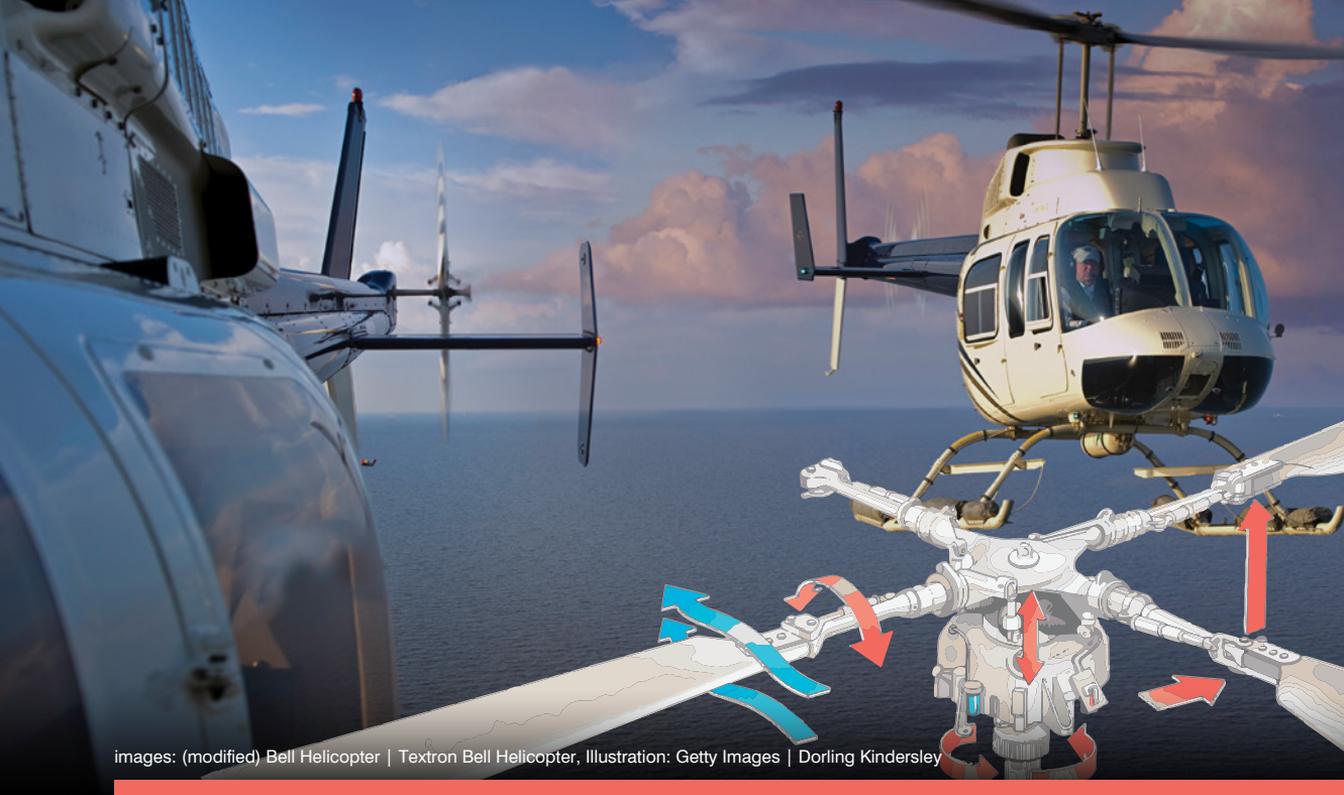
The cameraman told me to get up to 1,000 feet AGL and hover in place so we could get a better view of the activity.

I manoeuvred the helicopter into the spot and waited for the aircraft to do their thing. After only about a minute of hovering, my whole world suddenly fell apart. I felt a strong gust through the open door and the aircraft immediately started to turn to the right. I applied left pedal to keep the nose straight, but it was taking more and more pedal to keep straight. About a second too late, I realised I had run out of pedal but the aircraft was still turning right!

At that point the aircraft had turned 30 degrees and was accelerating its rotation. After about another second, aircraft was acting like an out-of-control rodeo bull – my windscreen was a half-blue, half-brown blur and I had no yaw authority left.

After about another second, aircraft was acting like an out-of-control rodeo bull.

My only reasonable option was to get some forward speed and fly out of the spin, so I jammed the cyclic to its forward stop and lowered the collective. My windscreen was now full of trees and drought-bare Queensland hills. If this didn't work, the only way left to oppose the rotation was to shut down the engine and enter autorotation – something I didn't fancy in the slightest at this early a stage in my career as a helicopter pilot.



images: (modified) Bell Helicopter | Textron Bell Helicopter, Illustration: Getty Images | Dorling Kindersley

After what felt like a lifetime, the aircraft gradually started to respond and the forward speed crept up slowly. As it did, the aircraft ceased its out-of-control spinning and dished out of the dive at 250 feet AGL. As I climbed the aircraft back to height, I had to fight to regain my situational awareness.

I established we were clear of the other 3 aircraft and checked the helicopter's systems, which fortunately looked fine, then asked my passenger if he was OK. He told me he was, adding he had caught a chance glimpse of the torque gauge during the initial onset of the rotation and it had been indicating an over torque.

The density altitude we had been hovering at obviously required a higher-than-usual power demand. My addition of full left pedal and extra collective had resulted in a minor over torque. I informed the other 3 pilots what had happened and landed in a paddock to have the helicopter inspected prior to returning home.

While we waited for the engineers, my passenger and I debriefed the incident. We both thought loss of tail rotor effectiveness

was a probable culprit. We were only at 1,000 feet AGL but the density altitude was significantly higher, the wind was gusting and veering at height and we had full fuel and crew. The power demand on the aircraft in the hover would have been quite high.

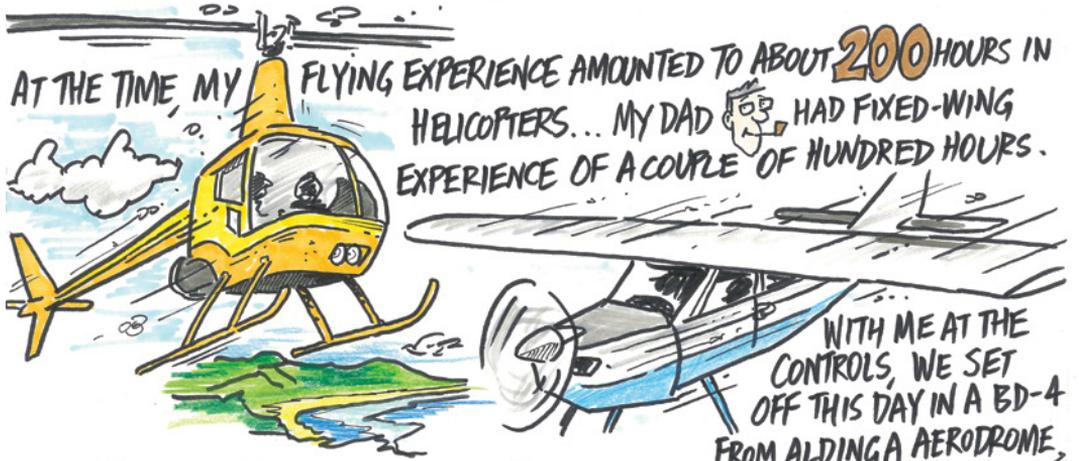
Even though the aircraft remained undamaged, I was upset with myself for putting it and us in such a vulnerable position. The whole scenario could have been avoided by flying a slow-speed orbit, but I had invested too much confidence in my 'all-powerful turbine machine'.

Lesson learnt: The lesson I took away from that day was very simple – you are taught basic airmanship techniques (nose into wind, know your performance, watch your power, etc.) for a reason. Imagining your aircraft has the power to overcome poor decisions is a mug's game. I was lucky we had height that I could trade for enough speed to fly out of the rotation. After reading many accident reports since then, I realise that a number of Jet Ranger pilots have not been as lucky. 🌀

CRASH COMIC

A hazy memory

By a Flight Safety Australia reader



AT THE TIME, MY FLYING EXPERIENCE AMOUNTED TO ABOUT 200 HOURS IN HELICOPTERS... MY DAD  HAD FIXED-WING EXPERIENCE OF A COUPLE OF HUNDRED HOURS.

WITH ME AT THE CONTROLS, WE SET OFF THIS DAY IN A BD-4 FROM ALDINGA AERODROME,

A BEAUTIFUL SPOT IN THE GRAPE GROWING AREA OF THE SOUTHERN VALE..



HOT AND DRY CONDITIONS WERE PREVAILING ACROSS SOUTH AUSTRALIA..

PRESSED FOR TIME..

WE OPTED FOR A SHORT FLIGHT TO MURRAY BRIDGE ABOUT 40 NM AWAY.. EXPECTING TO TAKE AN HOUR 

UNBEKNOWN TO US, KANGAROO ISLAND, ABOUT 50 NM SOUTH OF ALDINGA WAS ABLAZE WITH **BUSHFIRES!**

WE HAD AN UNEVENTFUL DEPARTURE AND THEN TRACKED TOWARDS MURRAY BRIDGE.

SHORTLY AFTER **DEPARTURE** A STIFF SOUTHERLY BREEZE  ARRIVED, ACCOMPANIED BY A LIGHT **HAZE** WHICH CONTINUED TO **THICKEN** SO, WE OPTED TO RETURN TO ALDINGA AND CALL IT A DAY..

BUT **SMOKE** FROM KANGAROO ISLAND GOT THICKER AND THICKER.

BY THE TIME WE WERE **5** NM FROM THE AIRFIELD WE WERE CLOSE TO LOSING **ALL** VISIBILITY. WE CONTACTED ADELAIDE APPROACH WHO VECTORED US OUT OVER THE **SEA** FOR A DESCENT AWAY FROM THE **HILLS**.



© BLOOMFIELD '22

WE APPEARED TO BE DOING ALRIGHT UNTIL A GLANCE SHOWED THE **AI** SIGNIFICANTLY **TILTED** AND **AIR SPEED** CLIMBING **RAPIDLY!**



ALL THOSE MAGAZINE ARTICLES ABOUT DISORIENTATION AND THE SURVIVAL TIME OF VFR PILOTS IN CLOUD CAME FLOODING BACK!..

A RAPID RECOVERY AND SOME EFFECTIVE TEAMWORK AND MONITORING SORTED US OUT FAIRLY QUICKLY. AND WE SET UP THE GENTLE DESCENT UNTIL AT 800 FT, SOME RECOGNISABLE SHORELINE FEATURES CAME INTO VIEW..

NEVER HAVE I BEEN SO **HAPPY!**

WE CREPT BACK INTO ALDINGA AT A LOW LEVEL FOR A SAFE LANDING..

illustration: Steve Bloomfield

LESSON LEARNT:

- be more situationally aware of the bigger picture (fires to the south)
- pay closer attention to the forecast and the effect southerly winds might have
- when we realised how bad the smoke was getting on our return leg, we should have tracked directly north to clearer air and landed at an alternative.



image: Adobe Stock | Alexey Protasov

Locust roast

A burning smell on take-off prompts a revision of emergency procedures

By a *Flight Safety Australia* reader

There are some situations in flying that really energise your thinking. Think of engine failure. Think of weather conditions deteriorating below minimums. And, as I recently discovered, the smell of something burning just moments after take-off.

The morning's solo flight from Griffith to my home base in Canberra promised to be routine. The met briefing was for a light westerly tailwind and a mid-level cloud base well above the LSALT. No worries there.

There was a local NOTAM, 'Bird hazard exists due to locust plague'. 'OK', I thought, 'I need to look out for the birds'.

As I walked out to the Arrow, a local ag pilot drove up. He was getting ready for a day of spraying as the farmers had been taking a hammering from the swarming insects.

'What's it like flying around the locusts?' I asked.

'Need to stay above the big swarms, but keep an eye on the oil temp, as the little buggers can plug up your oil cooler,' he said. A good bit of local knowledge, I thought.

With the flight plan in the system and pre-flight completed, it was time to fly. At the holding point, I went through my checklist. An instructor once told me that a checklist is always a work in progress. Mine has grown from the original (BUMFISH) to a current 2-page incarnation that would make a NASA mission controller proud.

I usually recite aloud the section on engine failure on take-off:

- fly the aircraft (maintain 90 knots)
- find the field (options restricted to 30 degrees left or right)
- figure out the approach (straight ahead)
- fix or isolate the problem (time permitting)
- phone a friend (call ATC)
- fuel and electrics shutdown
- flee the aircraft (take the EPIRB and grab bag, 2 door latches to open, exit and move upwind).

So far, no passengers have asked to disembark the aircraft after my monologue, but it has raised a few eyebrows.

With the checklist complete, it was time to taxi out. There was the occasional locust on the runway, but what could the odd insect do to an aircraft, I asked myself.

A lot, as I was about to find out.

The ground roll was routine. A quick instrument check as the aircraft accelerated showed all was normal. Rotate at 60 knots, gear up and trim for 90 knots – so far so good. Passing through 300 feet AGL, I noticed a burning smell, slight at first, but rapidly becoming more intense.

My first reaction was disbelief. (Others would later call this my moment of denial.) Then the adrenaline kicked in. The aircraft was flying OK, but obviously I had a problem. Most likely a fire, but where?

Should I do an immediate landing straight ahead, as per my engine failure rehearsal? It has been drilled into all of us never to turn back if there is an engine failure. But the instrument readings were all normal. The engine sounded okay and felt strong.

Would a better option be an immediate turn back to the aerodrome and a precautionary landing? A precautionary landing that would require an unrehearsed low-level circuit at an unfamiliar aerodrome. What if the engine stopped on the way back? Would the extra minute or 2 in the air create a truly flaming Arrow? Obstacles? Traffic? My focus was starting to narrow – it was time to stop dithering and start doing.

A rapid return to the aerodrome and a precautionary landing seemed the best option.

During my last flight review, the examiner had gone through a new CASA learning module that reviewed the effect of distractions on aviation safety. Plenty to distract me here, I thought.

‘Just fly the aircraft,’ my inner voices kept reminding me. ‘And remember to get the gear down.’

Time to phone a friend. A quick call to Melbourne Centre to advise them of the change of plan. The controller’s response was brief.

Passing through 300 feet AGL, I noticed a burning smell, slight at first, but rapidly becoming more intense.

‘What’s the nature of your problem?’

‘Something’s burning.’

‘Copy,’ he replied, ‘Report operations normal in 5 minutes. Out.’

What followed was a very tight circuit, a normal (wheels down) landing, an ops normal call to Centre ... and then a few extremely deep breaths.

Going over the aircraft revealed nothing out of the ordinary – no oil or fuel leaks, no visible smoke or scorch marks around the engine. It was time to call Rob, my LAME.

He directed me to the cabin air intake on the engine cowling, where ram air is directed over the exhaust system.

‘Can you see a bit of soot on the exhaust manifold, about 2 cm long?’ he asked.

‘Yes.’

‘Well, that was your culprit, a locust. They don’t smell real flash when they are cooking.’ (Rob’s a country boy.)

The flight back to Canberra was far less eventful.

Thinking back, I realised that while I had rehearsed for a complete engine failure after take-off, I had no mental script for the possibility of a return and precautionary landing. The issues of circuit direction, local obstacles, built-up areas, conflicting traffic and a compressed time for landing checks could all have been reviewed on the ground beforehand.

A new section on precautionary landings now graces my (ever-expanding) pre-take-off checklist.

I also understood the hidden benefit of notifying Centre when things are not going well. Obviously there was little the controller could do for me in the cockpit. But a few calm words and knowing that ‘The System’ was swinging into action was hugely reassuring. Sometimes that is all that is needed to prevent a difficult situation becoming something worse.

Lesson learnt: I now know that a 30 g insect can compromise the safety of a 1,200 kg aircraft and I am also pretty certain that locusts will not be featuring on MasterChef anytime soon. 🦋



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