

vector



CLASSIC FIGHTERS IS BACK

Competence – or
just confidence? //

Beating the
isolation //

Sharing the
lessons



// COMPETENCE – OR JUST CONFIDENCE?

Cover: A Yak 3U Steadfast.
Photo courtesy of Gavin Conroy.
See our cover story on page 14.



// BEATING THE ISOLATION – SAFETY MANAGERS



// SHARING THE LESSONS



// CLASSIC FIGHTERS IS BACK

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COMPETENCE OR JUST CONFIDENCE?



// By Jonathan Mauchline, CFI,
Wanganui Aero Club

After getting your pilot licence or certificate, you need to keep practising basic skills, so BFRs are a breeze, and you're the safest pilot you can be. »

» I conduct biennial flight reviews for PPL-holders and microlight pilots on a pretty regular basis.

One of my standard questions is, “How long has it been since you last practised a forced landing? Or stall? Or glide approach?”

“Not since my last BFR” is a frequent response.

Consequently, when I check these exercises during a BFR, I’m sometimes dismayed by the pilot’s performance, particularly in forced landing or wing-drop stalling.

I get the feeling that some pilots stick their head in the sand about practising these exercises, reassuring themselves with:

- “The last practice I did was okay.”
- “My engine is reliable – in reality, I’ll never need this.”
- “My instructor signed off my BFR. He thinks I’m good enough until next time.”

// The only way to get ‘good enough’ is to really practise. //

These, and other similar excuses, are used to convince themselves there’s no need to practise – it also protects their ego because they don’t have to face how inaccurate and uncurrent they might have become.

For others, it may simply be that they’re not comfortable practising these manoeuvres on their own. But this also indicates a problem. If a pilot isn’t comfortable practising these in a controlled training scenario, in a real-life scenario with the high pressure and possible panic factor, they’re less likely to react correctly.

But the forced landing pattern, like the low-level stall, is an activity which, when practised and current, assures the pilot they can walk away following an emergency.

I think that’s pretty important, don’t you?

How good is a ‘good enough’ FLWOP?

I’ve found some pilots, who seem perfectly comfortable with the FLWOP (forced landing without power) they just did on a BFR, fail to appreciate just how closely they ‘scraped’ in...

Or I find they breathe a sigh of relief when they manage to achieve a good one – as if they didn’t have any confidence in their ability to begin with.

In a real-life forced landing situation, would you not want to be 100 percent comfortable in carrying out a FLWOP?

Is it not worth one or two hours of practice to be comfortable with your ability? Remember, you’re responsible for all the occupants in your aircraft – occupants who’re helpless and rely on you to keep them safe.

Would your next passenger be comfortable if they knew you hadn’t practised a FLWOP for more than a year? Would they be comfortable if they knew the quality of your last practised one?

These are the questions to ask yourself when deciding whether your skills are ‘good enough’.

Often, pilots don’t want to practise a FLWOP because they’re afraid to muck it up. Surely, this is an even better reason to practise!

In how many of your last 10 FLWOP practices were you 100 percent confident in a successful outcome? Is anything less than 10 out of 10 good enough?

Ask your passenger.

The only way to get ‘good enough’ is to really practise. Glides from high altitude to practise the FLWOP pattern are a great place to start.

Practising glide approaches at your airfield is also a fantastic exercise, as every FLWOP ends up as a glide approach.

Also, by physically landing on a runway, you have a direct measure of how successful it was – was your touchdown accurately on your aiming point or did you float past, or land short? Being able to nail a glide approach, I believe, is the first step to nailing the whole FLWOP pattern.

Call up your local aero club and grab an instructor for a couple hours of practice. It’s often helpful having another pilot on board to help critique your technique, but also to keep a lookout for traffic, and handle radios and the like, so you can properly concentrate on the exercise.

Stalling

A study¹ I recently read found that 80 percent of unintentional stalls occur below 1000 ft. We can infer from this that pilots are distracted when these stalls occur, whether that’s by making a turn, encountering wind shear, during approach to land, or when taking off.

These aren’t the straight and level stalls we practise at 3000 ft, which we expect and know how to recover from.

¹ "Spinning In", AOPA Pilot magazine, 5 February 2003.

What you don't expect, are stalls while manoeuvring, especially at low level.

Reactions are delayed, and if it develops into a wing-drop and recovery isn't 100 percent intuitive, you'll start rolling wings level with ailerons, only worsening the situation.

Before you know it, your aircraft will have turned onto its back and be pointed at the ground and you'll have the controls fully aft, as the aircraft hits the ground. That is, I believe, the harsh reality.

Within the last few months within the wider overseas GA community, there has been a number of fatal low-level stall/spin accidents in light single-engine aircraft.

I personally know of a couple of accidents within relatively recent times in New Zealand – one fatal – and a couple of very close calls. I'm sure there have been more. These normally happen at a height close to which a normal stall recovery would be successful if executed very quickly at the onset.

But in most fatal scenarios, the killer was in not recognising the stall quickly enough. So when the nose starts dropping and the ground comes racing up, it's a very hard thing to push forward unless stall recovery is 100 percent instinctive.

And this only happens with practice.

Becoming instinctive

By practising slow flight, stalls, and wing-drop stalls at higher altitude, we start learning the feel of the aircraft close to the stall, and the handling of the aircraft (specifically regarding rudder use) becomes more intuitive.

With it becoming so much more familiar, recognition of the stall symptoms and the edge of the flight envelope become more instinctive.

If the only time you practise these is during a BFR, you aren't preparing yourself for the worst-case scenario. When the shock factor kicks in, currency in the practice of these exercises may be the only thing to prevent a disastrous outcome.

Your local aero club instructors are very current and practised in stalls and stall recoveries. These are exercises we teach on an almost daily basis. If stalls just aren't your thing, having an instructor on board will help you regain full confidence.

// Practising glide approaches at your airfield is also a fantastic exercise, as every FLWOP ends up as a glide approach. //

The instructor's dilemma

A BFR is, just as it's called, a 'review'. Your instructor is not testing you, but is there in an instructional role to help you improve. That being said, when an instructor does a BFR with a pilot, there is a set of standards they have to work by.

If manoeuvres and exercises aren't performed to the required standards, more flying must be completed before BFR sign-off.

One, two, or three flights with a pilot gives an instructor only a small snapshot of their overall capabilities. Using this snapshot, an instructor has to make the decision to either sign off the BFR, or request another flight. It's easy to recognise a well-practised and current pilot. BFRs are much simpler for both when that's the case.

Timing is everything

Unfortunately, BFRs are often shorter than they should be – external pressures, such as an itinerant pilot leaving a BFR to the last minute, can leave an instructor with a difficult situation.

So on behalf of all GA and microlight instructors, please don't leave your BFR until the last minute...

Remember that if you begin your BFR within the 60 days grace period, an incomplete BFR won't stop you from flying – as long as it's complete by the expiry.

And if an instructor asks for you to book another flight with them, please understand they're just looking out for you.

I strongly encourage you to go out and practise, get comfortable with your capabilities, and constantly strive to become the best pilot you can be. At the end of the day that's what will keep you safe.

We instructors are always willing to give a bit of advice or go up with you on a weekend to practise, so please make use of us, we're here to help. ➡

THE SKY IS BIG ENOUGH FOR BOTH OF US

A near miss incident in late 2016 between a fixed-wing training aircraft and some nearby skydiving participants frightened everyone.

A skydiver and an aircraft colliding mid air could result, at the least, in aircraft damage. But it could result in the death of a skydiver, and if the aircraft crashes, the death of the pilot and others on board.

Here, we look at the ways all aviation participants can share the skies and help keep each other safe.

Parachuting parameters

It's essential that aeroplane and helicopter pilots understand the basics of parachuting, and how this activity could affect their flight path.

Fiona McLaren has been participating in and organising skydiving activities for years. As the operations manager at Skydive Auckland, she's keenly aware of the relationship between skydiving participants and those flying aircraft nearby.

Fiona says there are a few key things for pilots to keep in mind.

Parachutists will be dropped by the 'drop pilot' anywhere from 3000 ft to 20,000 ft, usually upwind of the parachute landing area, or PLA.

A jump run – which is the flight leg where parachutists exit the aircraft – can be within a three nautical mile radius of the PLA.

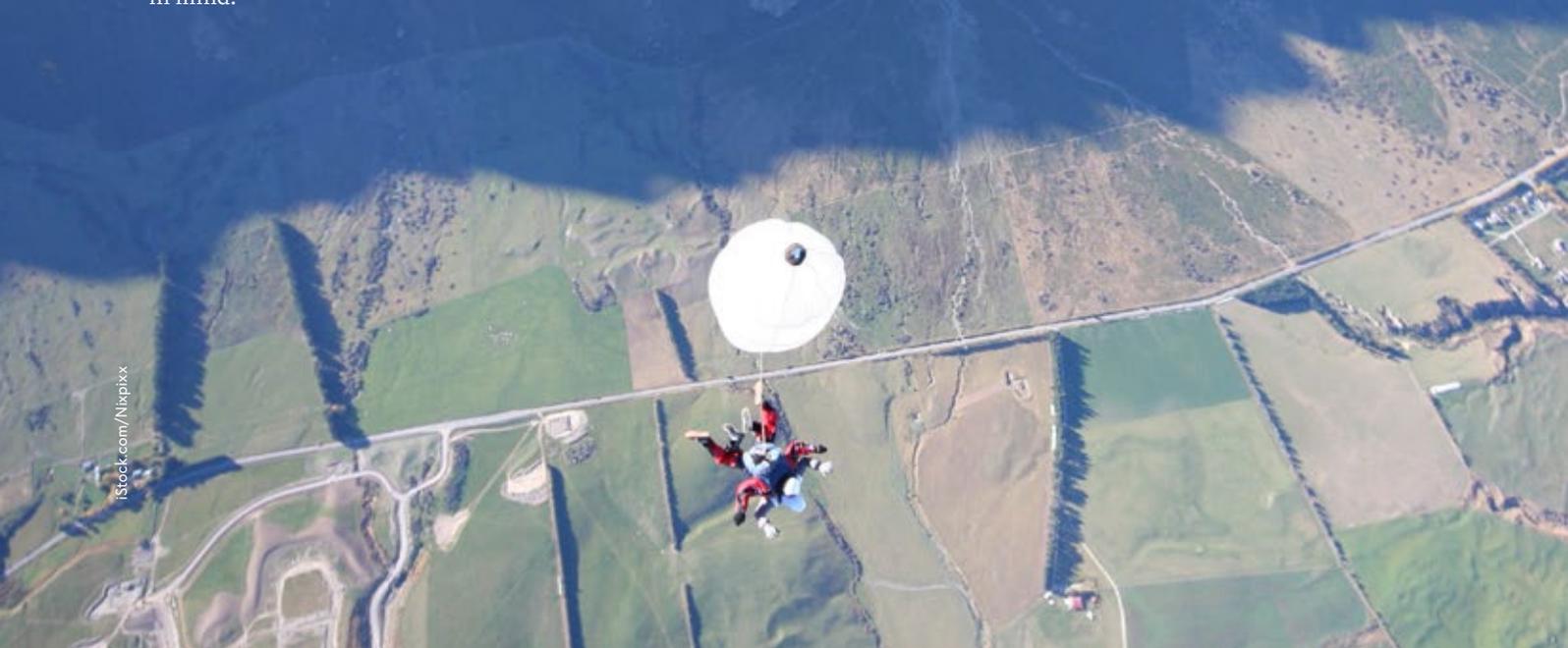
There can be multiple jump runs, with parachutists exiting at a range of altitudes, and their canopies open from between 5000 ft and 3000 ft.

And the higher the parachutists are, or the stronger the wind, the further upwind the canopies will be.

It goes both ways

While it's important for general aviation pilots to understand the basics of parachuting, parachuting pilots also have responsibilities.

Carlton Campbell, CAA Aviation Safety Advisor, explains there's no monopoly on uncontrolled airspace.



“Class G airspace is available to all, including drones, and no particular sector has specific rights over another. Drop pilots are very busy, but they’re required to make sure the airspace below them is clear before releasing parachutists.

“Airmanship principles are paramount for all parties, all the time.”

Highway to the danger zone

Fiona explains that a PLA is essentially a constant danger zone, and pilots need to be vigilant when approaching one.

“Flying into an active parachuting area, pilots should always assume skydiving is in progress. There’s often no way to know whether skydiving is occurring.

“The easiest way to avoid endangering others in the first place is to avoid the PLA completely. Read the landing plate if you’re going to an airfield, or flying close to an area with parachute operations indicated on the visual navigation chart. Pay close attention to where the marked PLAs are and any special procedures for when canopies are in the air.

“If you’re in doubt about what the landing plates are telling you, contact the airport or skydiving operator and clarify. That way you’ll get a straight answer, and if recurrent questions come up from different pilots, the operator can use these to improve the wording in the procedures.

“Some aerodromes have space to allow for concurrent skydiving and circuit/runway use, whereas others require that there are no aircraft in certain areas during drops. Learn the local requirements.”

Radio silence

Many pilots rely on radio calls to check whether parachuting activity is occurring. But this isn’t always a reliable method of finding out what’s happening. Sometimes, Fiona explains, a pilot may not receive a reply from the drop pilot before they reach the skydiving area.

“Not hearing a radio call doesn’t mean there’s no skydiving. There are many reasons you may not hear a call.

“It’s common for skydive drops to be in a different airspace layer above the drop zone, and on a different frequency to the aerodrome, MBZ, or CFZ.

“If you ask if there’s skydiving in progress, and you get a clear response from the parachute pilot, you’ll know for sure.

“Communications they will make on local frequency are a ‘rolling/departure’ call, ‘three minutes till drop’, and a ‘jumpers away’ call.

“If you get no response, however, the parachute pilot may be talking to a controller on another channel. Parachute pilots are busy making lots of calls, and it’s possible that calls made from other pilots entering the airspace could be missed.

“If in doubt, always assume there’s active skydiving in progress, and follow the correct procedures.”

Things don’t always go to plan

While pilots should do all they can to avoid endangering skydiving participants, Fiona acknowledges that things don’t always go to plan on their end of things either.

“‘Off landings’ do occur, which is when parachutists aren’t able to make it back to the PLA, landing ‘off’, upwind. Malfunctions can also happen, where a parachutist has released their main canopy and it’s now flying uncontrolled with the wind, as it drifts to the ground.”

As scary as that sounds, Fiona explains there are procedures to help pilots in that situation.

“If that situation occurs, the drop pilot will be advised by flight followers. They will then advise local traffic with the height and direction of that parachute.” 

// MORE INFORMATION

For more information on flying near parachute landing areas, including how to identify them on VNCs, read our recently updated *New Zealand airspace GAP* booklet.

Download your own copy, or request a printed copy, at aviation.govt.nz/education.

Comments or queries? Email education@caa.govt.nz

// **If in doubt, always assume there’s active skydiving in progress, and follow the correct procedures.** //



THE SENIOR PILOT

How pilots, getting along in years, can maintain their medical and continue their passion.

New Zealand has an ageing population, and that also means ageing pilots.

In fact, the average age of New Zealand pilots, both aeroplane and helicopter, has increased from 38 to 42 in the last ten years, with a number of pilots well into their seventies.

Further, the growth in demand for commercial pilots has resulted in pilots retiring later.

Vector asked CAA Acting Principal Medical Officer Dr Claude Preitner, himself a senior pilot, what sort of changes the ageing pilot can expect.

“Changes can include those to vision, hearing, strength, and a pilot’s range of movement. It can affect posture and balance, sleep regulation, and thermoregulation. Decline in mental function is of particular concern. Together these changes may affect pilot performance.

“But it can be hard for some pilots to recognise decline, as it’s often very gradual.

“It may also be difficult for someone to accept that they’re no longer ‘Maverick’, and that their health and performance have declined enough to negatively affect the safety of their cherished activity.”

Insufficient evidence

“The statistical relationship between age, decline, and accidents is not clear,” says Claude. “With proper medical screening, sudden incapacitation of an older pilot remains unlikely. But if the unlikely should happen, it would be mitigated by the presence of a second pilot, say, in the case of airline operations.

The Aircraft Owners and Pilots Association – AOPA – found its review¹ of studies of elder pilot safety was inconclusive, saying “...perhaps most striking is the relative absence of exact findings”.

The Aerospace Medical Association also says their review concluded there’s insufficient medical evidence to support “restriction of pilot certification based on age alone”.

Claude agrees, saying chronological age isn’t a very good lens to assess a pilot’s ability to operate safely.

“Everyone ages differently, so it would be difficult to decide on such an age limit.”

The critical role of currency

While chronological age might not be a hard and fast end to a pilot’s flying days, it does appear to impact on safety *if* the pilot lacks currency, according to Claude.

“Currency is probably the most important thing for the older pilot.”

The AOPA research backs this. It discovered that, while low-currency older pilots have more accidents than low-currency younger pilots, high-currency older pilots have fewer accidents than their younger counterparts.

Eighty-five year old pilot Guy Clapshaw believes that’s because experience compensates for age.

“This is especially true, I think, for IFR-rated pilots flying on instruments or in adverse weather. »

¹ *Ageing and the General Aviation Pilot – Research and Recommendations*, AOPA.

» “In terms of the effects of ageing on pilot safety, the CAA medical sorts out anything not reaching the standard, especially with hearing, eyesight, and heart.”

Guy says his age has not affected his flying ability, although he does take a bit longer to get into his Percival Proctor these days! He stays current, and he gets regular eye checks.

“There is some wear on the eyesight and heart, but I have biennial flight reviews and there hasn’t been a problem.”

Mick Orchard began flying at 62 when he was told, “If you can still ride a bike, you can fly a plane”.

Mick built his own Glastar and knocked up 500 hours flying the length of New Zealand. However, before a planned trip over the Tasman could take place, he retired from flying to care for his wife who’d become unwell.

Now 85, Mick feels he could fly if he had to. “My heart is still strong, but you gotta look at reaction times, they’ve slowed down.

“You should know your own limitations. A lot of people don’t realise that.”

CAA Aviation Safety Advisor Carlton Campbell agrees with Mick.

“As we become an older pilot, it’s important to be open-minded to feedback from our peers, particularly our friends and families who know us well.

“They see the effect of ageing on us more clearly than we do. So listen to them, invite their feedback, take it seriously, and if appropriate, hang up the spurs with dignity rather than stubbornly hanging in there.

“It’s not always just about us – it can be an important life statement to others.

“If you want to continue to enjoy your wings but know you’re beyond flying solo, take an instructor and fly dual.”

Claude’s general advice for older pilots, other than staying current, is keeping yourself as healthy as possible.

He says age well and wisely – exercising body and brain, practising good sleep hygiene, eating well, limiting alcohol, and recognising what you can no longer do.

“And don’t hesitate to do some dual retraining.”

Advice for instructors

The instructor plays a crucial role in making sure ageing pilots are up to scratch. Claude has some general advice for them.

“They should be looking for the general ageing that pilots should be looking for in themselves – poorer eyesight and so on.”

// Currency is probably the most important thing for the older pilot. //

Claude also says that instructors should adapt their teaching technique to fit their student, no matter their age.

“Have a bit of an understanding of the pilot you’re dealing with – their characteristics, how they’re ageing, and their style of learning.

“The BFR is a learning opportunity for pilots to improve their competency, and for the instructor to observe any issues, and see if any retraining is required.

“If a pilot isn’t up to scratch in the BFR, the first check should be if there’s just a currency issue. If so, the pilot should quickly recover their skills.

“However, if the pilot is slow to recover their skills, the issue may be more serious, for example, a cognitive decline. It may be time for a conversation between the instructor and the pilot.

“If an instructor has real concerns about safety, they can discuss it with an experienced colleague or a CAA flight examiner.

“As a last resort, and in the name of aviation safety, an instructor, however reluctant, may have to contact the CAA if an older pilot is clearly no longer able to fly safely but is unable to recognise it.”

Wise elders

Brendon Bourne, CAA Flight Examiner, says all aviation benefits from having older pilots staying in the system.

“There’s so much knowledge and wisdom in the brain of a pilot reaching retirement age that can be obtained only from experience.

“It’s important for the aviation community to be able to make use of this valuable resource in perpetuating aviation safety.

“So if senior pilots stay healthy, keep current, and maintain their medical, everybody wins.” ➤

Comments or queries? Email education@caa.govt.nz

I LEARNED ABOUT
DISTRACTION
FROM THIS...



...AND **STRESS.**
AND **WORKLOAD.**

A busy chief engineer, pulled in too many directions, with too many interruptions, experiences the inevitable.



At the end of an October 2020 early morning spray run, a South Island helicopter pilot was returning to the load site, when the aircraft's GPS system suddenly lost reception.

After landing, the pilot walked around the aircraft. He found the panel holding the GPS antenna on the horizontal stabiliser was attached by only a single coax cable, connected to a VHF comm antenna on the same panel. All the panel screws were missing.

The pilot called the chief engineer, who'd released the aircraft to service. During the phone call, the chief engineer realised he'd been responsible for the incident.

"The aircraft had been in for scheduled maintenance, and I'd had one last job to do on it. It was a busy morning, with several aircraft being released to service.

"I was chief engineer, job manager, and on the tools. My phone was ringing constantly. I was overseeing a couple of aircraft on check, there were a couple of other problems I needed to deal with, and I was working on the machine the panel needed to go on.

"I climbed the ladder to fit the panel but only finger-tightened the screws, because – probably because of the busyness, even stress, of that morning – I'd broken my own rule in not having a screwdriver always with me, so I got down off the ladder to get one.

"That's when my phone rang, and I broke another rule by answering it in the middle of a job. After the call finished, instead of returning directly to the job, I went and dealt with the problem the call had been about.

"Only then did I return to the aircraft, but it had, by then, been moved outside for ground running – the other engineers clearly thought I was done with it and it was ready for release to service.

"Forgetting totally about my final task of screwing down the panel on the horizontal stabiliser, and preoccupied with all my other responsibilities that morning, I took a final walk around. I could see the VHF comm antenna, so assumed everything was okay.

"The next morning, the pilot called..."

Solutions from the workshop, the psychologist, and the CAA

The workshop – a change of policy and procedure

The company did a root cause analysis of the incident, and it wasn't long before they realised the chief engineer's distraction was a symptom, not the source, of the problem.

"I was dealing with too much stuff," he says. "Our investigation found I didn't really have a proper support person to share the workload, to answer clients' questions, troubleshoot, and do research.

"So, we hired a couple more engineers and I was able to reduce my workload. I still work on some jobs but am now no longer job manager.

"I leave incoming calls while working on a job, then ring people back, rather than answer my phone straight away. And the company encourages clients to call the office line and use engineers' mobile phones only in emergencies."

And in a brilliantly simple move, the organisation reshuffled desks so the chief engineer wasn't the first point of contact when people entered the building, to avoid even further distractions and workload.

"I also now practise 'go back five steps', the engineer says. "Each time I'm interrupted then resume the job, I go back five stages in the work to make sure it's all been done, up to the point of the interruption."

The psychologist – we're hardwired for distraction

Keith McGregor is an organisational psychologist with an aviation background, and experience as a transport accident investigation consultant.

He says our brains are designed to be distracted.

"Back in the day, that rustle in the bushes may have represented a threat. Our subconscious mind was constantly monitoring the environment for potential threats.

"But while distraction may have once been a survival asset, when it occurs in a present-day complex technical setting such as flying, it can, ironically, be our killer."

Prospective memory

Keith says that almost everything we do, day-to-day, involves remembering to carry out specific actions at some point in the future.

“That’s ‘prospective memory’ and the challenge with it, is that there are no cues to activate it. We have to ‘remember to remember’. So we use engineered devices – flight strips, seat-belt warnings, or automated verbal warnings – to remind us to take action.

“But in spite of tools like these, prospective memory can still fail. A NASA report¹ has noted that, in five of the 27 major US airline accidents between 1987 and 2001 – where crew error was found to be a causal factor – inadvertently leaving out a step in a normal procedure played a crucial part.”

Studies indicate that the quality of our prospective memory relies on the capacity of our working memory – our ability to retain the list of actions we need to carry out and when to carry them out. That varies from person to person.

“But working memory capacity, no matter how good it is normally,” says Keith, “can be reduced if you’re stressed, fatigued, anxious, ill, or preoccupied.”

The fallacy of multitasking

Keith also notes that the belief that humans can multitask adds to the risks because it’s untrue.

“If both tasks need deliberate thought, we switch back and forth between them.”

The switch may be as fast as a 10th of a second, so we think we’re equally focussed on two, or more, tasks.

But in fact, at any point, we’re actually not monitoring at least one of them at all.

“Hence the shock of looking up from changing the car radio station, to realise the car 10 metres ahead has completely stopped,” says Keith.

What to do

Keith says we cannot stop being distracted – we’re simply not wired that way – but we can implement strategies that might help.

“The chief engineer at the centre of the story has some really useful suggestions. But it would also be interesting, if, before popping back to get his screwdriver, he’d tied a handkerchief around the end of the antenna he was working on. Using spontaneous, hard-to-miss cues can help signal that an action is incomplete.”

Keith says we are generally aware when we’ve been distracted.

“A simple technique to help us make sure we return to the original task is to consciously name the distraction. Actually say out loud, ‘This is a distraction?’”

Another strategy is ‘deliberate action’². This means that before taking any action, a worker pauses, gestures, and states what they’re about to do – even if they’re alone.

It’s injecting a moment of mindful thinking between the impulse to do something and the actual physical act of making it happen.

Since learning about deliberate action, Keith says that when leaving his office, he verbally states to himself, “I’ve set the alarm. I’ve locked the door”. He says this has put an end to the frustration of getting halfway home and suddenly thinking, “Did I set the alarm?”.

“This process helps because it activates a wider range of brain functions which strengthens the likelihood I’ll remember what I did, in a timely way,” he says.

The CAA – making full use of the worksheet

CAA Chief Advisor of Airworthiness Warren Hadfield advocates for making the fullest possible use of worksheets.

“Following sound processes such as keeping an up-to-date record of maintenance carried out is paramount,” he says.

This is what Advisory Circular AC43-1 *Aircraft maintenance*³ says about keeping worksheets up-to-date so they accurately reflect where the maintenance of the aircraft is at:

“Various accidents have been attributed to incomplete maintenance where maintenance providers have initiated a maintenance action without making a record in an appropriate document.

“Accurate work records assist the certifying engineer (“In fact, they help *all* engineers working on the aircraft”, says Warren) in ensuring that all necessary maintenance, including work arising during the check, is complete and that the aircraft is in an airworthy condition prior to release to service.

“They also support the operator in making an assessment that all necessary maintenance has been completed prior to returning the aircraft to operation.” ➔

Comments or queries? Email education@caa.govt.nz

1 *Concurrent task management and prospective memory: pilot error as a model for the vulnerability of experts*, NASA Ames Research Center, 2006.

2 *Turn the ship around*, David Marquet, 2013.

3 Subpart B – *Maintenance*, 2.16, 43.69(b) *Associated Worksheet*.



CLASSIC FIGHTERS IS BACK



HERE'S HOW TO
GET THERE SAFELY

// By Gavin Conroy,
Classic Fighters Airshow General Manager

After a COVID-induced hiatus, the Classic Fighters airshow is back at Omaka this Easter.

During airshow activities in the Easter weekend, Omaka's airspace is restricted.

This will be published in the AIP Supplement 23/3, effective 23 March 2023. Check aip.net.nz closer to the event.

By arriving in good time, you may beat the congestion!

To get safely to and from Classic Fighters, make sure you have the latest AIP New Zealand Volume 4 and the visual navigation charts covering your proposed and alternative routes.

On the day of your flight, obtain weather information and NOTAMs from ifis.airways.co.nz.

Omaka aerodrome will be partially closed during the practice days of Thursday 6 April and Friday 7 April – see the AIP Supplement for times.

Also on Friday 7 April, the aerodrome will be closed for an evening airshow from 1600 to 1900 NZST.

On the main airshow days, Saturday 8 April and Sunday 9 April, the aerodrome be closed to all aircraft – 0930 until 1630 NZST.

Additionally, runways 01/19 and 07/25 will be closed between 01 April and 12 April 2023 for airshow set-up and then pack-up. Fencing, grandstands and so on, will be erected on the airfield during this period so only runways 12/30 are available.

Classic Fighters safety manager Aaron Marshall says after studying the charts, you'll realise that Omaka has non-standard circuit directions. This is due to the proximity of Woodbourne (2.3 NM) and high terrain on final approach to 30.

"Make sure you understand the altitude constraints relating to airspace, and also the published procedures. Know the visual reporting points, and plan on possibly holding visually (orbiting) for up to 30 minutes," says Aaron.

"Add 30 minutes extra fuel for holding time, additional to enroute fuel and reserves determined by the PIC. If high traffic volumes occur, you *will* be holding.

"Learn where the instrument sector is, and how the transit lanes are laid out.

"There's one major landmark, New Renwick Road, which is the main arterial road running east to west, just 1.3 NM

north of Omaka aerodrome. Don't cross it to the north as it's the instrument sector boundary.

"For those who have flown into the airshow before, there are some major changes in the ground layout this year. The main display line has been realigned with runway 12/30, which has resulted in the closing of both 01/19 and 07/25," Aaron says.

Climate

Woodbourne and Omaka are situated in a unique microclimate. The surrounding hills and ranges on either side of the Wairau Valley provide orographic protection from the weather, and channel the surface wind as westerlies and easterlies. The prevailing wind direction is west or north-west. The surface wind, however, can be completely different at the two aerodromes. For example, a westerly wind can be reported at Woodbourne, but an easterly can be occurring at Omaka from the sea breeze.

In the valley system there can be considerable differences between upper-level winds and surface winds. For example, southerly airflows in Cook Strait tend to become light to moderate easterly conditions at Woodbourne and Omaka.

Transit lane

Be aware of the transit lane boundaries. Transit lanes are Class G airspace so there's no reason to call Woodbourne Tower – this congests the frequency, creating unnecessary work.

"When doing an overhead join at 1500 feet into Omaka, that's right on the boundary of the transit lane," says Aaron.

When Omaka's airspace restrictions are active during air show days, the portion of VFR transit lane NZT654 sitting inside that restricted airspace becomes disestablished.

"Also remember that active portions of the transit lane finish at the end of daylight hours," says Aaron.

"During daylight hours, you should be listening on the Woodbourne Tower frequency when occupying the transit lane. The same goes for after evening civil twilight. Many pilots listen out on 119.1 MHz, in error."

To read the rest of the article giving more advice about how to fly to Classic Fighters, go to aviation.govt.nz/vector-online.

Also go to *Vector Online* to read "Woodbourne Busts" – how to fly safely in the Woodbourne-Omaka area during normal operations. ➡

// This Supermarine Mk IX Spitfire has displayed at every Classic Fighters airshow since its debut there in 2009. It'll be back again in 2023. It's owned by Brendon Deere and is based at RNZAF Ohakea. It'll be displayed by Squadron Leader Sean Perrett.

BEATING THE ISOLATION

SAFETY MANAGERS

Safety managers are meeting up to share ideas, solutions, and support.



Photo courtesy of V3 Heli Ltd.

Isolation. It's a commonly heard word among those who've taken on the responsibilities of being a safety manager.

A number of them, however, have started meeting in groups to help each other and provide support for newcomers to the industry.

Vector talks to two of those groups.

South Island group

Rebecca Gibb and her husband Matt have been in business for 15 years at Helicharter Nelson. Their safety management system (SMS) came on line last July.

Rebecca belongs to an upper South Island safety managers meet-up group, which she says has made her feel more comfortable and confident in her role as the safety manager of Helicharter, "because you're reassured by the others about what you're doing".

"And every time I walk away from a meeting, I have something quite valuable that I can use in my own systems."

A good tip that Rebecca picked up from another group member, Debbie Lawn of Ahaura Helicopters, was the use of regular quizzes, which act as a knowledge top-up for staff.

"For example, I recently did a weight and balance quiz to coincide with an audit," says Rebecca, "making sure there weren't any gaps in staff general knowledge or processes. It helped with my general knowledge too. Even simple questions can be great for general awareness, like, 'Where's the SMS manual located?'"

"Another useful takeaway from one of the catchups was breaking down the emergency response plan into segments, with training each month, rather than trying to cover the whole plan once a year in one big session."

One of the founders of the same upper South Island group, Pip Foster, who is employed by four operations as their safety manager, remembers feeling a bit lost at the beginning of her SMS experience, without anyone to bounce ideas off. Having the opportunity to meet with like-minded people has been invaluable.

"The potential for an incident in one company could be the same as that for another company. So the lessons from the SMS meetings are useful to everyone.

// Emma Tilyard, Safety Manager for V3 Heli Ltd, giving a safety briefing to passengers. "One of the women in the group had an issue ... she wasn't sure how to proceed and her boss had told her to ask the group. It was awesome he was advocating getting advice from us all."



Photo courtesy of Ahaura Helicopters.

// "We all have a passion for safety, and are always looking for smarter ways to improve our SMS." Debbie Lawn, Safety Manager, Ahaura Helicopters.

"But I also get to see different perspectives, because my companies are all fixed-wing, and all the others in our group come from helicopter-related businesses.

"Sometimes, just having a coffee and a chat gives you enough ideas to get on with. You need to tap into the combined group experience. Debbie, for instance, has been in business for 28 years and she's a mine of knowledge!"

Despite her experience, Debbie Lawn thinks the meetings have huge potential to drive safety initiatives for her, as much as for the others.

"We're a mix of owner-operator safety managers and employed safety managers, but we all have a passion for safety, and are always looking for smarter ways to improve our SMS.

"I'm probably further down the track than some of the other members because we became certificated two years ago. It feels like I'm able to help them along, but it's good having a way we can all learn together, so there's something pushing me along as well."

In these meetings, ideas about training, audits, meetings and reporting are discussed, along with aviation-related happenings in workplaces and in the wider aviation community.

"A lot of what we talk about is keeping our SMS relevant," Debbie says. "It needs to make a difference to our business, or we don't get buy-in from our staff. »

» “We also discuss the challenges we all face, like the isolation you can experience in the role, keeping up momentum after implementation, staff buy-in, and being a safety manager in your own business.”

One of the key challenges for a safety manager, Debbie says, surrounds continual learning. She says it would be easy to take the foot off the pedal after initial implementation.

“That’s why this group is really good – it’s pushing us all to keep going. It’s not just a case of thinking I’ve ‘passed’ so I’ll wait for the next audit. You need to be continually improving.

“As part of that, we’re planning on doing informal mini-audits for each other.

“The group will collectively audit the SMS at each safety manager’s place of work so group members can get feedback on their safety management system.

“Everyone is looking for better, smarter ways to do things.”

Debbie urges new safety managers to connect with others in the industry.

“There are some safety managers I know who’re facing an uphill battle, with little support from their company.

// Definitely try to surround yourself with people who have more experience, because it’s only going to lift you up. //

“For those who need help, I’d like to think I could be giving back, as lots of people helped me get to where I’ve got to on my journey. Everyone in our group feels the same.

“Not everyone who’s been invited to one of our catchups has come. Sometimes perhaps that’s because they’d be in the room with their commercial competition, but, at the end of the day, we just all want everyone to be safer.”



// Helicharter Nelson conducting helicopter safety training in the snow. Safety Manager Rebecca Gibb says of her group, “You’re reassured by the others about what you’re doing. And every time I walk away from a meeting, I have something quite valuable that I can use in my own systems.”

North Island group

Alex Fraser, from RTB Heli, and her husband Nick, are in their second year of operations.

After attending her first safety manager meet-up, Alex says she's just trying to absorb as much information as possible.

"It's just my husband, me, and our loader driver. We've also got three young children, so you've got to be willing to admit when you need help and reach out – rather than trying to battle through, and fudge it when you don't know."

Alex says another member of the group, Emma Tilyard of V3 Heli, "has been incredible".

"She's so open, approachable, and forthcoming with any information. Both she, and her husband Mark, have been such a big help to us. Even before we had our entry audit, they helped review our SMS to make sure that we had everything we needed.

"The more you can share, the better off we'll all be. I feel like the last year has flown by, but I've definitely learned heaps and feel much more comfortable and confident in my role.

"I'd say to any new safety managers, 'Definitely try to surround yourself with people who have more experience, because it's only going to lift you up.'"

Emma, who's both the safety manager and occurrence investigator for V3 Heli (another husband and wife operation employing one ground crew member), remembers when she was in the same situation as Alex.

"When we started our business, I went from being a pilot's wife, hearing his stories about the industry – but not, frankly, having a massive interest – to getting chucked in at the deep end as safety manager. I didn't know what a safety manual looked like. The 13 pillars of SMS meant nothing to me.

"I felt so alone, and we ended up with a safety manual Air New Zealand could have used – 139 pages!" laughs Emma.

In their SMS group, Alex, Emma, and others talk about their experiences around safety unique to each attendee.

"I've been able to get feedback from the group about how they would approach a situation I've faced," says Emma.

"We also had a situation where one of the women in the group had an issue, and she put a couple of possible solutions to the group.

"She wasn't sure how to proceed and her boss had told her to ask the group. It was awesome he was advocating getting advice from us all."

Emma describes another group member, Charis Work, of Rotorua-based Heli-Hire, as, "The kind of person you could go to and say, 'Hey, I don't even know what a safety manual looks like!'"

For her part, Charis says there's never a silly question and everyone is happy to offer support or advice.

"I enjoy knowing I have support from people in the industry. It would be awesome if other safety managers in the same region were able to organise this sort of thing."

The group also chats frequently online. "Members will send through something and say, 'Hey, I've just started doing this as part of my SMS and it's working well,'" says Emma. "It's great stuff that we can implement as well.

"We get together only a couple of times a year, but it's all the quick chats and online messages between those times which help.

"It's also knowing that, when you have a question, you've got multiple people to approach."

Meetings on the horizon

The newly appointed CAA Chief Advisor, Safety Management, is Penny Stevenson. She's keen to get in contact with groups like the ones described here, and with individual participant organisations.

"I'd like to meet these groups very soon. Firstly, because they've asked us to! But I also want to ask them what value they would see in some form of 'gathering' of safety managers. What that might look like. Where? What group numbers would work best? Across what sectors of our certificated organisations? What topics would they like to see as themes?

"We're obviously interested in ensuring that such gatherings help develop these groups' understanding of the ongoing management of safety – but we need to make sure the gatherings are relevant to what they want.

"So I'm really keen to gauge what they think would be valuable." ☺

// MORE INFORMATION

Download a digital copy or request a printed copy of *How to be a safety manager* at aviation.govt.nz/education.

Comments or queries?

Email penny.stevenson@caa.govt.nz

SHARING THE

// By Southern Lakes Helicopters

In the middle of a firefighting op, we had an occurrence that taught us a lot about what to do better.

In April 2022, in the final days of a firefighting operation east of Invercargill, we experienced an occurrence which we were fortunate did not end in a severe outcome.

We want to share what we learned to reduce the chance of other pilots experiencing a similar situation.

What happened

On the morning of the occurrence, the pilot conducted an aerial survey and positioned a crew onto the fire ground. He then returned to base to shut down – there were no more commitments until later in the day.

After the pilot shut down, he noticed the tail rotor was flapping due to the winds gusting 20–25 knots. They were forecast to increase so he installed the tail rotor chock.

Immediately after, an official came over to send him back to the fire ground to carry out some bucketing.

The pilot accepted the job and began preparing the aircraft. He removed the door and the pod, and stored them away from the aircraft where they'd be protected from rotor wash and the wind.

He then connected the fire bucket and performed his pre-start walkaround, to make sure the aircraft was configured correctly and that it was safe to start.

There were seemingly no problems, so he lifted into a hover and turned into wind. All the controls seemed to be functioning normally.

While enroute to the dipping pond, however, the pilot began experiencing reduced pedal capability.

After working through some problem-solving and effect of controls, he was unable to rectify the situation, so he aborted the mission and transmitted a MAYDAY call to the Invercargill tower.

The pilot identified a safe landing area, clear of hazards, then jettisoned the bucket and made a safe landing.

Once on the ground, he confirmed with the tower that he was okay, and he needed no further help.

The pilot shut down the aircraft, disembarked, and walked around to see...the tail rotor chock was still installed.

Why did it happen?

During our investigation, we identified a number of things which led to this.

On this occasion, the pilot didn't leave a witness indicator.

The pilot's normal routine was to place his helmet over the cyclic – as is the practice of many other pilots – to indicate the aircraft has tie-downs installed. Unfortunately this time, for whatever reason, he didn't place his helmet as he normally would have.

Distraction

An unexpected change in a job or plan is enough to throw anyone off track. We want to emphasise how important it is that when people are distracted in the workplace, they first stop and assess the urgency of the distraction, and respond accordingly.

LESSONS

This means if they're in the middle of something critical, such as a preflight, or reconfiguration, they either ask for a couple of minutes to finish what they're doing and then have the conversation, or, if they decide it's urgent, they leave a marker where they've got to. But it's preferable they restart their checks or duties, right from the beginning.

The hi-vis ribbons on the TRC had become dull and faded.

Many pilots will be familiar with the dull orange ribbon attached to the tail rotor chock. Our ones didn't stand out as well as they should have.

The hi-vis ribbons were longer than they needed to be, and the pilot tied it up around the tail rotor.

When we spoke to other operators, it seemed common practice for pilots to tie the ribbons around the tail rotor hub, so they don't flap against the aircraft. But, once they're tied up, they're extremely difficult to see.

There was minimal knowledge of, or familiarity with, the use of picketing items, particularly the tail rotor chock.

Once again, talking to other operators, we found there was a wide range of opinions about how or when these items should be installed or not installed. We also felt the instructions for the use of picketing items in the aircraft flight manual were also light and non-informative.

There was a lack of company documentation relating to the tying-down of aircraft.

We didn't have any procedures or guidance material relating to the use of these items. »



» The hi-vis ribbons on the tail rotor chock didn't stand out as well as they should have.



// Southern Lakes Helicopters have designed and made a 'witness indicator' which is placed on top of the cyclic.



// Southern Lakes Helicopters have "made and installed new hi-vis yellow tail rotor chock ribbons. They're much shorter than the standard ones and are unlikely to slap against the aircraft. They cannot be tied up around the tail rotor hub, and out of sight."

Photos courtesy of Southern Lakes Helicopters.

» What didn't happen?

As far as we could identify, we were able to rule out some other typical human factors.

Fatigue

This was day three for the pilot, after three days off.

Mission or time pressure

This was day 14 of the fire response and the emergency was very much over. The pilot has proven experience in SAR, medivac and firefighting operations. It's unlikely the pilot was feeling any pressure to perform these tasks.

So what happens now?

We've designed and made a 'witness indicator' or cyclic sock for our entire fleet, which is placed on top of the cyclic. It's bright red with a yellow tail stating in bold, 'Tie down & tail rotor'.

When tying down the aircraft, the witness indicator must go on first, before any picketing items are installed.

In reverse, it's the very last item to be removed after all the picketing items are off. We use the mantra, *First on, last off*. For this to work, the cyclic sock remains in the top of the stow bag when not in use.

The value of this process was highlighted a month later during a search and rescue operation. After aborting a night rescue attempt due to weather, the pilot tied down the aircraft for the night. A new pilot began the operation the following morning and was able to walk around the aircraft knowing picketing items were installed, including the tail rotor tie-down. After the pilot removed and accounted for all picketing items, the cyclic sock was removed and placed into the top of the bag.

This process is especially important for pilots undertaking operations in darkness or performing their preflight checks before sunrise.

The company now requires that, if the tail rotor chock is installed, our pilots must also install the blade tie-downs.

We've made and installed new hi-vis yellow tail rotor chock ribbons. They're much shorter than the standard

// Check the condition of the hi-vis ribbons. Are they clean and bright? If not, get new ones. //

ones and are unlikely to slap against the aircraft. They cannot be tied up around the tail rotor hub, and out of sight.

These items are supported by a company SOP and were made locally in Fiordland by an upholsterer.

We've better defined 'distraction' in our company hazard register, and developed further control measures and tools for pilots and ground crew.

We added the use of picketing items into the company hazard register.

What else happens now

We continue to promote the importance of the pre-departure walkaround for all operations. We know from previous occurrences that pilots who don't participate in this inspection are more likely to experience a problem.

Two months before the occurrence, we began a random risk-based audit over the course of six months. Company auditors were observed and photographed all pilots participating in this. We were pleased to see a high level of continuity and process being undertaken by our staff, and we expect this routine will continue.

We engaged with the CAA and the aircraft manufacturer to suggest further guidance material for pilots in relation to the use of picketing items.

What do we recommend happens at your operation?

Ensure your team gets together to discuss your thoughts, experiences, and expectations around the use of picketing items. This includes, why, what, when, and how.

Make some witness indicators suiting your aircraft type and functions. In our case, we designed the 'cyclic sock'.

Avoid tying up or removing hi-vis ribbons from the tail rotor chock or any other picketing items that have them installed. They are there for a reason and that's to get attention.

Check the condition of the hi-vis ribbons. Are they clean and bright? If not, get new ones. Make sure they stand out.

Consider replacing your blade tie-down ropes with new hi-vis lines.

Ensure all pilots continue to perform the pre-departure walkaround procedures.

Discuss the issue of distraction with your whole team. What does this mean? How do you deal with it? This also means making sure your staff aren't the ones being the distraction.

Summary

We all know how lucky we are that this occurrence didn't result in disaster. The pilot performed his emergency procedures exceptionally, thanks to his experience and ongoing training.

We hope our lessons and actions will help others avoid a similar situation in the future.

Now is a good time to talk with your team and your peers. 🙌

// Ensure your team gets together to discuss your thoughts, experiences, and expectations around the use of picketing items. This includes, why, what, when, and how. //

aviation.govt.nz/safety-initiatives

SAFETY INITIATIVES FOR THE CURRENT PICTURE OF THEMES IN, AND THREATS TO, AVIATION SAFETY

The aim of the *Safety Initiatives* webpage is to help aviators make better decisions and fly more safely by giving them a picture of existing threats and emerging safety themes.

The page will be regularly updated to provide a range of articles to help mitigate the current hazards in New Zealand's aviation community.

PETE GORDON NEW ASA



After seven years as a Flight Operations Inspector (FOI) in the CAA's Helicopter and Agricultural Unit, I'm taking over from Mark Houston as the North Island (operational) Aviation Safety Advisor.

My experience as an FOI has extended my knowledge of operating in the regulatory system on topics such as dangerous goods, flight and duty and alternative flight and duty schemes, risk management and safety management systems, and of course, how to interpret the civil aviation rules.

Before joining the CAA I was flying in PNG, supporting oil and gas, mining, and the PNG Defence Force. Operations included shifting drills, passenger transfers, geological surveys, and crew shifts and patrol work with the defence force.

It's been almost 50 years since I started in aviation, flying fixed-wing aircraft, gaining a PPL in 1974, then my CPL in 1976. By 1978 I had progressed into agricultural flying with Cookson Airspread, where I converted to helicopters, in 1979.

During my flying career, I've switched between fixed-wing and rotary, as dictated by the farming economy, and accumulated in excess of 25,000 flight hours.

During my time in aviation, I've developed a strong desire to see operators and pilots alike, continuously improving their operations in a safe and compliant manner. This led to me gaining strong operational knowledge and becoming heavily involved with the implementation of safety management systems in New Zealand, an area I'm very passionate about and only too happy to help with.

OCCURRENCES DASHBOARD

These are the number and type of occurrences reported to the CAA, 1 October 2022 to 31 December 2022.

Occurrence type

23	Aircraft accident
28	Aerodrome incident
288	Aviation-related concern (for example, complaints about low flying)
397	Airspace incident
570	Bird strike
246	Defect
5	Dangerous goods occurrence
16	Hang glider accident (5 hang glider, 11 paraglider)
448	Operational incident (for example, encountering severe icing)
17	Navigation installation occurrence (for example, a transmitter failure)
2	Parachute accident
10	Promulgated information occurrence (for example, inaccurate weather information)

AVIATION SAFETY ADVISORS

Contact our aviation safety advisors for information and advice. They regularly travel around the country to keep in touch with the aviation community.

John Keyzer – Maintenance, North Island
027 213 0507 / john.keyzer@caa.govt.nz

Pete Gordon – Operations, North Island
027 839 0708 / peter.gordon@caa.govt.nz

Carlton Campbell – Operations, South Island
027 242 9673 / carlton.campbell@caa.govt.nz

LETTERS TO VECTOR

Is that ELT really "stuffed"?

I was bemused to read Mark Houston's ELT saga (Summer 2022/23, *Raising the alarm accidentally*)

Regretfully, it's not uncommon for 'engineers' to take the easy way out in some parts of the country, and state that the ELT is stuffed. In the case described, it was obviously not stuffed but whoever installed it stuffed up the installation – was it an 'engineer'?

If it had activated for 30 minutes, it could have been reinstalled without changing the battery! Hopefully the ELT was not thrown away.

Another issue that puzzles me is that the ELT could have been turned off at the remote control which also should have been visible to the pilot showing a red LED light blinking away to alert him to the fact that the ELT had been activated.

Was the remote control not in a position that was visual to the pilot?

As for workshops and inadvertent activations, an inexpensive VHF scanner set to 121.5MHz, with an external speaker attached, would save thousands of dollars a year in resources.

Lloyd Klee
Tauranga

Mark Houston replies:

Lloyd, I used the term 'engineer' with the highest regard for the skills and attributes of all you who maintain the aircraft and systems to keep us flying.

Considering this was some decades ago I cannot verify who installed the ELT.

In this case it was decided to replace the unit as they suspected an inertia switch issue and so replacement would get me away to work sooner.

There was no remote switching for the ELT installed. It was possibly still on the bench with the VHF!

I'm also reminded of an occasion where an actual ELT activation was dismissed as a possible 'inadvertent'.

By the time I got to the accident site as one of the investigators, the ELT was still transmitting but the antennae was burned through.

I like your comment about having a VHF on 121.5MHz and a speaker in the workshops.

This is obviously a reflection of the number of IELTAs still happening.

(*Vector* Summer 2022/23 "Raising the alarm accidentally" notes that in the first 19 days of October 2022 there were nine inadvertent activations during maintenance.)

Prop strike = bulk strip

Recently, I was talking to a young pilot, and he could not see why an aircraft engine had to undergo a bulk strip, "just because of a prop strike". He maintained that it was only the prop that got damaged.

I took this photo of the camshaft gear, from an engine that suffered a prop strike. You can think of the close call and the 'what ifs', had this engine continued in service.

Peter Milner, LAME
Motueka



// DEAR VECTOR...

Reader comments and contributions on aviation safety are welcome. Email education@caa.govt.nz or the specialist whose name appears at the bottom of an article. We may edit or shorten letters, or decide not to publish.

ACCIDENT BRIEFS

Eipper Quicksilver MX II

Date and time:	16-Apr-2022 at 08:30
Location:	Private strip
POB:	1
Damage:	Minor
Nature of flight:	Private other
Pilot licence:	Private Pilot Licence (Aeroplane)
Age:	64 yrs
Flying hours (total):	164
Flying hours (on type):	30
Last 90 days:	7

After take-off, at approximately 400 ft in the climb, the pilot felt the control stick lose its pressure to the rudder and just flop back and forth. The pilot found that he still had elevator and spoiler control available.

The spoilers were used to keep the wings level and power was reduced to descend to the ground. This resulted in a hard landing which damaged the nose wheel assembly.

The owner of the aircraft examined the aircraft after the accident and found that the rudder cable end fitting had failed at the control stick. Visual indications are that the fitting had likely been bent at some point in the past and had likely failed due to fatigue.

CAA occurrence number 22/1971

Hughes 369E

Date and time:	09-Feb-2022 at 09:20
Location:	Māhia Peninsular
Nature of flight:	Other aerial work
Flying hours (total):	295
Flying hours (on type):	61
Last 90 days:	12

While in straight and level flight, at approximately 1000 ft, the pilot pushed the aux tank valve down to transfer fuel into the main tank. At this point the aircraft yawed suddenly and the engine wound down. The pilot then lowered the collective and entered an autorotation, and carried out an emergency landing.

Post-accident testing and inspection of the aircraft and engine fuel systems could not establish any fault with the fuel supply. The pilot may have unintentionally rolled the throttle back to idle while operating the aux tank valve and may not have recognised this prior to landing.

CAA occurrence number 22/696

More accident briefs can be seen on the CAA website, aviation.govt.nz > **safety** > **aircraft accident briefs**.

Some accidents are investigated by the Transport Accident Investigation Commission, taic.org.nz.

Robinson R44

Date and time:	05-Jan-2022 at 13:30
Location:	Hawke's Bay
Nature of flight:	Agricultural
Pilot licence:	Commercial Pilot Licence (Helicopter) Private Pilot Licence (Helicopter)
Age:	33 yrs
Flying hours (total):	2650
Flying hours (on type):	1250
Last 90 days:	90

During the 38th load of the day in the afternoon, the pilot performed a left turn into wind while descending into a valley. On completion of the turn, the pilot found that they had insufficient power to arrest the rate of descent and that a hard landing was imminent. They prepared for the hard landing by attempting to find a flat spot to conduct a running landing but was unsuccessful and the aircraft rolled onto its left side, damaged beyond repair. The pilot was uninjured.

The operator conducted an internal investigation as well as reviewed the activation of their ERP.

A review of the aircraft loading and performance calculations based on a density altitude of 2,446 feet determined that the aircraft was within limits and had IGE hover capability up to 6,100 feet, but an OGE of 2,000 feet (446 feet lower than the operating altitude, requiring close power management while operating at low airspeed).

The valley had increased in temperature throughout the day, resulting in an increased operating density altitude with an under appreciation/identification of the degrading aircraft performance associated with the temperature increase.

The operator has elected to replace the helicopter with a model that offers greater performance capability.

CAA occurrence number 22/11

ACCIDENT NOTIFICATION

24 hour 7 day toll free telephone

0508 ACCIDENT (0508 222 433)

aviation.govt.nz/report

GA DEFECTS

KEY TO ABBREVIATIONS:

AD = airworthiness directive **NDT** = non-destructive testing
TIS = time in service **TSI** = time since installation

P/N = part number **SB** = service bulletin
TSO = time since overhaul **TTIS** = total time in service

Guimbal Cabri G2	
Carburettor	
Part model:	MA-4SPA
Part manufacturer:	Marvel Schebler
Part number:	10-5217
ATA chapter:	7100
TSI hours:	8.6
TTIS hours:	2587.3

During cruise the pilot noticed that the engine RPM was uncontrollable, resulting in exceedances. The pilot elected to conduct a precautionary landing.

The initial engineering evaluation found that the throttle push pull control cable was broken. Further inspection revealed considerable restriction in the acceleration of the carburettor's pump plunger due to wear and inadequate lubrication of the associated felt washer. The maintenance engineer believed that this restriction caused the failure of the throttle cable over many cyclic load applications from the throttle and governor control. The throttle cable is not life limited and the aircraft manufacturer could not identify any discrepancy with the throttle cable.

[CAA occurrence number 21/3397](#)

NZ Aerospace FU24-950M	
FADEC	
ATA chapter:	7310

The pilot reported to the maintenance provider that the engine fuel flow was higher than expected in flight.

The maintenance investigation found a fuel leak from a loose fuel line connection at the fuel control unit.

During earlier maintenance on the aircraft, a fuel flow test had been carried out. Following this test, the fuel line connection was not tightened sufficiently. The supervising engineer had also failed to identify and check all components disturbed during the maintenance.

A meeting was held between the two engineers involved, the company CEO, and company safety manager to discuss the maintenance error. The importance of having critical systems double-checked after being disturbed was discussed. A meeting was also held with all staff reiterating the processes for assembling critical parts to prevent 'temporary' installation in an incorrect manner from being overlooked.

[CAA occurrence number 21/2077](#)

GA defect reports relate only to aircraft of maximum certificated take-off weight of 9000 lb (4082 kg) or less. More GA defect reports can be seen on the CAA website, aviation.govt.nz > aircraft > GA defect reports.

Robinson R44 II	
Aux Fuel Pump	
Part model:	19001-B
Part manufacturer:	Weldon
Part number:	D743-3
ATA chapter:	2820
TTIS hours:	2066

The aux fuel pump light illuminated during final approach, with no effect on engine operation.

The maintenance investigation found that the fuel pump motor brushes were completely worn to the point that they were no longer present. The aux fuel pump was replaced.

To prevent a reoccurrence, the operator has established a 2000-hour life on the aux fuel pump.

CAA note: RHC have amended the R44 Maintenance Manual (Dec 2021) Additional Component Maintenance section, to include replacement of the Aux Fuel Pump every 2200 hours TTIS with a new pump Pt No. D743-3.

[CAA occurrence number 21/5578](#)

Diamond DA 42	
FADEC	
ATA chapter:	7600

The pilot reported a burning smell and smoke behind the instrument panel.

The maintenance investigation found that the cabin air duct was contacting the LH ECU battery pack positive terminal, causing arcing and heating of the duct wire and giving off smoke and a burning smell. The batteries were replaced with the positive terminal insulated. The duct was re-routed for clearance. An operational check was carried out on the ECU backup system and found to be satisfactory.

[CAA occurrence number 19/3780](#)

REPORT SAFETY AND SECURITY CONCERNS

Available office hours (voicemail after hours)

0508 4 SAFETY (0508 472 338)

isi@caa.govt.nz

For all aviation related safety and security concerns.

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New Zealand airspace

Another updated GAP booklet, offering the most up-to-date information on ADS-B in controlled airspace; designated, non-designated and special use airspace; UAV flying, and air traffic services. Practical advice is included on how to get hold of necessary resources, like visual navigation charts and AIP publications, and there's also a list of useful – some newly built – website resources.



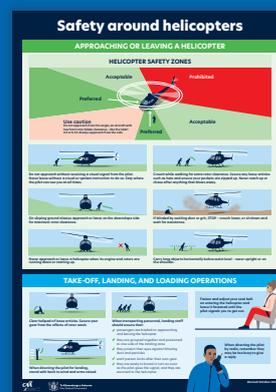
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Encountering wake turbulence can be especially hazardous during the landing and take-off phases of flight, where the aircraft's close proximity to the ground makes recovery more difficult. Another in our release of updated GAP booklets, *Wake turbulence* offers the most recent advice on how to mitigate the effects of this potentially deadly phenomenon.



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