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Summer 2021/22

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What it means to be a senior person

A black box for GA – explaining the unexplained

Dual controls – who can change them

TO HELL AND BACK

A PILOT'S JOURNEY TO REGAIN MENTAL HEALTH

CAA
CIVIL AVIATION AUTHORITY OF NEW ZEALAND
Te Mana Rererangi Tūmatanui o Aotearoa

// WHAT IT MEANS TO BE A SENIOR PERSON

// A BLACK BOX FOR GA

// DUAL CONTROLS – WHO CAN CHANGE THEM

Cover photo: Stocksy/kkgas

Agricultural pilot Pete Blake witnessed two mates die in a wire strike. In the years following, he learned about the value of talking about stress, grief and depression, and to reach out for help.

See our cover story on page 13.

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Photo courtesy of Whanganui Airport

// The UNICOM operator can pass on the weather conditions they observe at the aerodrome.

WHAT THE HECK IS UNICOM?

If you're a pilot who's never been to Ardmore, you've probably never come across UNICOM. Now that Whanganui Airport has also established the service, it's probably time to explain what it is, what it isn't, and how to use it.

A UNICOM (universal communications) service is provided at uncontrolled aerodromes that have become busy enough to warrant additional oversight of airfield activity by a dedicated operator.

It is *not*, however, an air traffic service.

The UNICOM operator can pass on to pilots the weather conditions the operator observes at the aerodrome. They can also, when requested by a pilot, relay information about the general location of other aircraft.

They can give information on the runway currently in use but not designate the runway to be used.

With an air traffic service, responsibility for traffic management transfers from the pilot to ATS and the pilot must comply. But with UNICOM, the operator transmits useful information but the pilot still makes the decision about what to do. »

// MORE INFORMATION

For more information on what a UNICOM service provides and does not provide, read Advisory Circular AC139-12 *Aerodromes – Certification, Operation and Use – UNICOM and AWIB Services* at **aviation.govt.nz > advisory circulars**.

// The Whanganui airfield receives a high number of itinerant pilots.

» Why Whanganui?

When Whanganui Airport's safety officer Hayden MacPhee was a B-cat with the local aero club 20 years ago, there were fewer than 10,000 movements a year at the airfield.

Just before COVID-19 hit last year, there were about 83,000, mainly due to the establishment there of the commercial pilot academy.

Hayden says that because of the location of Whanganui, the airfield also receives a high number of itinerant pilots.

"They follow the coast as they transit through. Or they drop in to refuel because we're quite central.

"But if they haven't done proper preflight planning, they can be a real risk to safety.

"We've had them transit through the circuit on their way to somewhere else. We've had a spate of pilots trying to conduct a non-standard joining procedure. Some of them are completely unprepared for all the training traffic.

"Apart from the sheer number of flights the academy does, if someone tries something a bit left-field as they join, it can confuse the student pilots and contributes even more to a potential breakdown in safety."

Another factor is the number and wide range of airfield users – from ab initio training flights to agricultural operations, from air ambulance and passenger transport flights to extensive helicopter operations.

"The helicopter circuit is contra to the fixed-wing circuit so if fixed-wing aircraft end up descending on the wrong side of the traffic pattern, they'll be in conflict with the helicopter circuit," says Hayden.

"And helicopter pilots need to remember there are specific requirements applying to rotary operations in that, if they arrive from the south, they must conform to the established fixed-wing circuit pattern, and not just find a gap and squeeze in, usually directly to a fuel installation."

CAA aeronautical services officer (aerodromes) Nick Jackson says a UNICOM service exists to facilitate aviation at an uncontrolled aerodrome.

"By providing basic aerodrome information, it allows an airport operator to oversee activities at the aerodrome, making sure pilots are aware of hazards and promoting safety.

"Pilots still retain full responsibility for how they operate their aircraft. A UNICOM operator cannot provide an air traffic service.

"A UNICOM operator can, however, provide information, if a pilot asks for it, on the general location of any aircraft the UNICOM service operator knows about.

"They can give details of temporary or permanent navigation hazards associated with the aerodrome, normally published or notified by the aeronautical information service."

Nick says if a UNICOM operator becomes aware a collision is imminent, the operator should do all they can to inform the pilots, so the pilots can determine the best course of action.

"When the UNICOM operator exercises such duty of care, the aerodrome operator must track and investigate the occurrences, and report them to the CAA.

"They provide useful information when the continued suitability of UNICOM is reviewed or if the introduction of an air traffic service is warranted."

Hayden MacPhee says the operators at Whanganui are happy to help out pilots who haven't encountered a UNICOM service before.

"All they need to do is call the tower at Whanganui on (06) 349 3166 and say, 'Hey, I'm not familiar with this, can you help me?' On the VHF frequency the same applies: 'Whanganui UNICOM, Alpha Alpha Juliet, this is my first time using UNICOM'.

"But we really urge them to consult the AIP before they fly," says Hayden.

"If they're trying to do that only as they approach the airfield, they could get themselves and everyone else into real conflict."

Comments or queries? Email **aerodromes@caa.govt.nz**

// Suzie Calder, who's the senior person responsible for the system for safety management (the safety manager) at Rural Air Work, discussing SMS reporting and risk management with pilot Alex McHardy.

WHAT IT MEANS TO BE A SENIOR PERSON

You're joining the management team as a senior person – a long-held goal. It's your chance to have real, positive influence in the organisation. Here's some guidance on that.

What is a senior person?

The term 'senior person' describes someone accountable for the safe outcome of an aviation activity.

Other authorities and other sectors use terms such as 'accountable executive', 'nominated post holder', and 'nominated person'. 'Senior person' means the same thing. You're a person specifically approved by the CAA to be held accountable for safety at the highest levels of the organisation.

Staying on top of the role

In the same way an initial private pilot licence is regarded as a 'licence to learn', being accepted as a senior person means you have met the minimum requirements for acceptability. This is just the beginning of your journey.

As the Good Aviation Practice booklet, *How to be a senior person* says, "It would be a mistake for a newly appointed senior person to think they were now 'through the gate' and they can take their foot off the pedal. »

Photo courtesy of CAA/Mark Houston

MULTIPLE HATS

"As a senior person you've become an integral part of the management team," says CAA flight operations inspector Neil Dodds, "but that also has to sit alongside any operational role you may also be carrying out.

"So you're wearing multiple hats and it can become a bit of a balancing act. Being able to see your roles individually and independently is a good skill to gain."

The CAA's manager of security regulation, David Willing, says competing work priorities may draw someone away, or distract them, from what they need to be focussing on as a senior person.

"An 'elsewhere focus' potentially degrades skills and knowledge, because they're not being used all the time," he says.

"Your ability to fully understand what the big risks and key tasks are will help you plan, prioritise and communicate within your organisation."

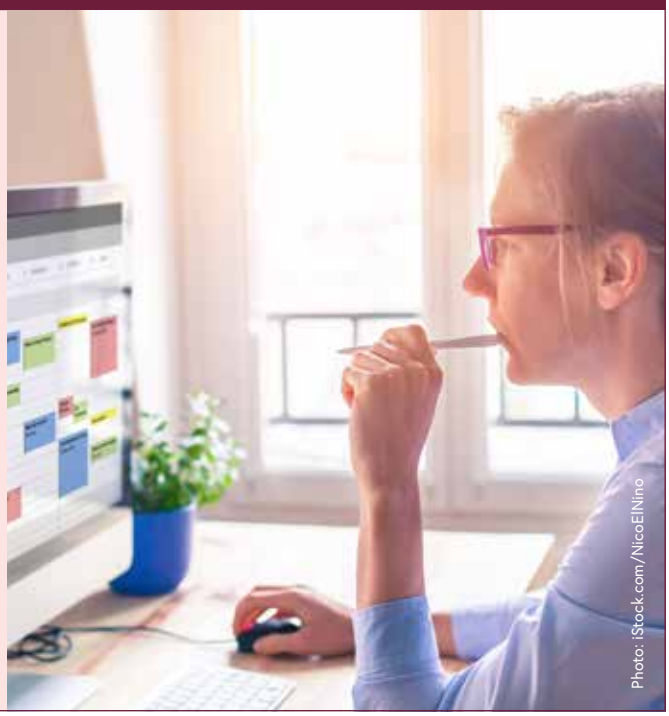


Photo: iStock.com/NicoElNino

"It's a role you should be able to grow into," says CAA flight operations inspector Neil Dodds. "You need to keep up-to-date with changes in the civil aviation rules and how to comply with them, and with changes in your organisation's exposition and other documentation.

"A good senior person is honest, professional and has a high degree of integrity," says Neil. "The role requires persistent commitment to safety and/or security, to accountability, and to continual self-directed professional development."

That includes attending user group meetings, participating in professional seminars, taking a full part in management discussions and decisions about safety, and mentoring younger or newer members of staff in what it means to have a safety and security culture.

It also involves communicating with the other senior persons in the organisation, and with the CAA, and having the assertiveness and courage to fight for safety or security measures when there are road blocks.

How to be a senior person concludes, "To retain the position, [a senior person needs to] constantly illustrate that they are positive, proactive, and constructive."

"And senior persons," says Neil, "may find themselves being an educator, auditor, assessor and systems manager all in the same day."

A job for the work-shy, it is not.

Accountability and responsibility

For leaders wanting to improve the performance of their safety management system, understanding the difference between accountability and responsibility is key. The terms are often used interchangeably, but they have distinct meanings that could prove crucial to the success of a business.

For example, a senior person may be *accountable* for airworthiness and may themselves accomplish all the tasks associated with that. Or they may delegate those tasks to someone else. That second person is *responsible* for getting those tasks done successfully, but the senior person is still accountable – can be held to account – for those tasks being done successfully. Responsibility can be shared or delegated, but accountability cannot.

Neil Richardson, a UK-based safety management specialist, says, "Accountability is a key element of effective leadership and is essentially about taking ownership to ensure responsibilities are met.

"Accepting that you can be 'held to account' helps avoid blame, builds trust and develops responsibility – which are positive assets to any operation.

"Accountability and responsibility are not mutually exclusive and can exist at all levels in the business. Any person with responsibilities can and should be held to account for their actions with *ultimate* accountability residing in the most senior position."

// Senior persons, may find themselves being an educator, auditor, assessor and systems manager all in the same day. //

Seeing accountability as something you choose and a way to get directly involved with the success of your operation will help make your engagement with the CAA a positive experience.

Part of the team

The manager of the CAA's monitoring and inspection team, Steve Kern, says it's important a part-time senior person is not 'siloed' from the rest of the management team.

"They have a critical contribution to make to the organisation's management of safety and must be included in key management meetings, risk management, and decision-making.

"Not only must the owner/chief executive recognise this, so must the senior person themselves. Unfortunately, we regularly come across part-time senior persons who've never been included in a management review, let alone other key management functions."

Jim Finlayson has been a senior person for a number of companies in the training manager role.

He says the main challenge is being visible and being involved in the overall company activities, not just the specialist senior person role.

"As a senior person, you have a responsibility to know what the company is doing. Particularly in an SMS context, you must be involved enough to be an active participant in the company decision-making, whichever position you hold. »

IS TIME ON YOUR SIDE?

It's the nature of today's aviation world, that senior persons are increasingly not full-time, onsite employees of an operation.

Sometimes, particularly in smaller organisations, that's entirely appropriate. What's important is that the senior person, who may have several clients, can carry out the full responsibilities of the role, in spite of limited time physically at each organisation.

CAA flight operations inspector Neil Dodds says that even for someone whose senior person role is of a part-time nature, "The responsibility of the role sits with you for the period you hold that role.

"While there are duties you can reassign, you're ultimately accountable for those duties being completed."

The Good Aviation Practice booklet *How to be a senior person* says, "It's very hard to promote change, and to supervise and monitor the organisation completely from afar.

"So it's expected [the senior person] will exercise visible leadership and allocate an appropriate amount of time to onsite activities."

THE SYSTEM RELIES ON YOU

A successful management system depends on the team of senior persons working together to measure and analyse the performance of the system.

"Think of this working together as a 'handshake' where the output of one senior person's efforts becomes the input to another person's efforts, ie, the linkage between one functional area and another," says Trevor Jellie, a technical specialist with CAA's monitoring and inspection unit.

"As a senior person you're not only accountable for your particular patch, you're also accountable for the 'handshake' that must occur with your fellow senior managers. Many threats to safe operation occur at these handshake boundaries. If these handshakes fail, the system will fail.

"As a senior person you must continually think at a systems level and look for threats to the operation as a whole, not just your particular area of responsibility."

OBLIGATIONS TO HSWA

CAA monitoring and inspection technical specialist Trevor Jellie says if senior persons are meeting their CAA safety management system obligations, they'll also be meeting their obligations, in terms of accountability, to current health and safety legislation.

"The Health and Safety at Work Act 2015 and the safety management system required by Part 100 both require that staff, customers and the public are protected from harm.

"The expectation of accountability under HSWA is consistent with the ICAO framework for a safety management system.

"In this context, accountability means an obligation of a person to ensure a safety-related task is carried out as required, and to be ultimately answerable for this in accordance with agreed expectations.

"As a senior person, you must be accountable for your actions and hold others to account."

IF YOU'RE STRUGGLING

Reach out to others in the same role and ask how they handle situations. Organise regular catchups with other safety managers in your area. If you feel comfortable doing so, call the CAA to talk about an issue.

For a refresher, visit aviation.govt.nz and search for 'senior person' in the rules, and advisory circulars. Have a look at Advisory Circular AC100-1 *Safety Management*.

Read "The changing role of the senior person" in *Vector* Jan–Feb 2018, and other senior person articles in *Vector* Nov–Dec 2006, Jan–Feb 2012 and Mar–Apr 2012.

Download a copy of *How to be a senior person* and *How to be a safety manager* Good Aviation Practice booklets from aviation.govt.nz > safety > safety advice > Good Aviation Practice booklets.

// Demand to be part of management meetings. You have a duty to keep them up-to-date, even if they don't ask. //

"That means being often on site, being involved in company management and safety meetings, and having a voice.

"You must be an energetic, full-functioning member of company management."

The 'not-really-part-of-management' attitude is common for maintenance controllers (the senior person responsible for the control and scheduling of maintenance), especially if they're also the maintenance provider. This is because they're often in an offsite workshop while the rest of management sits in the office at the operation's base.

CAA airworthiness inspector Robert van Asch says that physical separation potentially leads to a leadership and decision-making separation as well.

"The maintenance controller is just as responsible as the rest of the senior person muster to make sure they're included in discussions, decisions, policy-making and direction of safety in an organisation.

"But in this situation, sometimes when you talk to operators, they talk about 'them' – *their* senior person responsible for the control and direction of maintenance – and 'us' – the rest of management. And vice versa when you talk to an offsite maintenance controller."

CAA flight examiner (engineering standards) Garry Hackett agrees any senior persons – including maintenance controllers and anyone not permanently on site – have an obligation to communicate fully with the rest of management.

"You know things the rest of them don't know. They don't have your skills or experience and your current awareness of what's happening with the airworthiness of their aircraft.

"Demand to be part of management meetings. You have a duty to keep them up-to-date, even if they don't ask."

Operator responsibilities

A technical specialist with the CAA's Security Regulation Unit, Mark Stephen, says the responsibility for a senior person doing their job properly lies as much with their company, as it does with the individual.

"I don't believe you can have a robust management system without picking up that you have a senior person who's struggling," Mark says.

Mark interviews senior person candidates for regulated air cargo agents (RACAs). He says the organisation is also responsible for putting someone up as a senior person candidate who's experienced in their field and enthusiastic about how they can contribute to the organisation.

"Senior person responsibilities should not be looked on simply as a box tick for an organisation to stay certificated.

"For instance, a demonstrably good senior person in a RACA will give confidence to their company and the CAA, that the checks and balances necessary for a secure supply chain of cargo are in place.

"While RACA quality assurance is ultimately about the security, and therefore safety, of passengers who're sharing the aircraft with cargo, it's also about the reputation of the RACA through whose hands that cargo has passed.

"The value of an energetic and conscientious senior person is of huge benefit to the organisation. It can't be underestimated."

The Good Aviation Practice booklet, *How to be a safety manager,* says a senior person is entitled to feel supported by their chief executive – themselves the senior person ultimately accountable for all aspects of the operation.

"You also have to have the right resources – and enough of them – and the authority to make decisions about safety that will be taken on by staff. That's largely the CEO's responsibility," says the booklet.

"The CEO must show the rest of the staff that they are committed to what the [senior person] is doing. That's not just a matter of saying they're committed. The CEO must also provide the resources needed for the [senior person] to do their job properly, and model, by their actions, that they are participating, supporting, and engaged with the safety [and security] programme."

Comments or queries?
Email **adrian.duncan@caa.govt.nz**

A BLACK BOX FOR GA

EXPLAINING THE UNEXPLAINED

FENZ and DOC say aircraft carrying their personnel must now have a cockpit data recorder.

In the last decade there have been seven deaths in four fatal accidents of aircraft carrying out operations for Fire and Emergency New Zealand and the Department of Conservation.

Some of those who've died have been workmates and friends of Richard 'Mac' McNamara who leads the aviation team at Fire and Emergency New Zealand. For him, doing whatever he can to improve aviation safety is personal.

"Too many crashes around the world," he says, "have no confirmed cause, and that's no longer acceptable."

So Mac, and his opposite number at the Department of Conservation, Aviation Risk Advisor Jeremy Feasey, have spearheaded the 1st November 2021 mandate that all aircraft transporting their staff must be equipped with a cockpit video, audio and data recorder.

Photo: iStock.com/Southerneye

“There are operators and pilots who say a cockpit recorder won’t prevent an accident as it happens,” says Mac. “But what it will do is give us information that might prevent the next one.

“We do a disservice to anyone who dies in one of these accidents if we don’t learn from their tragedy, and pass that lesson on.”

There’s a gathering drive around the world to have cockpit recorders installed in small GA commercial aircraft, and when FENZ and DOC, who share the same operating standards, decided to update and tighten those, the November mandate regarding cockpit recorders was included.

“FENZ and DOC are pretty much in sync as to the benefits of cockpit recorders,” says Jeremy. “It’s not just finding out what went wrong in an accident, it has other great uses as well, such as using the data as the basis for a flight data monitoring programme that would feed back into pilot training.

“When used as part of an operator’s safety management system, there’s the potential to see areas to improve and put in place preventative measures, before an incident or accident triggers a retrospective fix.”

The improved standard became operational on 1st November 2021 and the first communication regarding that was about two years ago.

“But if there’s a reason why an operator has not been able to meet the November deadline,” Jeremy says, “we’d consider a case-by-case extension on specific aircraft having data recorder installation dates post-November.

“But they’ll need an acceptable plan with reasonable timelines for that installation.

“In the meantime, we’ll obviously be making use of aircraft that are already equipped.”

// FENZ and DOC will now only use aircraft equipped with cockpit recorders, to transport their staff.

The agencies’ decision about mandating cockpit recorders was made after researching where helicopter associations and industries had gone on the issue in the United States, Canada and Australia.

“We’re not alone in wanting these devices,” says Mac. “They’re in the oil and gas, forestry and powerlines industries. And we’re the ones paying the bills so we get to have the say on specifications.”

The agencies are so keen on the devices they’ve told industry that operators can adjust the hourly rate they charge, to cover the purchase and installation costs of the kit.

// It’s not just finding out what went wrong in an accident, it has other great uses as well, such as using the data as the basis for a flight data monitoring programme that would feed back into pilot training. //

Improving the bottom line, improving practice

A BK-117 coming into Queenstown with nine passengers on board suddenly had a 30-degree uncommanded yaw to the right.

The PIC carried out the promulgated procedure and turned off the yaw SAS (stability augmentation system). The plan, on initially consulting with the engineers, was to send the yaw SAS to Auckland for investigation and repair. The estimate for how long this would take was up to six weeks.

But video footage from the machine's cockpit recorder was despatched to the maintainer, who identified that the artificial horizon – which drives the yaw SAS – on the co-pilot's side had toppled. The artificial horizon was replaced. The aircraft was flying later that day.

Joe Dewar, who's the manager of CAA's intelligence team, thinks the videos will be of great benefit to operating practice.

"We have quarterly industry association meetings to discuss safety cases, incident reports and trends. Operators who attend them, and recipients of the subsequent sector updates, ask for more visual information about occurrences and accidents, particularly pictures.

"And I say, 'Well, I'll try, but we often don't receive much in the way of photographic evidence about what happened'.

"But just wait until we've got folks ready to submit de-identified clips and videos – I think our operators will really appreciate what this can do to improve the quality of the information they need." »

SAFETY OUT OF TRAGEDY

In February 2015 near Queenstown, 18-year-old student pilot James Patterson Gardner was killed in the mid-air breakup of a Robinson 44.

While the coroner's findings have yet to be released, TAIC's report said the breakup happened when "...one of the main rotor blades struck the cabin..." (known as mast bumping).

But the commission went on to say, "...the true causes of mast bumping and in-flight break-ups are often not able to be determined...".

It recommended the promotion of "the need for cockpit video recorders..." or a similar form of data capture. (TAIC AO-2015-002)

James' mother, Louisa Patterson, found the lack of clarity around James' death "unacceptable in today's world".

"There were many questions, and no answers – aircraft should not inexplicably break up in flight."

So she set out to develop a New Zealand-designed and -made cockpit video recorder that would provide data about what was happening in the lead-up to a helicopter or light aircraft accident.

The result of that is the cockpit recorder system, 'Eye in the Sky'.

Proceeds from sales go to a foundation established in James' honour to support young adults who show exceptional skills in aviation, opening doors that will develop their careers and further the cause of aviation safety.

Louisa says cockpit recorders have many benefits, other than their primary purpose.

"For instance, we've found it can shorten an occurrence investigation," she says. "We had a helicopter take off from our hangar recently and it blew over some hazard cones near the BP installation, where they were extending the fuel tank area.

"An occurrence report was submitted to the airport company and the pilot concerned also submitted video footage. The video clearly showed a large fuel tanker taking up room on the access way, and the pilot had, in fact, taken off through the safest place available.

"The occurrence investigation closed within the hour."

Louisa says the video information can also provide pilot training opportunities.

"On a rainy day, an operator might brief pilots on a particular issue and say, 'Let's look at this footage – see what we did here, see how the aircraft performed here'.

"Or they might debrief a pilot involved in an occurrence – 'Can you see it may have better if you had....?' "

Speaking directly to her fellow operators, Louisa says, "If you use cockpit video footage in a proactive and no-blame way, you'll find it a valuable tool for meeting your SMS requirements as well as raising the safety bar at your operation.

"A picture may be worth a thousand words," she says, "but a video is priceless."

Privacy worries

It would be fair to say not everyone in commercial GA is taking the FENZ and DOC cockpit recorder mandate in their stride.

Some pilots, worried about a lack of cockpit privacy, question how much management will be keeping a Big Brother eye on them.

Louisa Patterson, prime mover behind the Eye in the Sky technology (see sidebar on page 11), says a dose of reality is warranted.

"If you have five aircraft flying five hours a day, it's humanly impossible to go through all the collected data every day, trying to catch someone out somewhere for something they may have said.

"With operators being as busy as they are, who could be bothered?"

CAA flight ops inspector Pete Gordon flew helicopters in Papua New Guinea in the oil and gas, and mining, industries.

"When the companies started putting in cockpit recorders, many of the pilots kicked up, worried it would invade their privacy.

"But interestingly, after the recorders went in, the fuss died right down.

"Then the pilots began to realise the recorders actually gathered really valuable information that would support their decision-making if there was a question over that.

"Then in 2014, there was an accident that killed both pilots and two passengers near Port Moresby. It would never have had the cause identified without the use of a cockpit recorder.

"So that was the end of the commotion about cockpit recorders."

Some operators have expressed disquiet over the use the CAA and other agencies might make of the recordings.

Director of Civil Aviation Keith Manch has told Louisa Patterson that the data captured by the device is "owned solely by the owner of the aircraft and the device". Sharing that data with the CAA, in most instances, would be voluntary and at the discretion of that owner.

Only where there's a legal basis under section 24 of the Civil Aviation Act 1990, Keith said, could the CAA compel a participant to share such information – for example, if investigating a serious incident or an accident.

The data could also be requested by the Transport Accident Investigation Commission if it's investigating an occurrence. However, the TAIC Act 1990 prevents

Photo courtesy of Eye in the Sky

the commission from releasing the transcript of the cockpit recording. The cockpit recording can also never be used in criminal proceedings against flight crew and only in very limited circumstances can it be used in civil proceedings.

Keith pointed out that anyone worried about such information being used by the CAA to take enforcement action should be aware that of the approximate 9,000 occurrences reported to the CAA each year, "enforcement action occurs in less than one percent."

The way the Authority asks for, uses, stores, and disposes of information from the civil aviation sector, Keith told Louisa, has to comply with statutory requirements.

Like every other organisation and individual in New Zealand, "The CAA has to comply with the requirements of the Privacy Act 2020", he said.

// MORE INFORMATION

The following websites are for readers' further information only. In no way does *Vector* recommend any particular product.

eyeinthesky.co.nz

appareo.com

flightcell.com/smarthub

ruggedvid.com

Comments or queries? Email **certification@caa.govt.nz**

TO HELL AND BACK

A pilot's journey to regain mental health

Three years of torment followed Pete Blake witnessing his workmates' deaths in a wire strike. Now he helps other men talk openly about their mental health issues.

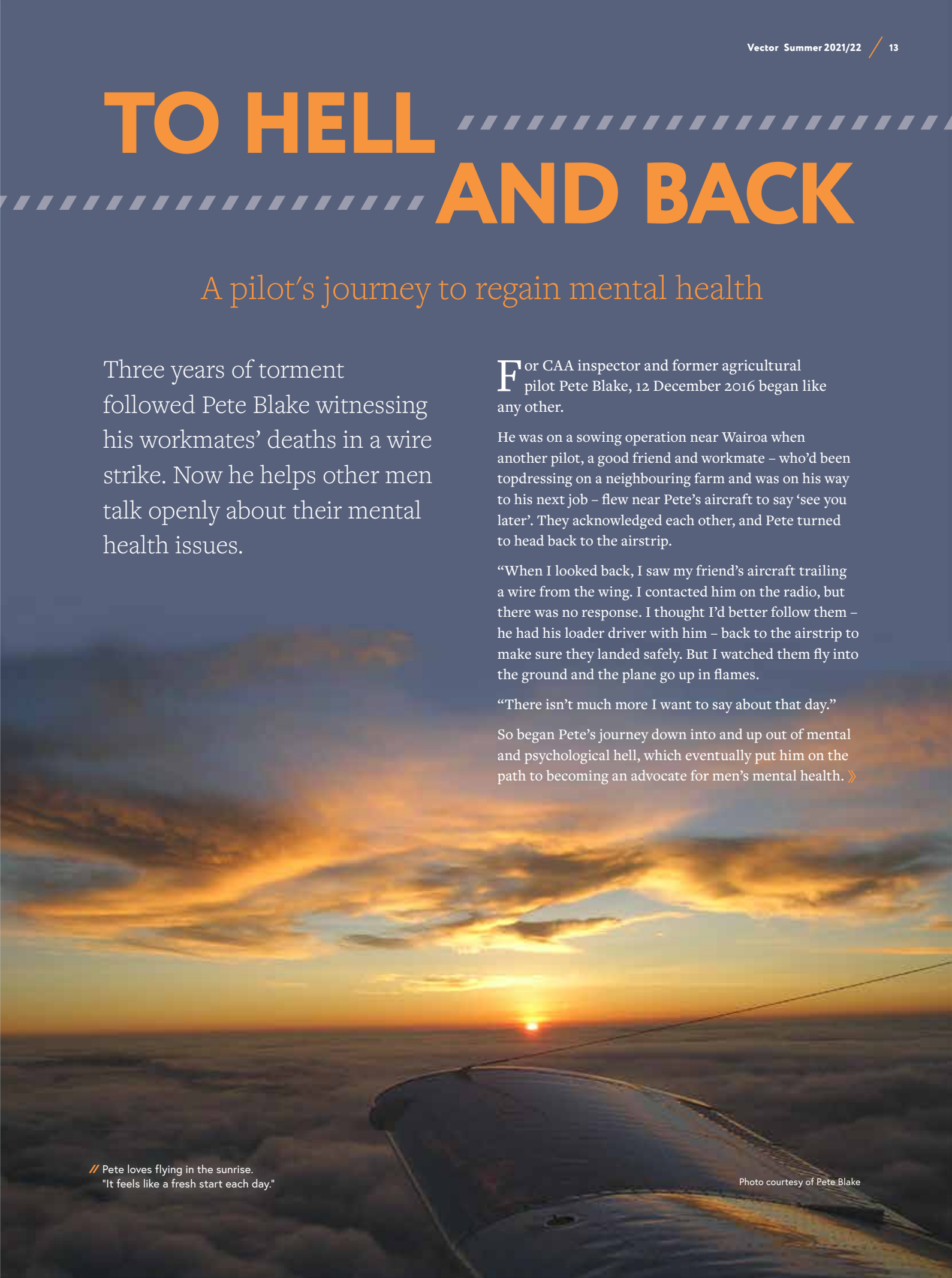
For CAA inspector and former agricultural pilot Pete Blake, 12 December 2016 began like any other.

He was on a sowing operation near Wairoa when another pilot, a good friend and workmate – who'd been topdressing on a neighbouring farm and was on his way to his next job – flew near Pete's aircraft to say 'see you later'. They acknowledged each other, and Pete turned to head back to the airstrip.

"When I looked back, I saw my friend's aircraft trailing a wire from the wing. I contacted him on the radio, but there was no response. I thought I'd better follow them – he had his loader driver with him – back to the airstrip to make sure they landed safely. But I watched them fly into the ground and the plane go up in flames.

"There isn't much more I want to say about that day."

So began Pete's journey down into and up out of mental and psychological hell, which eventually put him on the path to becoming an advocate for men's mental health. »



// Pete loves flying in the sunrise. "It feels like a fresh start each day."

Photo courtesy of Pete Blake

Just pushing on

Initially though, like most Kiwi guys, says Pete, he just pushed on. "The day after the funeral I finished the job I'd been doing when the accident happened, with the burned plane still poking out of the ground looking at me.

"But I didn't want to let anyone down – there was work to do, a family to support, and bills to pay."

Getting 'back on the horse' Pete worked right up until Christmas 2016, after which he went to four 'automatic' counselling sessions arranged through his employer.

"I was told I didn't have post-traumatic stress disorder (PTSD) and that I was doing okay – that anything I was feeling was to be expected. So after those four sessions, I stopped the counselling. I acted as if everything was normal, I told people I was 'doing great'."

Not doing great

But Pete started having trouble sleeping and when he did sleep, he often had nightmares.

Flying gradually became a 'day nightmare'.

"I would be anxious every day I was working that someone else would be killed in a crash. I actually started hallucinating sudden wires appearing just beyond the aircraft windscreen, and other ag aircraft in the distance crashing. It would be only a split-second hallucination but it was really terrifying.

"I'd spend most workdays crying in the plane from the sadness of losing a mate, and for the guilt I felt for both men's deaths. I'd been focussed on the operation and had forgotten to tell them about the set of high tension, hard-to-see, wires running across the farm – that meant I was responsible for what happened, I felt.

// Life got more and more stressful, but I kept it all to myself. Every day got harder, but I told everyone things were going great. //

"At home I was lifeless and not much fun to be around, but generally no-one knew I was going through this turmoil.

"I started to be scared of flying, which isn't great when your job is flying. Life got more and more stressful, but I kept it all to myself. Every day got harder, but I told everyone things were going great."

The 'break'

Then, over two months in 2018, Pete experienced an unusual number of serious occurrences – a massive bird strike and an associated elevator stall, a compressor stall on takeoff, and a flight control lock-up on takeoff. Spring contracts were increasing his workload.

Then finally, one otherwise perfectly ordinary Monday in August 2018 – 21 months after the tragedy – Pete says he "broke". It was his fifth consecutive day working around the 2016 crash site and his fear became overwhelming.

"I was sure something bad was about to happen, I just didn't know what. So instead of landing, I flew past the strip knowing I had to get out of the plane. I don't remember it, but I apparently told my loader driver that, 'I'm heading home – the guys have hit me hard'. I had a panic attack during the flight and was hyperventilating and crying uncontrollably.

"I wasn't sure I'd be able to fly the plane safely back home or if I'd end up in the ground. I texted my boss 'HELP'. After landing they found me under the plane crying. I spent most of that day telling everyone I was sorry for stuffing up their lives and for killing my workmates."

The first step

The next day, after an old friend and mentor intervened, Pete saw a doctor and "came clean – no more hiding and thinking it will all fix itself".

"The next two steps were hard. Phone the CAA, phone the boss. It had to be done, it was the right thing to do, but I felt like I was giving up everything I'd worked so hard for, I felt like I was losing my identity and I felt like I was letting everyone down.

"The CAA doctor was great and arranged for the PAN (peer assistance network – see sidebar) to get in touch the next day."

Pete thought that things would get better quickly, but in fact, depression, social anxiety, and stress all kicked in.

"After being a pilot for the previous 16 years – logging more than 12,000 flying hours, and even twice flying around the world – I was no longer a pilot.

"I would have to start again.

"It sounds weird, but although I didn't really want to fly again – I was scared of it – I also didn't want my breakdown to be the reason I left flying. It was important to me to retire from flying, if I had to, on my own terms."

So Pete set himself the goal of getting his medical back, despite plenty of people saying he would never fly again. Pete says there's a commonly held myth in the aviation community that if you lose your medical on mental health grounds, you never get it back.

Dark places

Despite his determination, things were far from easy. There were many dark, lonely moments. "I got sick of feeling a bit better, then have it all come crashing down because of some small thing. I hated the feeling of going backwards.

"I was now a stay-at-home dad, and slowly working on getting myself a new identity. Despite all my family's love and support, I would still feel alone, and lost. I would feel useless and unneeded. I would hide away from my friends and family and avoid talking to people as much as possible. I hated being asked, 'What are you doing now?' and, 'When are you going back to work?'

"I *was* working – being a stay-at-home parent is work, and it's hard work."

In the meantime, he was working with a PAN psychologist, who specialised in aviation, to get past his fear of flying. He also started biking and running to help with the recovery.

// Pete has made it a bit of a mission to talk to other men about mental health issues and what they can do about them.

// Pete learned it was okay to have bad days, and that they wouldn't last. //

Growing light

Over time, Pete learned it was okay to have bad days, and that they wouldn't last. He began to realise the guilt he felt over his workmates' deaths was unwarranted.

His sleeping improved, and the nightmares slowly stopped. Despite the initial diagnosis to the contrary, Pete was diagnosed with PTSD and he had to learn to overcome "all the stuff that comes with PTSD", like countering the beginnings of a panic attack triggered by, for instance, certain smells.

"One of the things I learned was to dig my heels into the ground and then count four objects around me, or listen consciously to every sound around me. The idea was to keep me focussed. It was a form of mindfulness or meditation.

"I began to live my new life, focussing on my kids and wife, supporting them as best as I could. The periods between the lows slowly began to get longer. I got more confident and was able to enjoy the small things. Then I started to be able to really have fun again."

Getting back in the air

Eventually, Pete's fear of flying diminished and he wanted to fly again. "I was super-cautious with my recovery and stress levels, so I didn't return to commercial flying straight away. I took lessons at the local flying school, got my RPL and did some flying for fun."

In September 2019, almost three years after the accident, he got his class 1 medical back. With his fear of flying a thing of the past, he stopped seeing the PAN psychologist and moved to another counsellor, who helped him deal with his remaining anxieties.

Soon after, he was confidently flying again, aerial surveying in Hawaii. The COVID-19 pandemic brought that to an end, and he moved to the CAA as an inspector. »

// I realise now anyone can be just one bad moment away from it happening. //

» "A new person"

"I've learned so much about myself through this," Pete says. "I now have the skills to pull myself out if I feel like I'm disappearing down an emotional hole. I really feel like a new person."

Pete has made it a bit of a mission to talk to other men about mental health issues and what they can do about them.

"I thought I was bulletproof and thought you had to have something wrong with you to go through depression and a breakdown. But I realise now anyone can be just one bad moment away from it happening."

Talking directly to his fellow pilots, Pete says, "You don't need to have witnessed the death of a friend to feel depressed or anxious to the point where you should ask for some help.

"You could have experienced stress over several years, through fatigue or long hours or odd hours or a big workload. Or maybe you lost your job in the lockdowns or are constantly in danger of it. Or you've been through a divorce or the death of a loved one.

"Maybe stress was slowly building for me over the years and that would have been enough to break me in the end anyway.

"If you think that might be you, I can only tell you I've learned the importance of talking openly, that it's okay to be not okay. Don't knock yourself around for feeling bad – and that when you're going through hell, you're not alone."

"A lot of this is never talked about"

He's surprised, amazed even, by the number of men he speaks to about his experience, who then open up about their own issues.

"I'd say almost every guy I've talked to is worried or anxious or stressed. But they also worry that admitting it is a sign of weakness. I know some pilots who've given up flying rather than admit they have a mental health issue. I also know a few guys who don't get the help they need because they worry about losing their medical.

"So a lot of this is never talked about. But if it was, and I'd known back then the stuff I know now, I would've handled things a lot better."

Pete also has a message for anyone whose mate is going through emotional turmoil.

"I had a friend who checked in with me every day. He didn't really know how much I was going through, but he'd call up and we'd just shoot the breeze. I can't really express how much good that did me. It would change my whole day."

Pete is part of a Gisborne men's group that began with just a handful talking about mental health. In the last Taupō marathon, the group – now numbering 130 – competed in the half-marathon.

"They're from right across the board," says Pete. "From airline pilots to forestry workers, they're from all worlds."

Asked by *Vector* if he believes anyone with a mental health issue – who doesn't seek help – could ever just 'spontaneously' recover, Pete thinks for a long time.

"I don't really know if that's possible. Maybe it is, but certainly not in my experience, I feel we all need some sort of help to get there."

Comments or queries? Email **vector@caa.govt.nz**

// PEER ASSISTANCE NETWORK

Feel like you need a helping hand to get through the day? Work pressures, relationship issues or just overwhelmed?

Visit **pan.org.nz** to request a confidential conversation with a trained peer, or call **0800 PAN 100 (0800 726 100).**

// WOMEN'S ASSISTANCE FORUM

Providing support and information to any woman who may be dealing with the challenges of working in aviation, from work/life balance to sexual harassment. Visit **pan.org.nz > about-us > woman's-assistance-forum** to connect with a female PAN co-ordinator. Or phone on the PAN number above.

// NATIONAL HELP NUMBER

Free call or text 1737 any time for support from a trained counsellor or go to 1737.org.nz.

Photo courtesy of CAA/Pen Mackay

"ENGAGE THE BRAIN. SLOW DOWN. **ZIG-ZAG**."

Taildraggers figure high in the stats for ground occurrences.[1]

Manoeuvring your tailwheel aircraft carefully and slowly on the ground is not only – and obviously – good for safety, it can save you money. Think insurance cover.

Two recent accidents involving taildraggers on the ground at Timaru Airport has Aaron Pearce worried.

The South Canterbury Aero Club CFI says a tailwheel pilot who's taxiing or manoeuvring without their brain engaged 100 percent of the time is inviting trouble.

"Real skill is needed to negotiate a tailwheel aircraft on the ground. Unfortunately, the number of recent taildragger incidents is highlighting a lack of skill – or care – and has insurance companies more reluctant to underwrite these machines." »

1 For the period 2016-2021, the average rate of reported aerodrome occurrences across New Zealand, per 10,000 flights, was 78 percent higher for taildraggers than for non-taildraggers. Source: CAA.

A long-time aviation insurer, Arden Jennings, says this depends on the individual pilot. He says that, in recent years, his industry has become much more wary about insuring taildraggers, particularly if the pilot has low hours.

"Today's general aviation insurance market pays a lot more attention to both the aircraft and the pilots who want to fly them.

"If the pilot wants to get a tailwheel rating, underwriters will sometimes require the pilot get more hours in a nose-wheel aircraft first."

He says before providing an insurance quote on an aircraft, the insurers will also sometimes want to know where the pilot will get their tailwheel training.

"They might even want to know where the aircraft will be operating from."

It starts with good instruction

Arden says it's not that insurers just want to come down hard on pilots wanting to get a tailwheel rating. They just like to "see a suitably thought-out programme to help the pilot make a positive start to flying the tailwheel".

Aaron Pearce says that reflects the significance of good quality instruction.

He's surprised, however, by the number of pilots signed off to fly a tailwheel, having been taught just one method of takeoff, or landing.

"I've jumped in with some pilots who've been flying a tailwheel for a while and asked them to demonstrate a three-point or a wheeler, and they've responded with, 'Oh I wasn't taught that'."

Arden Jennings says that, in his experience, the most common cause of accidents in taildraggers is a lack of pilot skills, training and currency.

Aaron says it's not uncommon, even for a relatively current and competent pilot, to take between five and ten hours, dual and solo, to get a tailwheel rating.

//They're not simple to operate but lots of pilots like that challenge.//

"By the time you do general handling, 3-pointers, wheelers, soft-field/3-point takeoffs, bounce recovery, crosswinds, sealed runways and emergencies, you can easily chew up five to seven hours.

"This is just in setting the building blocks, feel, and habits for your student, and for them to go away and be in a position to be safe while learning on their own and developing into a competent tailwheel pilot.

"In my opinion, the pilot is not ready to hold the rating unless they can competently operate the machine within the limits of the flight manual, including up to the maximum demonstrated crosswind, as well as performing all the landing techniques the machine is capable of."

Extra skills needed

CAA aviation safety advisor Mark Houston can testify to the extra skills needed to handle the tailwheel.

He learned to fly in a Piper Cub because he wanted, at that time, to fly Harvards in the RNZAF.

The rest of his ab initio group learned to fly in a Piper Cherokee.

"They went solo hours before me, because the tailwheel design meant I had to think about propeller torque, slipstream, aircraft mass, centre of gravity, and so on.

"But come cross-country time, I converted to the Cherokee after just one hour of type training and was completing the cross-country training in comfort and at *speed*.

"Later, when all my mates had their PPLs, they wanted to fly the Cub. It was fun to watch them bouncing and swerving over the grass runways trying to tame the whole 90 horsepower of the 'dreaded taildragger'."

Dave Phillips has flown Tiger Moths for almost 50 years. He says it's a curious and challenging aircraft to fly.

"They're extremely manoeuvrable, great for aerobatics, but there's also a Model T Ford aspect to them – they're not simple to operate but lots of pilots like that challenge."

Zig-zag

The Tiger Moth Club of New Zealand notes that, "Accidents prove how 'dangerous' (and expensive!) ground operations are in taildraggers, the majority of incidents consisting of hitting objects during taxi".

Aaron Peace says he's amazed by the number of times he's witnessed tailwheels, with limited – if any – forward visibility, being operated without weaving.

// To me, it's just imperative that if you've got a great big propeller out there in front of you, you weave to check where you're going. //


Photo: iStock.com/Ryan Fletcher

Dave Phillips is incredulous at the idea of taxiing in a straight-ahead manner.

"If you want to keep a good relationship with your insurance company, you'd best weave," he laughs.

"To me, it's just imperative that if you've got a great big propeller out there in front of you, you weave to check where you're going."

Speed

The FAA *Airplane Flying Handbook*[1] notes that, "Because of the relative placement of the main gear and the centre of gravity, tailwheel aircraft are inherently unstable on the ground.

"Because of this inbuilt instability, the most important lesson that can be taught in tailwheel airplanes is to taxi and make turns *at slow speeds*." (*Vector* emphasis)

"That means taxiing like your brakes are going to fail," says Aaron. "If you can't roll to a stop before you hit what's ahead of you, you're going too fast.

"Often, tailwheel pilots are taxiing far too fast for the environment, with little consideration for the traffic, ground obstacles, wind and sunstrike, or – in the worst case – the need for an emergency stop should a vehicle or another aircraft pull in front of them accidentally."

Dave says stopping distance will depend on the combination of the drag from the tailskid (in a Tiger Moth), the idle RPM setting on the engine, the ground surface texture, the slope, and the wind velocity.

"All these factors must be constantly reassessed to keep your 'safe manoeuvring bubble' free of obstacles.

"If taxiing on a sealed taxiway, putting one wheel in the grass will slow the aircraft and much improve directional control."

Good old-school airmanship

"We can all do our part to keep the insurance down when it comes to tailwheels," says Aaron.

"Pilots need to pay attention and exercise some common sense, good old-school airmanship and threat and error management.

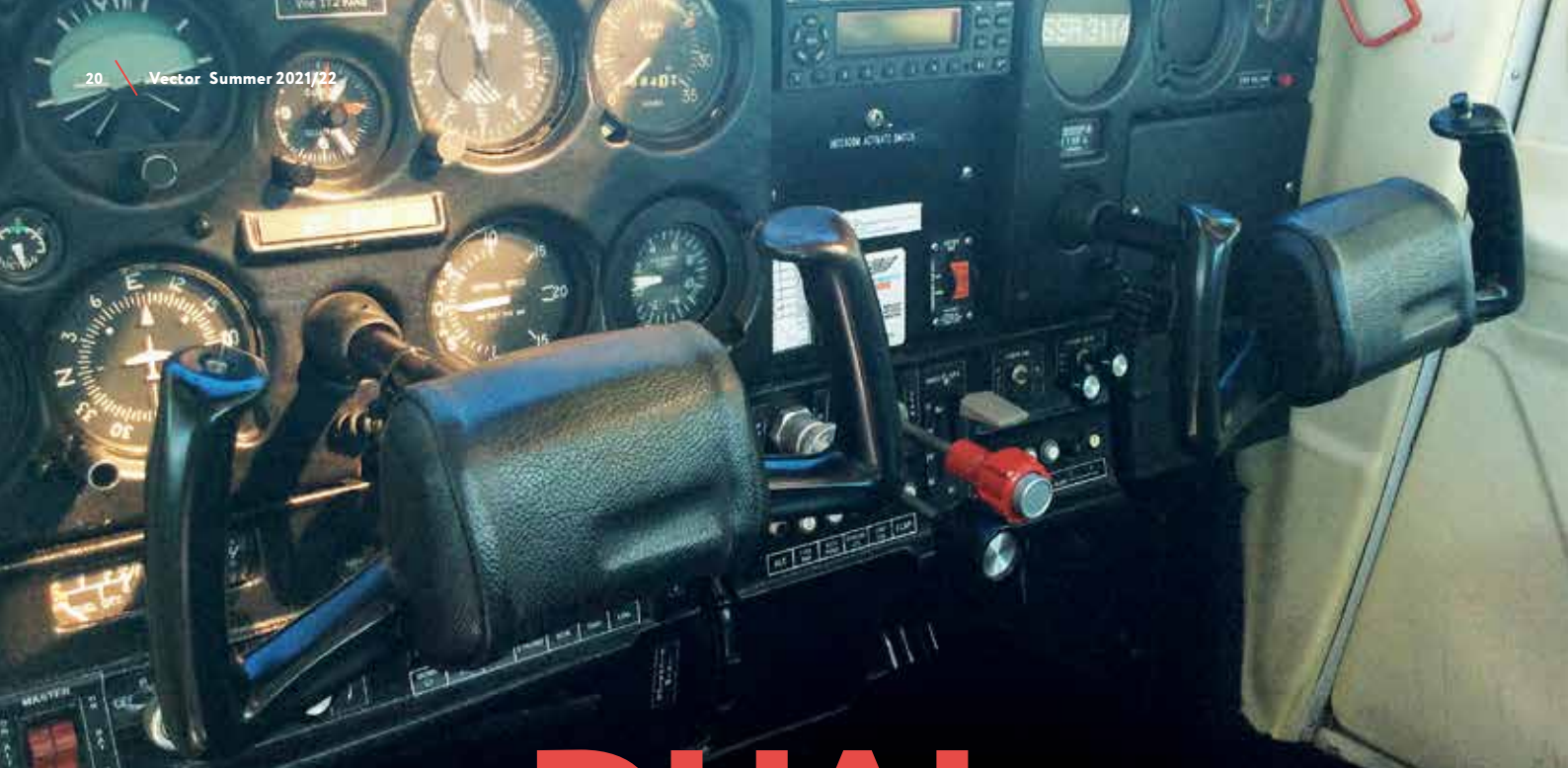
"That all starts with slowing down and engaging the brain.

"We instructors also need to step up, making sure we're sending off our newly minted tailwheel pilots with a full toolbox of skills and understanding to operate the machine confidently and safely in most conditions."

And, presumably, keeping the insurers happy as well.

Comments or queries? Email CAA's Personnel and Flight Training team at **pft@caa.govt.nz.**

1 www.faa.gov > Airplane Flying Handbook



DUAL CONTROLS

WHO CAN CHANGE THEM

Installation and removal of dual controls is not routine maintenance and cannot be carried out by a pilot under a Part 61 licence.

Well, why not? A dual control is often easy enough to remove. Indeed, they are often designed to be easily removed and installed, as role equipment.

But that, says CAA's airworthiness chief advisor Warren Hadfield, doesn't mean pilots can plunge ahead and do it without regard for safety.

"Changing a dual control is safety-critical maintenance. The potential consequences of getting it wrong include loss of control of the aircraft in flight."

CAA aviation safety advisor John Keyzer has plenty of examples of seemingly simple work on dual controls being done by a pilot – and disaster following.

"Regardless of the aircraft type," says Warren Hadfield, "the simplicity of the control system, or the experience of the person conducting the maintenance, the removal or installation of any dual control must be carried out in accordance with acceptable technical data and be subject to a duplicate safety inspection before being released to service."

That inspection is to confirm that, following maintenance, the control system functions correctly, and is correctly assembled and locked.

"It provides that vital extra layer of safety," says Warren.

Photo: courtesy of Kapiti Districts Aero Club

Even if the pilot is trained by a LAME and authorised to maintain their aircraft, they will be unable to remove and install dual controls, as the work requires that subsequent inspection.

The only exception is if the pilot is the holder of an appropriate certificate of maintenance approval issued by CAA.

In 2017, John Keyzer told *Vector*, 'This is really important. If the job is so safety-critical that it needs that subsequent inspection, a pilot cannot do it as 'authorised maintenance'.

"It's a higher bar to help prevent accidents."

In the Nov-Dec 2014 issue of *Vector*, the article "Dual control change" advised that, if the manufacturer permitted a pilot to do dual control changes, the rules allowed for this as routine maintenance under Part 43 Appendix A.1 (10).

That was incorrect. The work should actually be considered a change of role equipment, under Appendix A.1 (6).

The Nov-Dec 2017 *Vector* article, "Someone told me I could," made the correction, and said, "An incorrectly installed set of dual controls could possibly lead to a loss of control of the aircraft or an engine hot start. Instances like this happen less often than they used to, as people become more aware of the importance of doing things right. But there are still too many instances of this sort of occurrence for anyone to be complacent".

// MORE INFORMATION

Part 43, Appendix A.1 (6) includes limitations on the installation and removal of role equipment by a pilot.

If a pilot wants to carry out any maintenance outside the scope Part 43, Appendices A.1 and A.2, they must apply for a certificate of maintenance approval (issued under Part 66).

To apply for a certificate of maintenance approval, email **licensing@caa.govt.nz**.

Comments or queries?
Email **warren.hadfield@caa.govt.nz**

VNCs – YOU GET A SAY

Did you realise that you can apply for changes to the visual navigation charts to be considered?

// ASK FOR A CHANGE

To ask for a change to a VNC to be considered, send an email to **aim@aeropath.aero**.

All requested changes are reviewed and 'sanity-checked' by the CAA's aeronautical team and the updates are then made by Aeropath, which produces the charts.

If you're making a submission for a change to any information on the VNCs, please be as specific and detailed as possible.

For example, if you'd like to advise of new hazards in an area, then providing coordinates, photos or a description of the hazard is very helpful.

The more information you provide, the more likely your change will be accepted.

Visual reporting points versus 'local' places

Some of the feedback received over the past year has been in relation to the loss or renaming of place names on the charts where in many cases those locations were used by local pilots in position reports.

There are two main challenges with making position reports using 'local' names. Firstly, these locations may not be prominent on the charts, making them difficult to find for non-local pilots. Secondly, topographical and cultural features such as terrain, spot heights, rivers, roads, towns and cities are updated annually from the official data held by Land Information New Zealand. This means their names can and do change over time.

Visual reporting points were created to solve this problem. A VRP is a formal location put on the charts to provide a common reference point for position reporting. It's made prominent with its own symbol so it's easy to locate on the chart.

If you often refer to local place names that are not prominent landmarks or large towns, then you can request a visual reporting point be created and added to the VNC.

Any application for a new VRP should consider if:

- it relates to a prominent geographical feature
- it can be easily recognisable when voiced on the radio
- there's no possibility of confusion with any other reporting points in the same area.

If your proposed VRP meets these requirements, you can apply for a new VRP to be created.

To do this visit: **aviation.govt.nz** > **forms** > **24071-01** *Application for designated airspace or visual reporting point.*

Make sure your feedback arrives on time

The VNCs are updated annually and become effective on the 12th AIRAC[1] cycle of the year (November/December).

The process to update the charts, however, starts much earlier than this. In 2022, all submissions for chart information updates, therefore, need to be in with the CAA by mid-April. If your request is complex or large, it will need to be with the CAA long before that.

The dates do move slightly each year with AIRAC cycles, so make sure you check them at **aviation.govt.nz** > **airspace and aerodromes** > **aeronautical information publication.**

// CHANGES AND ADDITIONS

Check in each current AIP Supplement contents section for the *Visual Navigation and Planning Chart Amendments*. These give you the most up-to-date changes and additions to the current VNC.

Comments or queries?
Email **aeronauticalservices@caa.govt.nz**

1 Aeronautical information regulation and control – ICAO

ABOUT THE LOGBOOK, THE WORK RECORDS, AND THE AIRCRAFT OPERATOR

Are you confused about the use of the CAA maintenance logbooks? How about the details contained in logbooks and work packs? And about who's responsible for the whole darn lot?

The logbook

Part 1 *Definitions and abbreviations* says 'maintenance logbook' refers to the CAA 2101 aircraft logbook, the CAA 2110 propeller logbook, the CAA 2158 engine logbook, and the CAA 1464 'aircraft airworthiness directives, aircraft modifications, engine and propeller installations' logbook.

For details on what's entered in the various logbooks, check out rule 43.69 *Maintenance records*.

The inside cover of each logbook contains the instructions for its use, including that all sections are mandatory (to complete).

CAA aviation safety advisor John Keyzer says most operators use the logbook, as intended, filling out every section.

"This practice also causes fewer issues when aircraft move from one operator to another and one maintenance provider to another."

John says many organisations will also run an electronic spreadsheet in the background as a maintenance planning tool.

"It also acts as a backup to the data in the logbook, which I think is a good idea.

"And as long as the logbooks are being used as intended, and are kept up-to-date, using a spreadsheet doesn't need to be approved by the Director."

Alternative 'logbook'

Part 1, however, also defines a maintenance logbook as any *other* document or storage medium providing a record of the maintenance status of the aircraft, product or component.

The use of such logbook alternatives must be acceptable to the Director, meaning they must have been assessed and accepted.

Any certificated organisation with an exposition, wanting to go down this path, can include alternative means of recording and planning maintenance in their exposition and apply for approval.

"To have it approved, however," says John, "you may need to demonstrate that it meets the requirements for electronic record keeping, such as backup, security and so on."

For more information, check out Advisory Circular AC00-6 *Electronic signatures, electronic record keeping and electronic manuals.*

The work records

A LAME need only enter in a logbook a *summary* of any maintenance performed on an aircraft – rule 43.69(b).

An operator should never assume, therefore, that all the details necessary to manage the continuing airworthiness of the aircraft will be contained in its logbooks.

Those details may well be contained in documentation such as worksheets and work packs, used by the aircraft's maintenance provider.

Such records contain the explicit details of maintenance carried out – including parts installed and when – as well as of any modifications.

They also contain any changes of configuration which may result from the requirements of, for example, an airworthiness directive.

Often these changes involve revised instructions for continuing airworthiness which must be incorporated in the aircraft's maintenance schedule. It's therefore extremely important that operators review the work packs and worksheets from any maintenance carried out on their aircraft.

Because of the level of detail contained, and its importance to the operator, work records and work packs should be considered part of the complete body of aircraft records retained by the operator.

The aircraft operator

That complete body of aircraft records is the responsibility of the aircraft owner/operator. That's because they're the person – not the maintenance provider – responsible for the airworthiness of the aircraft.

It's the responsibility of the operator to identify and schedule the maintenance required to ensure the continuing airworthiness of their aircraft.

"On completion of maintenance, the operator should review the relevant work records to ensure all required maintenance has been completed and recorded," says CAA chief advisor (airworthiness), Warren Hadfield.

"If any required maintenance is not completed it should be made clear to the operator before the aircraft is flown.

"Operators might consider using a document – often called a technical directive – to authorise maintenance, and to provide clear instruction as to what maintenance actions are required."

The owner/operator is also responsible for transferring all records when possession of the aircraft is transferred.

The value of an aeroplane "is in its records", Flying NZ's quality assurance manager Rex Kenny told *Vector* in 2018.

"The aeroplane itself is almost a representation of those records," he said.

// MORE INFORMATION

For more, check out rules 91.603 *General maintenance requirements*; 91.617 *Maintenance records*, 91.621 *Transfer of maintenance records*; 43.105 *Certifying release-to-service after maintenance.*

Comments or queries?
Email **warren.hadfield@caa.govt.nz**

LETTERS TO VECTOR

Blue symbols not always 'delayed'; green not always 'real time'

"Not drowning in the tech" (Spring 2021) is an excellent article.

However, your paragraph *"There are also accounts of pilots not knowing the crucial difference between the blue symbols – traffic position data, which can be delayed by several minutes – and green symbols – traffic. Yes, but if in real time – on their EFB display"* states pretty categorically that [traffic position] blue symbols are delayed data and green symbols are real time.

For OzRunways this is not the case. Dark blue symbols are live and light blue symbols are delayed. In the latest Beta version, green would be applied to my own craft ADS-B symbol, when the ADS-B data from my aircraft is being used for altitude comparison with other ADS-B.

I would worry that the same private pilot who was 'chasing' themselves [because they didn't understand what the symbols meant] may start to look for your colours on an app that does not have them.

Andy Drain, Rangiora

Marc Brogan, CAA flight examiner, responds:

Thank you for pointing this out, Andy. It's a good example of how differing systems and inflight apps have multiple ways of representing the same thing. This can create a false picture unless the pilot/operator is fully familiar with the information source.

Collective bounce

I read with interest the GA defect report on the B3 Squirrel in the Spring 2021 edition.

Given there were no obvious mechanical issues found after this incident, and the helicopter was returned to service, I was wondering if during the operator's investigation, any consideration was given to 'collective bounce'.

Collective bounce is a helicopter pilot coupling phenomenon, caused by vertical vibrations in the aircraft cockpit, transmitted to the collective pitch lever through the torso, the left arm and the hand of the pilot, and fed back to the rotor through the collective pitch, in a closed loop scenario.

If left unchecked, the amplitude of vertical oscillations will rapidly increase divergently, where in some cases the pilot's head (hopefully with helmet attached) will strike the cockpit ceiling unless very tightly strapped in. Worse still, it may lead to major structural damage to the aircraft.

One of the key factors contributing to this phenomenon is flying with insufficient collective friction applied. It's basically a pilot-induced oscillation where the geometry of the pilot's arm, their seat position, and together with sharp inputs – which continually cause the collective to be moved to a point – that will affect the blade track.

In my experience, over a number of different types of helicopter flight control systems, it was always important (especially with long-line and under-slung work) to fly with sufficient collective friction applied.

Jim Wilson, Nelson

FISCOM versus 119.1

I thoroughly enjoyed reading the *Vector Online* article 'Too much noise in the CFZ, too little in the MBZ' as it highlighted many of my pet gripes with VFR ops in uncontrolled airspace these days.

After a 30-year hiatus from GA flying due to my time in the air force and now Air New Zealand, I decided to get back into some light aircraft flying.

I've been surprised by the lack of use of FISCOM frequencies and overuse of 119.1 by PPL pilots flying cross-country.

This was never the norm when I learned to fly in the early 80s. 119.1 was used only around unattended airfields and FISCOM frequencies were used for enroute communications.

I had a chat to a flight information officer down here in Christchurch, and she said they have very few GA flights contacting them. As your article points out, I think a lot of pilots think they're going to be charged for the service.

It might be timely for instructors to be reminded of this, so that they are teaching the correct procedures. It could also be discussed with pilots carrying out their BFRs.

Don Laming, Christchurch

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

LICENSING REMINDER FOR THE HOLIDAYS

If you want your licence issued or amended before the Christmas/New Year holidays, please get your applications in early.

The lead-up to Christmas is a very busy time for the CAA's licensing staff.

The last day for the issue of licences in 2021 will be 24 December. Licences will again be issued from 10 January 2022.

Licence applications are dealt with on a first-in, first-processed basis. Calling the unit does not give your application greater priority, and only takes staff away from processing applications.

If you're applying for a new licence, you'll need to satisfy the Director of Civil Aviation that you meet the 'fit and proper person' (FPP) requirements of the Civil Aviation Act 1990. Obtaining the necessary information can take several weeks. As a rough guide, allow up to six weeks before your flight test to complete the FPP process.

If you need to renew your medical certificate, take into account the time that may take, particularly if you require a specialist examination.

// NEW WĀNAKA SKYDIVE AREA P912

Parachuting now operates abeam Hawea Flat to the east, up to the foothills and extends to the south-eastern corner of low flying zone L966. The area contains skydivers in free fall and under canopy when active. Listen out on 120.1MHz.

Check the NZWF arrival and departure charts and the new VNC out December 2021.

OCCURRENCES DASHBOARD

These are the number and type of occurrences reported to the CAA, 1 July to 30 September 2021.

Occurrence type

7	**Aircraft accident**
29	**Aerodrome incident**
397	**Aviation-related concern** (for example, complaints about low flying)
262	**Airspace incident**
287	**Bird strike**
195	**Defect**
7	**Dangerous goods occurrence**
5	**Hang glider accident** (including 3 paragliders and 2 hang gliders)
266	**Operational incident** (anything not fitting into any other category, for example, a go-around)
6	**Navigation installation occurrence** (for example, a transmitter failure)
1	**Parachute accident**
2	**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

Mark Houston – North Island
027 221 3357 / mark.houston@caa.govt.nz

Neil Comyns – Maintenance, South Island
027 285 2022 / neil.comyns@caa.govt.nz

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

ACCIDENT BRIEFS

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, www.taic.org.nz.

Tecnam P2002-JF UL	
Date and time:	25-Jul-2021 at 12:20
Location:	Masterton
POB:	2
Nature of flight:	Training dual
Age:	36 yrs
Flying hours (total):	291

At approximately 1220 hours on Sunday 25 July 2021, the aircraft crashed on takeoff. The machine incurred damage to the left wing outboard of the flap, grazing being evident on the wingtip under and forward of the strobe light stretching to the trailing edge. There were no injuries.

The flight was intended to be dual circuit training. The student pilot had not undergone their first solo and the lesson plan was for a review of emergencies and to introduce short-field take-off technique. It was at this point after approximately 45 minutes flight time that the accident occurred.

Prior to the accident there was nothing of note, with the instructor verbally commenting that the student was proceeding well towards a first solo. At the time of the last takeoff the aircraft was positioned on runway 06 seal to introduce short-field technique.

During the take-off roll, the aircraft veered left on the runway, the instructor coached for more right rudder and the aircraft straightened on the left side of the seal. The aircraft rotated with nose attitude set for 60 knots. Shortly after becoming airborne, with full right rudder, the left wing dropped. The instructor put their hands on the controls as the student attempted to correct with aileron. There was a 1-2 second 'fight for control' before the instructor positively stated "I have control", and corrected with rudder and picked up the left wing just as the tip contacted the ground. The instructor put the aircraft down on a mown area adjacent to the seal and taxied the aircraft back to the hangar. A maintenance inspection and disassembly confirmed that damage was limited to the left wing tip.

CAA occurrence number 21/4185

SkyStar Kitfox IV	
Date and time:	06-Jun-2021 at 10:00
Location:	Poolburn Reservoir
POB:	1
Damage:	Substantial
Nature of flight:	Private other

On 6 June 2021 the aircraft ditched in the Poolburn Reservoir in Otago as a result of a partial power loss. The accident was notified to the CAA's Investigation and Response Unit (IRU) Duty Investigator. The IRU contacted the pilot-in-command (PIC) for further details.

The PIC advised that he was operating the aircraft at a weekend fly-in at the Poolburn Reservoir strip and that on the day prior to the accident the weather had been bad with no flying able to be conducted.

On the day of the accident, the weather was clearing at the strip, but due to terrain it was hard to tell if there was more widespread clearance. There was no cellphone reception at the site so no weather forecasts could be obtained. To determine the extent of the weather clearance the PIC went for a short local flight. He climbed to 3000 ft and operations were normal. He descended back towards the strip. While in the downwind position, the PIC decided he was too low on the approach so applied power, but there was no increase in power from the engine. With partial power, the PIC decided he would be unable to reach the strip. He aimed for the shore of the reservoir but did not quite make it and ditched in the reservoir. The PIC sustained very minor injuries, but the aircraft was badly damaged.

The PIC reported that the engine inspection had not found anything wrong, that there was sufficient fuel and that the fuel pump was on. He suspected carb icing was the cause. He reported that the aircraft has carb heat and it was on, but it is a rudimentary system at best and doesn't always work that well. The conditions on the day with a lot of moisture in the air led him to suspect that carb ice was the most likely cause.

CAA occurrence number 21/3393

ACCIDENT NOTIFICATION

24-hour 7-day toll-free telephone

0508 ACCIDENT (0508 222 433)

aviation.govt.nz/report

The Civil Aviation Act 1990 requires notification "as soon as practicable".

GA DEFECTS

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.

KEY TO ABBREVIATIONS:

AD = airworthiness directive
NDT = non-destructive testing
P/N = part number
SB = service bulletin
TIS = time in service
TSI = time since installation
TSO = time since overhaul
TTIS = total time in service

Robinson R44 II

Number 1 inlet valve

Part model:	IO-540-AE1A5
Part manufacturer:	Lycoming
ATA chapter:	8530
TSO hours:	1570.5
TTIS hours:	3770.5

A partial power loss occurred after takeoff, after filling with a load of spray chemical. The pilot was able to land safely with no damage. The engine did not stop but was running rough.

The maintenance investigation found that the #1 cylinder inlet valve had failed. The valve tip had separated at the keeper groove allowing the valve to contact the piston.

The engine was removed and #1 cylinder sent to a maintenance provider for inspection and repair. The engine was refitted after repair.

CAA occurrence number 21/3753

Cessna 172M

Cylinder

Part manufacturer:	Lycoming
ATA chapter:	8530
TSO hours:	260

While conducting a series of circuits, during the take-off roll the engine ran rough and lost power then stopped, with the throttle closed. The instructor aborted the takeoff and rolled/landed ahead on the runway with sufficient forward speed to taxi clear of the runway. The engine was unable to be restarted.

The maintenance investigation found that the #4 cylinder head was cracked, resulting in a complete loss of compression in that cylinder. The engine had accumulated approximately 260 hours since overhaul. The cylinders had been reconditioned during the overhaul. Following cylinder replacement, the maintenance provider advises that the aircraft has flown approximately 10 hours without any further issues.

CAA occurrence number 21/2575

Schweizer 269C

Lower Coupling Drive Shaft

Part model:	269C
Part manufacturer:	Schweizer
Part number:	269A5559-3

The pilot felt a vibration and landed immediately. The maintenance provider went to the site and established that the lower coupling drive shaft had moved forward and was contacting the engine fan/flywheel, which in turn caused a vibration. The part was repositioned and re-filled with grease. This appears to be a known issue if not enough grease is applied at the time, or if an air pocket limits the amount of grease applied. The machine was then lifted into a hover and the pilot confirmed the vibration had ceased.

CAA occurrence number 21/3323

Piper Aerostar 600

Inlet valve

Part manufacturer:	Lycoming

During an annual inspection, a leak down was carried out on all cylinders. The right-hand engine, which had been overhauled 15 hours earlier, showed a leak down of only 27 psi. The #1 cylinder was removed and a stretched inlet valve was found.

An engineering investigation found one of the spark plugs had erratic sparking, and due to anecdotal evidence of defective spark plugs on other aircraft, all of the spark plugs were replaced. Engine runs and a test flight were carried out satisfactorily. An engine monitoring system, including CHT probes and cockpit indicators, was installed on the aircraft to assist with managing cylinder temperatures and monitoring the engine's health.

CAA occurrence number 21/2782

SUMMER TRAFFIC BUSY SPOTS

Don't inadvertently fly into an aviation event – check AIP Supplements for planned events, and check NOTAMs on the day. If you don't subscribe, you can download AIP Supplements from www.aip.net.nz and NOTAMs from ifis.airways.co.nz.

This map shows the known flying events, at the time of printing, between January and April 2022.

Great Northern Air Race

29 to 31 January 2022
North Shore Aero Club: North Shore–Whangārei–Kerikeri–Kaitaia–Kerikeri–Dargaville–North Shore

Drury

1 to 8 January 2022
Gliding NZ Auckland soaring champs

Matamata

6 to 20 January 2022
2022 Walsh Memorial Scout Flying School cancelled due to uncertainty around COVID-19

22 to 31 January 2022
Gliding NZ multi-class national champs

Waipukurau

1 January 2022
First in the world fly-in

Hamilton

15 to 19 March 2022
Balloons over Waikato

Taupō

5 to 12 February 2022
Gliding NZ northern regional champs

Dannevirke

28 to 31 January 2022
Autogyro Assn fly-in and AGM

Motueka

15 January, 5 February, 5 March 2022
Aerodrome closed for drag racing (check NOTAMs for rain days)

Masterton

18 to 25 February 2022
Gliding NZ central districts champs

2 to 6 March 2022
NZ aerobatic champs

11 to 13 March 2022
Tiger Moth fly-in and AGM

18 to 20 March 2022
SportAvex fly-in

14 to 18 April 2022
Wairarapa balloon festival

Woodbourne

11 to 20 January 2022
NZ Cadet Forces national aviation course

Clareville

3 to 7 January 2022
Model flying champs

Mt Murchison

19 to 29 January 2022
Hang gliding national champs

Omarama

5 to 15 January 2022
Youth Glide NZ development camp

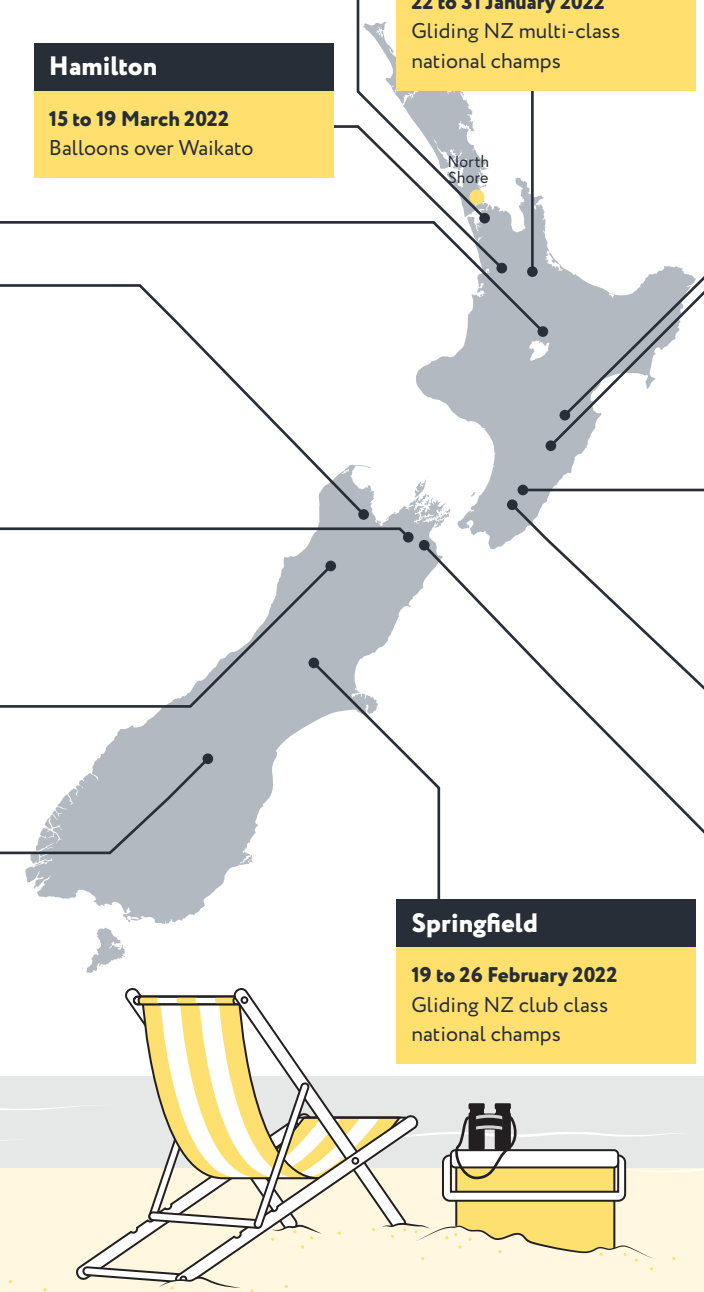
Springfield

19 to 26 February 2022
Gliding NZ club class national champs

Omaka

5 February 2022
Healthy Bastards bush pilot champs

21 to 27 March 2022
Flying NZ national champs



KEEP THESE EVENTS IN YOUR CALENDAR

CAA
CIVIL AVIATION AUTHORITY OF NEW ZEALAND
Te Mana Rererangi Tūmatanui o Aotearoa