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Autumn 2025

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North and South Island flying

Remedial training

Classic Fighters

THE LIFE-SAVING IMPORTANCE OF THE DUPLICATE INSPECTION

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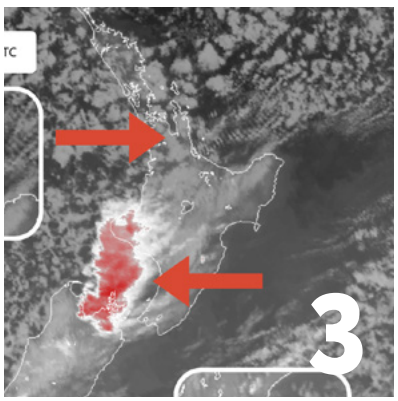
Te Mana Rererangi Tōmataraui o Aotearoa



// DIFFERENT FLYING EXPERIENCES IN THE NORTH AND SOUTH ISLANDS

// CLASSIC FIGHTERS PREFLIGHT PREP

// REMEDIAL TRAINING TO PREVENT REPEATED FLIGHT TEST FAILURES

Cover: Don't allow a once-over-lightly duplicate inspection in your workshop endanger your aircraft and pilots – and their passengers. Read "The life-saving importance of the duplicate inspection" on page 14.

Photo courtesy of Russell Keast.

In this issue...

// THE LIFE-SAVING IMPORTANCE OF THE DUPLICATE INSPECTION

vector

CIVIL AVIATION AUTHORITY OF NZ

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Different flying experiences in the NORTH AND SOUTH ISLANDS

// Mount Tasman in the South Island.

Photo: iStock.com/primeimages

They're siblings, not twins

It pays to be prepared for the differences between the two islands when you venture across Cook Strait – particularly if you're a pilot who flies mostly in one or the other island.

So what are the main things to look out for?

Weather

It might sound like stating the bleedin' obvious, but let's get right back to basics and talk about the weather. Not just wind, but also precipitation, including fog, snow, rain, and drizzle.

"With the weather, nothing is hard and fast. There are many dynamics and variables affecting how the weather behaves," says CAA Aviation Safety Advisor, and A-cat instructor, Carlton Campbell.

One of those variables is terrain, particularly mountain ranges.

While the North Island is dominated by its unique volcanic plateau and has its share of mountainous ranges, nothing compares to the dramatic Southern Alps. They're a massive obstacle for prevailing winds laden with moisture from the surrounding oceans.

Wind patterns and terrain

Wind of some sort is often present in a mountainous area.

Let's start with what happens in a westerly, New Zealand's prevailing wind.

"In the South Island, that means low cloud and rain in the west, and windy, turbulent conditions in the east," Carlton says.

Why? It's all about orographic lift – when a moist, moving air mass meets a geographical feature, such as a mountain range, the air mass needs to rise up and over it.

When the air reaches dew point, clouds form, and, possibly, rain. Therefore, the windward slopes of a mountain range tend to have higher rainfall than the leeward slopes. And the leeward side has more air turbulence.

Carlton compares the orographic effect to a river flowing.

"When a river meets protruding boulders and stones, the water flows over and around them, and we see disturbance in the water on the downstream side of the stones. That's like when wind meets hills – there's turbulence on the lee side because the air slows down as it passes over and around the obstacle.

"When a river meets a bigger obstacle, such as a weir, the water needs to flow up and over that barrier. The water on the downstream side of the weir gets churned up as the river crashes down to find the riverbed again.

"That's what happens when a westerly comes over the Southern Alps. It goes up, over, and down the other side, creating a great deal of turbulence in the lee of the mountains."

Penny Mackay, a Nelson-based pilot, A-cat instructor, and flight examiner, says Kaikōura and the Canterbury and Otago areas can be particularly nasty in a westerly.

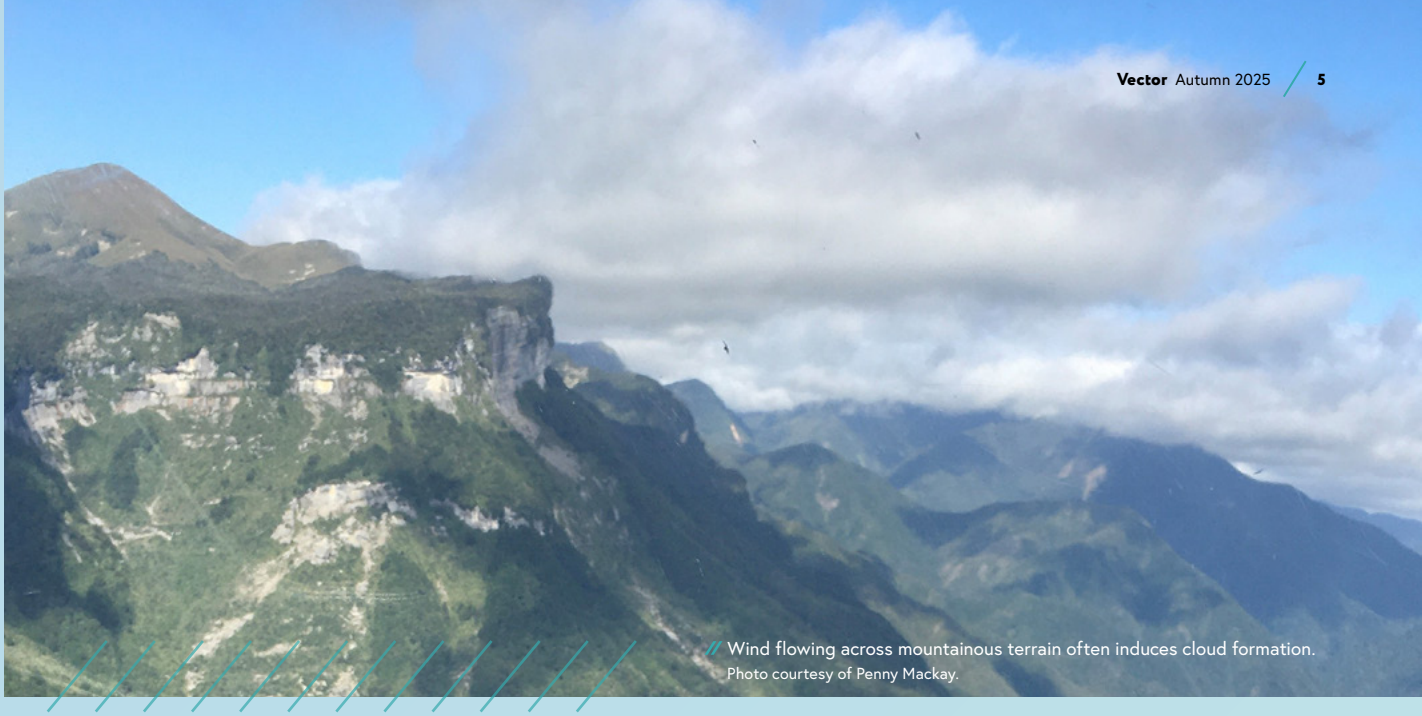
She explains that the opposite effect occurs with an easterly.

"For a lot of the east coast, an easterly will tend to bring low cloud, reduced visibility, and various forms of precipitation. There'll be turbulence in the west."

Rochelle Fleming, a pilot, B-cat instructor, and meteorologist based in Taranaki, says similar effects occur in North Island terrain, but to a lesser degree.

Key points

- Look for signs of orographic lift, such as cloud formations over mountains.
- Anticipate turbulence, even if it's not forecast.
- Plan routes avoiding the leeward side of mountains where turbulence and downdraughts are stronger, particularly when winds are more than 15 knots.



Wind flowing across mountainous terrain often induces cloud formation. Photo courtesy of Penny Mackay.

Mountain waves

Mountain waves are another consideration. You may encounter them when flying near or over mountainous terrain. They occur when strong, stable winds blow over the mountains and the air descends on the other side, creating a wave pattern in the atmosphere.

The South Island nor'wester is the classic situation, but pilots need to consider other wind directions, too, and even relatively small mountain ranges can still form significant mountain waves. For example, a southwesterly can form mountain waves off the ranges at the top of the South Island, and these waves can extend right across the lower North Island.

Mountain waves can extend vertically and horizontally for great distances and they can produce notable effects, such as:

- severe turbulence on the leeward side
- turbulent, rolling rotor clouds can form beneath the main wave, indicating strong, rotating air currents
- lenticular (lens-shaped) clouds can form at the crest of the waves, and stay stationary despite high winds. They're a visible indication of high upper winds, and therefore the potential for low-level rotor clouds.

Katabatic and anabatic winds

It's important for pilots to understand the effects of these winds when flying in and around mountain ranges.

Anabatic winds occur during the day as the sun heats the slopes of mountains or hills, causing the warm air to rise and create strong updraughts. Lake or sea breezes will strengthen anabatic winds.

As the air cools when it rises, the moisture content increases to create convective clouds looking like stacks of cotton-wool balls. If the air becomes more unstable, cumulonimbus clouds may form, resulting in rain and, sometimes, thunderstorms. Turbulence and poor visibility can occur, meaning you'll need to adjust your VFR flight path to maintain safe distances from the clouds.

As the sun sets and the slope cools, the air in contact with the slope slows down and stops rising. It starts to flow downslope, forming a katabatic wind (sometimes called 'mountain flow'). This transition can happen quickly in the evening or as the sun is blocked by terrain, particularly if the temperature around the tops is colder from snow cover.

Katabatic winds are usually stronger than anabatic in the valley floor, unless the anabatic is strengthened by sea or lake breeze.

Carlton says if winds are light and no prevailing upper winds are evident, the most prevailing conditions lower in a valley will be katabatic wind, due to colder air around the tops draining down the valley.

The transition from anabatic to katabatic wind can create localised turbulence and a rapid drop in temperature.

Penny Mackay agrees that the effects of the Southern Alps on the weather in the South Island are immense.

"They're a magnet for moisture and a funnel for wind.

"Because of the height of the mountains, VFR flight often occurs below the mountain peaks and in valleys, where these effects are generally greater." »

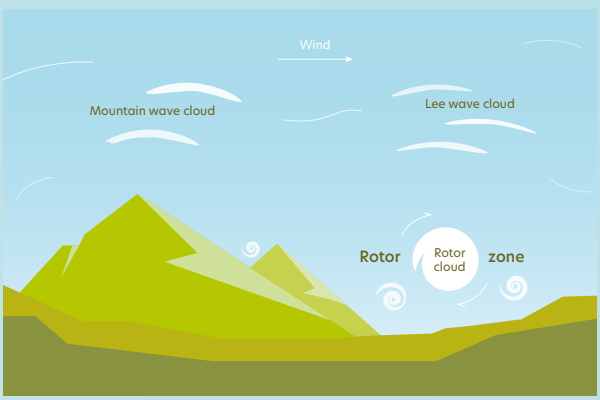
She adds that the venturi effect – when air is forced through mountain passes – it can cause strong gusts – another factor for pilots to keep in mind.

James Churchward, an A-cat instructor and flight examiner at Tauranga Aero Club, says the various weather effects in and around the Southern Alps can be a big learning curve for North Island pilots when they head south for fly-aways and competitions.

"While these weather effects do happen in the North Island, pilots travelling south need to consider the effects of the wind being forced over much larger mountains and terrain."

Key points

- Be aware of the time of day and local terrain to anticipate the effects of anabatic and katabatic winds.
- Be prepared for turbulence and changing wind patterns.



Typical mountain wave and associated turbulence. Source: CAA

Typical fronts

Flying in conditions where high- and low-pressure systems meet – especially when it produces a cold front – can present challenges for aviators unaccustomed to flying in the South Island.

Penny says pilots should expect southerly fronts to be much more intense in the South Island.

"It's easy to underestimate how fast a front travels and the cumulus grows, sometimes with associated heavy rain showers in these fronts. I've had students caught VFR in IMC inadvertently, trying to outclimb a growing cumulus."

Carlton explains that the passage of a southerly cold front through the South Island is relatively steady. It can get caught up in the mountains, but then the front typically escalates across the Canterbury Plains where there are few obstacles in its path.

By comparison, "Northerlies in the South Island often bring layered cloud formations which can be quite benign. But if there's enough moisture in the air, the cloud layers can close together and bring reduced visibility for extended periods of time," Carlton says.

This effect can have dramatic localised impacts. To illustrate a typical nor'easter in the top of the South Island, Penny recalls a group of students and instructors contacting her by phone from Karamea, in the upper South Island, as they tried to head north.

Despite having received advice that it wasn't a good idea to continue because of bad weather approaching, they'd decided – based on their North Island flying experience – to continue to fly low-level around the coast to Motueka.

"It was a nor'easter at the time. In the North Island, pilots can often fly around under a 1500ft stable layer of cloud, knowing it will often stay like that. But in the top of the South, a nor'easter can sit out in the bay and then suddenly move in. Visibility can go from 1000ft to fog at ground level very quickly.

"The group eventually made it to Motueka – the last section in very poor visibility and drizzle. As the last one landed, the cloud came down to the ground.

"They were all extremely thankful to have landed safely."

Key points

- A front marks a change in weather conditions, which may be rapid, especially if it's a fast-moving cold front.
- Warm frontal conditions of low cloud and precipitation can last for extended periods of time before clearing.

Flying in the North Island

"South Islanders shouldn't underestimate North Island weather – it can, and does, catch pilots out," says Rochelle Fleming.

While the North Island doesn't have the dramatic effects of the Southern Alps, it has its fair share of mountainous terrain and, importantly, its unique volcanic plains.

Rochelle says this means the North Island isn't exempt from the unexpected impacts of terrain, and pilots more accustomed to flying in the South Island need to be aware of that.

Penny says that while the South Island has a relatively thin coastal strip (because of the Southern Alps), the North Island has a lot of terrain between the coast and the main ranges, from the Tararua Range to the East Cape.

"This creates less predictable turbulence, particularly if you're flying west to east, or vice versa (the orographic effect). Turbulence forms off all the hills and ranges, so you can be exposed to it for a lot longer than you might expect.

"There's a lot of rugged terrain north of Palmerston North, so regardless of wind direction, pilots need to consider the best route to fly on any particular day.

"Even on a benign, okay-looking day, a deck of stratocumulus cloud between Whanganui and Te Kūiti can leave not much terrain clearance to climb above turbulence. For example, a Graphical Aviation Forecast (GRAFOR) might show BKN 2500ft, but that will be sitting on or close to the ridge tops, making an already difficult area to navigate a real challenge."

Flying around volcanoes

Rochelle says Mt Taranaki (a cone volcano) can catch out both South and North Island pilots in windy conditions.

The orographic effect can lead to strong, localised turbulence. The leeside can experience turbulent eddies and wind shear, which can be hazardous for pilots. These effects, Rochelle says, can be unpredictable and greater than you would normally expect in the lee of a mountain. The effects can continue for some distance downwind.

Similar effects occur in and around the North Island's other cone volcanoes, including Mts Ruapehu, Tongariro and Ngāuruhoe. And don't forget, the North Island's volcanoes are often active. Keep an eye on NOTAMs and consider downloading the GeoNet app.

Key points

// Each volcano is a massive obstacle to wind, with degrees of lee turbulence relative to wind strength.

Cloud in the North Island

While both islands will experience fair-weather cumulus clouds, Rochelle says South Islanders can be surprised by the extent such cloud can cover inland parts of the North Island, often with a flattish base and described on GRAFORs as Cu/Sc.

"This can be just above the hill tops and, while usually not particularly turbulent, the bumpiness can be enough to make it an unpleasant ride for your passengers when flying between Whanganui and Te Kūiti, for example."

Surprises in the Tararua Range

The Tararua Range has some surprises for itinerant pilots, especially in a westerly, Penny Mackay says.

"The turbulence can be especially vicious, with the meeting of the downdraughts off the mountain wave on the Wairarapa side and the venturi effect coming through Cook Strait in a westerly.

"This can produce much worse effects than you would normally expect in the leeside of the Tararua Range in the Wairarapa."

Penny recalls a friend whose twin-engine aircraft ended up with cracked engine mounts from the unexpectedly severe turbulence in the Wairarapa area because of exactly those weather conditions.

"Rotor from wave conditions in this area has also led to the break-up of a glider in the past," she says.

Cold fronts

Rochelle says that while cold fronts can stall across the North Island, and sometimes may be so weak they can be dropped from the weather charts, there'll still be leftover low-level moisture, which can cause unexpected drizzle and low cloud, especially on the west coast.

"Recently, an experienced pilot encountered just this situation travelling along the coast between New Plymouth and Raglan, where an old, weak front lingered.

"At the end of a long day, with the temperature dropping and short winter daylight hours, fog started to form on the coastal hills as a light westerly pushed moisture onshore.

"At about 800ft above ground level, just short of Kāwhia, and conditions looking to be deteriorating ahead, the pilot made the wise decision to head back to New Plymouth for an enjoyable evening."

// MORE INFORMATION

Scan the QR code to read the CAA's Good Aviation Practice booklets, *Mountain flying*, *VFR MET*, and *Flying around volcanoes*.

Or, go to **aviation.govt.nz/education** > safety education publications > good aviation practice (GAP) booklets.

CLASSIC FIGHTERS

PREFLIGHT PREP

Heading to the airshow at Omaka this Easter weekend? Be prepared for a very busy circuit and changeable winds.

Omaka's airspace is restricted before, during, and after the airshow activities, so check out the AIP supplements which will be available closer to the date of the event at **aip.net.nz**.

Gavin Conroy, the airshow's general manager, says Omaka has non-standard circuit directions because it's close to RNZAF Base Woodbourne and is surrounded by high terrain.

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

"Add 30 minutes extra fuel for holding time, additional to en-route fuel and reserves. If high traffic volumes occur, you *will* be holding," he says.

Transit lane

Parts of the transit lane are disestablished during airspace restrictions for the show, and the active portions of the transit lane finish at the end of daylight hours.

During daylight hours, pilots should be listening on the Woodbourne Tower frequency when occupying the transit lanes.

Weather

The prevailing wind direction is west or northwest. However, the surface wind can be different at Omaka and Woodbourne because of the impact of sea breeze. If you're flying in a westerly at Woodbourne, there may be an easterly at Omaka. And in the valley system, watch out for differences between upper-level winds and surface winds.

Radio frequencies

Check the AIP supplement for the radio frequencies valid during the restricted airspace activation times.

Joining from the south

It's recommended you track to Seddon and go through the Taylor Pass, staying below 3500ft and descending to 1500ft by the Taylor Dam, when you'll enter T654. Make position reports entering the Taylor Pass and again at the Taylor Dam.

If strong southerly or southeasterly winds are forecast however, avoid the Taylor Pass. Instead, track to White Bluffs and enter T654 at 1500ft and track a mile to the south of the Ponds, joining overhead from the Watertank at 1500ft.

Entering the transit lane at White Bluffs – and again abeam the Ponds – make a radio call with your joining intentions.

With both of these approaches from the south, it's recommended you join via an overhead join at 1500ft.

When tracking from the Ponds to the Watertank, remain over the Wither Hills and don't stray over the flat industrial areas at Riverlands. If you're uncomfortable remaining over the hills because of turbulence, call Woodbourne Tower on 122.80 MHz and request a clearance to track over Blenheim township to Omaka.

Joining from the north (Marlborough Sounds)

You'll require a clearance from air traffic control to enter the Woodbourne control zone to track to Omaka. Call Woodbourne Tower for clearance at Okaramio if you're coming down the Havelock Valley or, if you're coming down the Picton Valley, call for clearance when overhead Picton aerodrome. Acquire the Woodbourne ATIS on 126.05 MHz before requesting clearance. It's recommended you join via an overhead join at 1500ft.

Joining from the west

Descend to 2500ft or below and call Woodbourne Tower on 122.80 MHz at Wairau Valley Township, requesting a Rivers arrival. Acquire the Woodbourne ATIS on 126.05 MHz before requesting clearance.

Cook Strait

If you're crossing Cook Strait and entering the transit lane from Rarangi/The Diversion, ensure you descend to 1500ft or below by The Diversion to track Omaka, remaining seaward of the coast to Wairau Bar and The Ponds, to track via the Watertank to join overhead Omaka. Make position reports at The Diversion, abeam the Ponds, and overhead the Watertank.

When tracking from The Ponds to the Watertank, remain over the hills and don't stray over the flat industrial areas at Riverlands. Again, if you're uncomfortable remaining over the hills, call Woodbourne Tower on 122.80 MHz and request a clearance to track over Blenheim township to Omaka.

Joining

A standard overhead join is preferred, because of the mix of high- and low-performance aircraft and NORDO. This will allow you to verify which runway is in use and give you time to locate all traffic in the circuit. It also gives others in the circuit ample time to identify you and if necessary, adjust their circuits to allow spacing. There can be aircraft downwind travelling at anywhere from 70 knots to more than 150 knots, so careful coordination between pilots is crucial.

Circuit direction

Have the circuit direction worked out before you get to Omaka. All the circuits are south of the airfield, to keep aircraft away from the town.

"Congested airfields need alert pilots, so as you approach the airfield, listen to the radio broadcasts and work out which way the wind is blowing and the vector you'll be landing on," Gavin says.

He has a reminder for pilots about vector 30. "If you are high on your approach profile, and fast due to terrain, go around and circuit the correct direction (left).

// THREE TOP TIPS

1. Make sure you have the latest *AIP New Zealand* Volume 4 and the visual navigation charts covering your proposed and alternative routes to and from the event.
2. On the day of your flight, get current weather information and NOTAMs from Airways IFIS, **ifis.airways.co.nz**.
3. Arrive in good time to beat the congestion.

Photo courtesy of Gavin Conroy.

FIT YOUR SEATBELT

LOW AND TIGHT

It really is that simple. But another fatal crash shows complacency is winning.

Four people, including a pilot, died when two Eurocopter EC130-B4 helicopters collided mid-air while conducting scenic flights around Sea World marine park, Gold Coast, at new year in 2023.

An interim report by the Australian Transport Safety Bureau (ATSB) says that, while some of the deaths were caused by other factors, "not wearing a seatbelt, or wearing it improperly, can significantly increase the risk of serious or fatal injury in the event of an accident".

Now the ATSB is calling on all pilots and operators to go back to basics, correctly fitting seatbelts for themselves and their passengers.

Echoes of Southern Alps crash

The comments strongly echo the investigation into a controlled flight into terrain in 2014 at Mount Alta in the South Island, when a heliskiing trip went tragically wrong.

One man died and another four passengers were injured when they were thrown from the cabin of a Eurocopter AS350-B2. The cabin broke apart and rolled 300 metres down the mountain after the impact.

Unadjusted seatbelts, flying while overloaded, and an unintended angle of approach, were among the factors that contributed to the injuries and fatality.

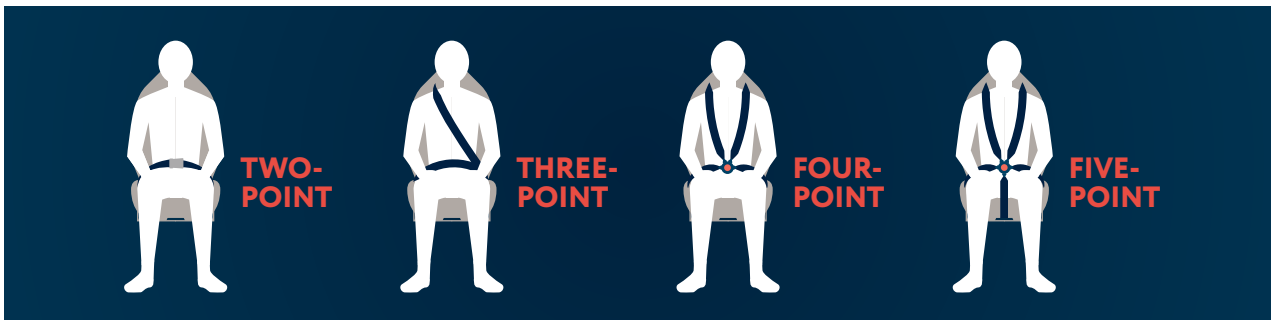


Illustration based on seatbelt diagram from ATSB.

The Transport Accident Investigation Commission (TAIC) found it was "very likely that several of the passengers' seatbelts were not securely adjusted, which made it more likely they would be ejected".

The report added that if the passengers had been advised to tighten their seatbelts, some may not have been thrown from the helicopter.

It's a global issue

As part of the investigation into the Sea World accident, the ATSB said it found many instances globally where seatbelts – especially multi-point restraints – were not worn correctly, even by pilots and air crew.

Angela Andrews, manager of transport safety at the ATSB, says, "There seems to have been a shift, especially with multi-point restraints, towards them not being done up correctly".

Multi-point seatbelts are unfamiliar

Mark Bathie, senior transport safety investigator at the ATSB, explains that most people are familiar with lap seatbelts from flying commercially, and with three-point seatbelts because they use them in vehicles.

Four- and five-point seatbelts – often used in general aviation – are less familiar.

"For many passengers, it's the first time they've experienced that style of seat belt, so it needs to be explained to them."

Fit low and tight

"You should fit and adjust the lap portion first. You need to make sure that the lap portion is low and tight on your hips. The restraints for the upper torso are fitted last," Mark says.

"The correct fitting of your seatbelt is hugely important. An aircraft may have many crashworthiness features, but they're less effective if people are not positioned correctly in the seat. It's about sitting up straight and having the seatbelt fastened correctly and tightly."

FAA advice

The Federal Aviation Administration explains in its booklet, *Aviation Seat Belts and Shoulder Harnesses*, that studies of serious accidents have shown that the proper use of shoulder harnesses, along with the safety belt, would reduce major injuries by 88 percent, and reduce fatalities by 20 percent.

"Tests have shown that any slack in the restraint system should be minimal. In an impact, your body keeps moving until the slack is taken out of the restraint, but then it must be abruptly stopped to 'catch up' with the aircraft.

"The restraint should be adjusted as tightly as your comfort will permit to minimise potential injuries. Placing the safety belt low on your hipbones means belt loads (the force exerted on the seat belt) will be taken by the strong skeleton of your body. If the safety belt is improperly positioned on your abdomen, it can cause internal injuries.

"If the safety belt is positioned on your thighs, rather than hipbones, it cannot effectively limit your body's forward motion."

Blue Hawaiian emergency landing

This advice was noted in the National Transportation Safety Board's (NTSB) report into the emergency landing of a Blue Hawaiian Airbus EC130T2 helicopter in 2016, which seriously injured six people.

The NTSB says the aircraft's energy-absorbing seats didn't work as intended in the crash, because people were poorly positioned in their seats due to incorrectly adjusted seat belts. Those people were more severely injured than would have been expected for such an impact.

// MORE INFORMATION

To read the ATSB's interim report into the Sea World accident, go to **atsb.gov.au** and use the search box to find report number AO-2023-001.

The ATSB intends to publish its final report on the Sea World accident in March 2025.

Work together
Stay apart

"It's about being a reasonable human"

You wouldn't shoulder barge someone in the street, even if you had right-of-way, would you? Maybe apply that same courtesy in the circuit.

That's one of the main messages of the CAA's *Circuit Certainty* seminars that toured the country in late 2024.

The 35 seminars were the final stage of the *Work Together, Stay Apart* safety campaign for flying in and around unattended aerodromes.

There have been 553 reported airborne conflicts in the circuit in New Zealand in the last eight years.

Of that total, 154 occurrences required one or both pilots to take drastic avoiding action – and in nearly half of those cases, the aircraft were so close that if avoiding action hadn't been taken, a mid-air collision would have occurred.

Yield, don't push

CAA Aviation Safety Advisor – and flight examiner – Carlton Campbell told the 1500 pilots who attended the various seminars, that while aviation rules are certainly clear about rights-of-way in the circuit, there are also rules about avoiding conflict.

"It's a subtle shift in how some people manage their sequencing in the circuit. They have to make sure they avoid the risk of conflict, as opposed to simply doing something because they have the right-of-way.

"It's part of good airmanship – creating consistency and predictability, and everybody conforming to the same procedures. It enhances our ability to find each other in the sky, and sequence with each other accordingly."

CAA Principal Advisor of Regulatory Practice – and former CPL(H) – David Oliver puts it another way.

"It's about being a reasonable human and flying friendly. It's not about being right, it's about being courteous, professional, and clear. It's also okay to make a mistake – but be clear and courteous when correcting that mistake – for instance, when rejoining or going around."

Know other aircraft in the circuit

David told the attendees that pilots who understand the limitations of other aircraft in the circuit are better equipped to know when to give way.

"You should have an awareness of what's likely in the circuit you're going to be flying in, and what the likely limitations of the other aircraft are. Good sources of information are the AIP, local operators, and local aero clubs."

A good example, he says, is flying around somewhere like Ōmarama.

"You might have the right-of-way, but if you've got a glider coming and the pilot has made a misjudgement, or the wind has changed, they've got no options. They can't go around. It's a far better option for you to go around or reposition behind the glider – or give them extra space to sequence in front of you."

> // It's hard to overstate the importance of sticking to the published and established circuit for any given aerodrome. //

Rules exist for a reason

CAA Flight Examiner – and former CFI of South Canterbury Aero Club – Aaron Pearce told the seminars that all New Zealand pilots need to do a re-set around standard manoeuvres in the circuit.

"It's hard to overstate the importance of sticking to the published and established circuit for any given aerodrome," he says.

"Behaviours, including the use of non-standard turns by pilots either vacating or joining the circuit, have become the norm at many unattended aerodromes. It was never intended to be that way.

"The rules are like a 'road code' for these situations. They're there to give predictability to how the traffic will flow, how pilots will behave, and what actions they'll take.

"Those pilots who choose to use non-standard manoeuvres are going against rules that were written to protect themselves and others."

Slow down in the circuit

For CAA Aviation Safety Advisor Pete Gordon – CPL(H) – the key message is clear.

"Slow down when entering the circuit. It seems to me that some pilots tend to want to rush to the final part of the circuit and be the first to land.

"My suggestion is to slow down and enjoy it. That'll help to keep everybody safe."

Aaron Pearce adds that any pilot who's not sure what's ahead in the circuit should, "Get the wings level and either vacate or reduce speed. Give yourself time to think, and assess where the traffic is."

Be aware of the wider environment

Recognising the environmental threats around an aerodrome can go a long way to protecting yourself and others in the circuit, as Aaron explains.

"Many aerodromes now have development creeping onto their edges, including housing and industrial buildings. Many of those buildings are white or beige, like many aircraft. So, it's easy to miss seeing a Tomahawk or a 152. Take your time and keep your eyes outside."

Radio calls

David Oliver says clear and courteous radio calls contribute massively to predictability and collaboration in the circuit, including communicating your limitations.

"If you're flying, say, a microlight, and all other traffic in the circuit is flying at 110 knots, it's worth mentioning you're topping out at 60 knots."

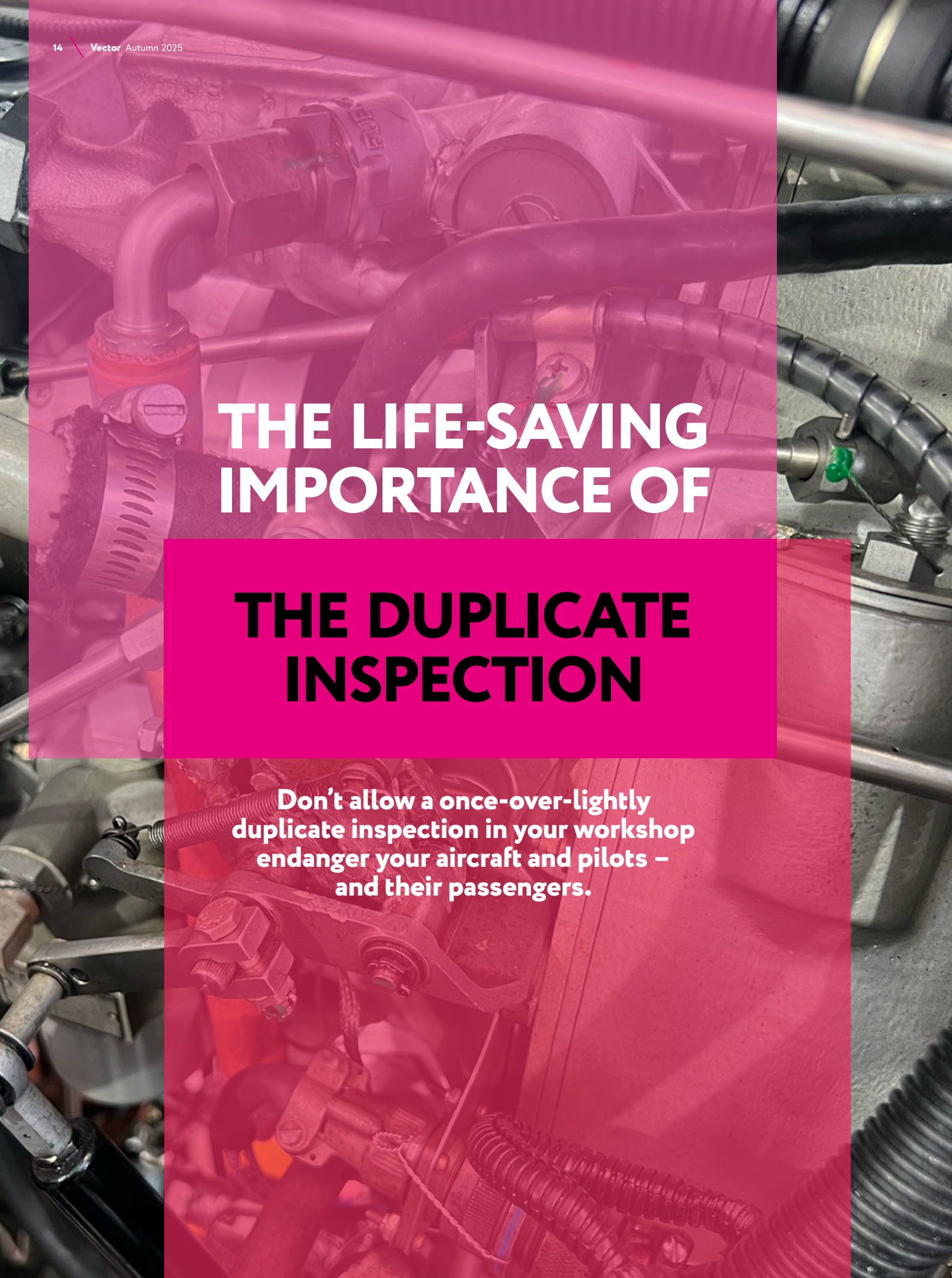
Aaron Pearce adds a note of caution that radios can fail.

"At any time, any one of us can go NORDO without knowing it, through a comms failure. That's when sticking to standard procedures in the circuit gives everyone a level of protection. It gives us all a level of predictability, so we know where to look for other aircraft."

Now check out...

The *Circuit Certainty* educational videos at **aviation.govt.nz/wtsa** > resources.

Vector magazine (Summer, 2023) – the entire edition was dedicated to flying safely around unattended aerodromes. Go to **aviation.govt.nz/vector**.



THE LIFE-SAVING IMPORTANCE OF THE DUPLICATE INSPECTION

Don't allow a once-over-lightly duplicate inspection in your workshop endanger your aircraft and pilots – and their passengers.

The August 2024 occurrence report filed with the CAA is stark in its description.

> **Prior to lifting to the hover, a lack of controllability around the 'yaw' axis was noticed as [the] aircraft skidded about 10 degrees nose left prior to the aircraft lifting off the ground.**
>
> **The aircraft was shut down and referred to engineering for investigation. Initial investigation revealed that [the] tail rotor control rod joint was not fully engaged.**

The subsequent CAA investigation found that the organisation had not ensured that the engineer was experienced in how to complete the task. It also found that a breakdown in duplicate inspection procedures contributed to the incident.

There are duplicate inspections – and there are duplicate inspections

When an ineffective duplicate inspection is carried out, the effects are insidious, because the pilot may not be able to detect any possible issue in their preflight check.

Because of this, and that a potential system failure is so obviously dangerous, Part 43 *General Maintenance Rules* requires the maintenance of control systems be double-checked before the aircraft is released to service.

CAA Aviation Safety Advisor Richard Lane – 35+ years in engineering, and a PPL-holder – says the incident described at the start of this article is one of four in New Zealand that he knows of over the last six months of 2024.

"In all cases it was not an instance of the duplicate inspections not being done – they all were. It's that the inspection failed to identify issues in one or more of the critical elements required to be checked during the duplicate inspection."

The pre-formatted return-to-service statement outlines what must happen for a duplicate inspection to be properly robust.

> **We certify that a duplicate safety inspection has been carried out and the identified control system of the aircraft/component functions correctly, and in respect of the maintenance performed, the control system is assembled and locked correctly.**
>
> **Refer rule 43.113(c)(3).**

"Each system requires individual attention to check the correct assembly, locking, and function of that system, in accordance with the appropriate maintenance manual(s)," says Richard.

"It takes only one of these three elements to have been done incorrectly for a system failure to occur."

CAA Aviation Safety Advisor John Keyzer – 25 years' experience as a LAME – says that of the four recent incidents, the most potentially catastrophic happened in the South Island mid-way through 2024.

"After maintenance, and on a repositioning flight, the pilot began to notice a vibration in the helicopter. He immediately began a descent to lose as much altitude as possible.

"On getting close to the ground and, at the same time as a flight control input, there was a disconnect in the control system, resulting in a loss of aircraft control and a serious accident. The pilot was okay, but the helicopter was destroyed."

John's advice, in the Winter 2022 *Vector* article, "Duplicate inspections", is that if staffing levels allow, there should be two independent inspections following assembly or adjustment of a control system.

"That is, that the first or second part of the duplicate is not carried out by the same person performing the task." »

Photo above: Courtesy of Russell Keast.

Photo left: PT6 engine fuel control unit assembly. Courtesy of Luca Hare.

Confirmation bias and complacency – enemies #1 and #2

CAA Chief Advisor of Human Factors, Alaska White, says that duplicates aren't any old task to tick off the to-do list as quickly as possible to get the aircraft out the door.

"No two situations are the same, so don't use past successes to assume everything will work out okay in the future.

"Every duplicate inspection should be carried out with healthy scepticism about whether it's been done correctly.

"If we go in anticipating the maintenance has been done correctly, our eyes and brain will confirm that. This is called confirmation bias[1], and it can be very powerful in persuading us that all is fine."

John Keyzer says the second part of a duplicate inspection should be seen as the last opportunity to ensure that everything is correct, rather than a quick check that the first inspection has got it right.

"It's for this reason that it can be a good idea to see the duplicate inspection as a separate activity, rather than a cursory glance associated with the carrying out of maintenance."

Distraction – enemy #3

"Distractions are everywhere," says Alaska White. "And countering them is not just about turning cellphones off inside the hangar.

"Make sure there are clear comms to staff and clients ahead of time, and signs to ward off unwanted or unplanned visitors who could disrupt the engineers."

Alaska says the environment in which a duplicate inspection takes place can greatly contribute to its success – or greatly damage it.

"Duplicates require high mental workload and are demanding of attention, so engineers undertaking the duplicate need to be well-rested, in a headspace and working in an environment that enables them to perform the duplicate inspection thoroughly.

"This includes using checklists, having realistic time frames to alleviate pressure and stress, and ensuring the working environment is a comfortable climate, and has sufficient lighting and adequate tools and equipment to carry out the task."

Practical advice

Russell Keast, Base Manager at Skywork Helicopters, has a simple but effective method to ensure distraction does not later result in an incident – or worse.

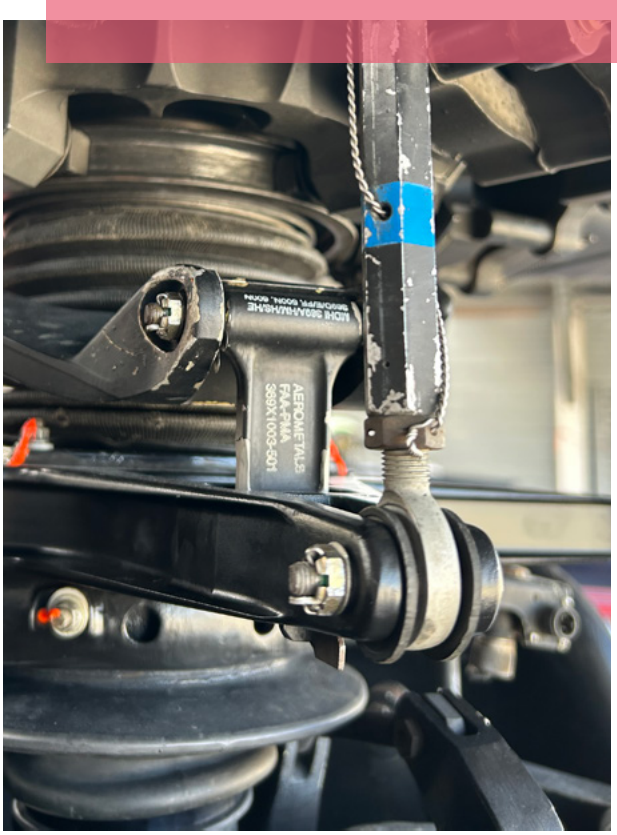
> **"We use fluorescent pink ribbon as an integral tool in maintaining an aircraft. The roll of tape sits in my toolbox, along with the torque wrench and my spanners.**
>
> **"It's sitting there, nice and bright, and when I look down at the tray, it's glaringly obvious it's there to be used.**

"I tear off a long strip and tie it around the item that needs checking. My part of the job is not finished until that pink ribbon is secured. Then I'll move on to the next task, and 'pink ribbon' that, and so on.

"Then the second engineer does the duplicate check, and only afterwards, removes the ribbon."

// MDHI 369 main rotor swashplate assembly, including drive link.

Photo: CAA



1 We pay attention mainly to information confirming our expectations, and we ignore, or don't see, or minimise, information which doesn't.

Photo courtesy of Kāpiti Districts Aero Club.

DID YOU KNOW...

... that rule 43.113 also applies to the removal and refitting of dual flight controls?

Many small aircraft may be operated with either single or dual controls for the purpose of providing flight instruction. For convenience, manufacturers often provide a 'quick release' mechanism to permit removal and installation of the secondary controls, when a passenger seat is to be occupied, for example.

To avoid the requirement for special tools, there can be a variety of mechanisms designed for this purpose, as well as instructions provided in the aircraft flight manual on how to carry out the task.

Regardless, the rule still applies. It's still the removal or installation of a flight control, which could result in a flight hazard. The hazard of incorrect assembly is the most obvious. If not locked in place the control could come loose at a critical moment such as the instructor correcting their student's stall recovery. (Imagine their surprise!).

For this reason, the duplicate inspection requirements of 43.113 apply whenever you disturb the aircraft's controls, (including dual flight controls secured in place with quick release fasteners).

So how do you comply and stay safe?

43.113(a) requires:

- a person releasing an aircraft to service after maintenance that has involved the disturbance of any control system must ensure that a duplicate safety inspection has been carried out. (Also see Part 1 for definition of 'maintenance').

Who can do this?

43.113(b) states that:

- the first part of a duplicate safety inspection can be carried out only by a person who meets the requirement in rule 43.101 to certify the aircraft or component for release-to-service.

The second part of the duplicate inspection must be carried out by another person who has adequate training, knowledge and experience to carry out the safety inspection, and who is a LAME, or holds one of the following:

- a maintenance approval issued in accordance with Part 66
- a current pilot licence with a rating on the aircraft type
- an authorisation issued by the holder of a maintenance organisation certificated under Part 145
- a person issued with an engineer's licence or approval under the authority of an ICAO contracting state
- for gliders, a current glider pilot certificate or an engineer's approval issued by a gliding organisation.

The CAA says...

The CAA's Chief Advisor of Airworthiness, Warren Hadfield, says that maintenance worksheets play a critical role in making sure that control system maintenance is completed correctly.

"When a control system is disturbed, an open entry should be raised in the relevant maintenance worksheet detailing the scope of control system disturbed, and referencing the requirement for a duplicate inspection.

"Whereas correct functioning requires oversight of the full control system, the inspection for correct assembly and locking should focus specifically on the sections of the control system which have been disturbed."

Photo: CAA

Russell tells other staff when he's about to do a duplicate inspection, and they know not to interrupt him. The office staff know not to forward calls to him. His cellphone stays outside.

"If you're the chief engineer or senior engineer, and you have someone waiting to be paid, and the boss turns up, and there's a phone call for you, and the pilot turns up asking why things are taking so long, it's hard not to be distracted. It takes real discipline.

"But if you really do have to stop to attend to something else, the pink ribbon will remind you that you haven't completed the task – because the duplicate hasn't been done."

Russell offers this further tip. "We use a duplicate inspection checklist for each 'zone' of the aircraft. We have one sheet each for the airframe, engine, main rotor area, and for the tail. I know some engineers note all their duplicate inspections on the one checklist sheet, but I think that's too many."

Skywork also uses 'maintenance in progress' flags attached to the helicopter tail.

"They're a visual indication to pilots that the helicopter has not yet been released to service," says Russell.

"This is especially important when maintenance is being done at an operational base with multiple helicopters and pilots present.

"If I get hit by a bus on my way home, the others here need to know exactly where I was in the process. These simple indicators really help."

Now check out...

"Drifting away from safety" by CAA Chief Advisor of Human Factors Alaska White in *Vector* (Winter 2023).

"Duplicate inspections", *Vector* (Winter 2022).

Both at **aviation.govt.nz/vector**.

Remedial training to prevent REPEATED FLIGHT TEST FAILURES

// **By CAA Flight Examiner Guy Brooking**

It's no secret that pilots who've had to make multiple attempts to pass flight tests, later feature disproportionally in accidents[1].

The issue

The connection between multiple attempts to pass a flight test and experiencing an accident, has been identified as a global phenomenon. In New Zealand, it applies not only to checks in an airline, but also to the initial issue flight test for a pilot licence or rating.

An ASPEQ review of flight test pass rates, carried out on behalf of the CAA, reveals an increasing number of candidates failing multiple flight tests, and in particular, that for the CPL.

Some of the worst cases have tried six times to pass their test. Feedback from examiners reveals that remedial training between test attempts has lacked focus or has been entirely absent.

This is particularly concerning with professional pilot licence tests.

While it's not unusual for a candidate to fail their first test at a professional licensing level, a second failed attempt needs to be viewed by the training organisation, the instructor, and the candidate themselves, as serious. »

1 For instance, the captain of Colgan Air 3407, which crashed in the US in 2009, was identified as having a history of multiple failures of flight tests and checks. Source: NTSB/AAR-10/01

Photo: iStock.com/AzmanL

Changes to AC61-1

To address these concerns, Advisory Circular AC61-1 *Pilot licences and ratings – general* has been amended. Where a candidate has failed a flight test, remedial training needs to take place. This must be recorded in the logbook and will be checked by the flight examiner.

In more serious cases, where a candidate has failed a flight test three times, the training organisation should develop a remedial training plan and submit it to the CAA before proceeding.

If the CAA is satisfied the plan addresses the cause of the flight test failures, the training organisation can go ahead with arranging the pilot's next attempt.

Planning remedial training

Due to the serious nature of multiple failures in flight tests, the CAA expects that remedial training – addressing a third failed flight test – is planned, and submitted to us (email **licensing@caa.govt.nz**) by the CFI, training manager, or a senior instructor.

The first step in planning remedial training is to gather information from various sources. When a candidate is being debriefed by a flight examiner after a test, the instructor should be present. Where the test has been unsuccessful, the CFI or a senior instructor should also be present.

Relying on the candidate to explain what was said by the examiner when the candidate is probably in an emotional state, will likely result in missing key information relevant to subsequent training.

So talk with the candidate, once they've had time to calm down, and speak with other instructors who've flown with them.

Training records can be particularly helpful in tracking the progress of the student, and where they may have had difficulties in the past. The aim of gathering this information is to look for any patterns or trends through the training and flight tests that might point to an underlying cause.

A simple root cause analysis tool such as the Five Whys can also provide good insight. The tool simply repeats the question, 'Why?' at least five times, by which point you're likely to have reached the root cause of the problem.

From here, a remedial training plan can be built, beginning with the root cause, and working upwards to the specific issues causing the flight tests to be failed.

Send this plan to us, clearly showing how many flights are planned and what the objectives are of each of the flights. Include copies of all previously failed flight tests.

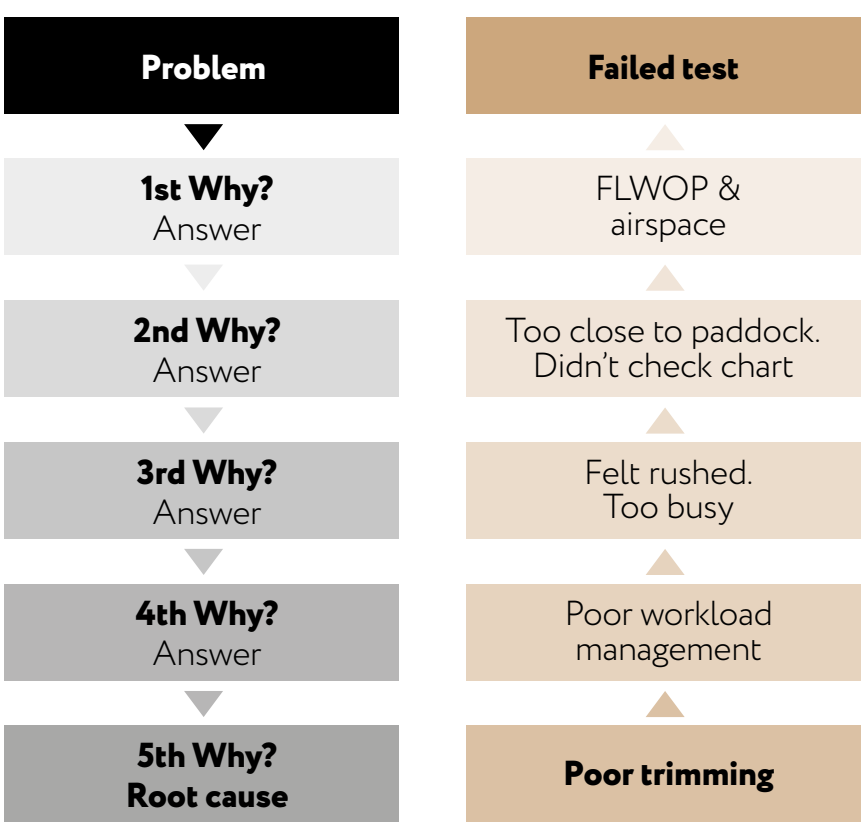
Plan from the root cause

▼

A root cause analysis tool such as the Five Whys can provide good insight into the root cause of the problem.

▲

A remedial training plan can be built, beginning with the root cause, and working upwards to the specific issues causing the flight tests to be failed.



Avoiding failure in the first place

Training organisations and instructors should ensure training is closely managed as a pilot approaches a flight test, and they should deal with any concerns arising during this time.

Many recent tests have been unsuccessful due to poor groundwork or eligibility problems identified in the logbook. Groundwork should be practised multiple times as there's no cost to the student, and instructors must review practice groundwork to ensure students are competent in their flight planning and preparation.

Logbooks need to be 'forensically' checked by the organisation, to prevent a wasted test result due to eligibility errors.

We recommend a complete mock test is carried out by the CFI or senior instructor to provide the candidate with an experience close to the real thing. This mock test should include all the paperwork, logbook review, and oral questions to be expected on a real test.

Instructors conducting these mock tests should avoid providing tips or instruction, as well as avoid giving any type of affirmation during the mock test. This will help the candidate know what to expect, and it would provide a good assessment of their performance under test conditions.

Before the student goes up for a test, make certain they're very current, and if there are any doubts as to their preparedness, delay the test.

With the change to the advisory circular, together with advice provided in this article, we expect that the number of multiple flight test failures will reduce, and that failures at the third attempt will become very rare.

A reduction in the frequency of attempts at professional-level licence and rating tests will provide a better barrier inside the 'Swiss cheese model of accident causation'[2], and it's hoped it will break at least one link in the chain to a potential accident.

2 **SKYbrary.aero** and search on 'Swiss cheese model of accident causation'.

Don't be *that* pilot **Check your NOTAMs!**

To accommodate increasing numbers of flights to Whitianga airfield, in 2022, Mercury Bay Aero Club embarked on a major three-year works programme.

Each stage was notified by NOTAM.

It soon became obvious, however, that some pilots weren't bothering to check NOTAMs and the results of that had local pilots shaking their heads in disbelief.

The aero club's safety officer Steve Chilcott says that, in the last couple of years, there's been a marked increase in the number of GA recreational flights – particularly microlight operations – landing at Whitianga.

"Barrier Air has also begun commercial flights here, and there's been an increasing number of student pilots from the Auckland training schools using the airfield for practice.

"So we ploughed the runway level and re-seeded it in two sections lengthwise.

"One section remained in use while the other was closed and marked with white crosses.

"Despite having a NOTAM issued, we had numerous aircraft landing over the white crosses on the closed section.

"One chap even carried out a series of circuits on the closed section, leaving large ruts in the newly sown grass."

Steve says this pilot's further mistake was to stop for a coffee. He was approached by an irate club member who offered him a choice – pay for the damage or "take this rake and sort it out". »

Photo supplied via Steve Chilcott.

The pilot was out in the burning sun for four hours.

"I suspect he's now aware of what the white crosses are for," says Steve.

Another unprepared pilot landed in knee-high grass in an open drain.

"He relied only on advice from his mate, who'd told him that because of the works at the airfield, he should land to the south of the runway.

"That was good enough for him."

Steve, who lives at the airfield and happened to be outside, said he could see the pilot was far off the correct runway on approach, and tried to wave him away.

"But he continued, and carried out the shortest landing roll I've ever seen – straight into this grass.

It took five people to pull the aircraft out of the drain and on to a taxiway.

But in another startling display of 'don't care', the pilot then jumped into his aircraft, fired it up, and taxied off to the airfield café.

"Without checking for any damage!" says Steve, incredulously.

On yet another occasion, the aero club had shortened the runway so the council could lay a drainpipe. Again, a NOTAM was issued.

"Despite the NOTAM, we had a pilot touch down in the usual spot and barrel through a line of cones and tape marking off the work in progress.

"Fortunately, no damage was done to the aircraft. But we were pretty disbelieving.

"Another chap, after landing, parked bang in the middle of one of our new taxiways. He 'didn't know it was a taxiway', despite it being well signalled on our plate, and parking right next to a taxiway sign!" says Steve.

It's now easy to do

Since January 2023, the CAA has had 23 reported cases where a GA recreational pilot has either not checked, or not complied with, a published NOTAM.

CAA Investigator Peter Stevenson-Wright says this is despite the Airways IFIS app having been available for many years, and the 'PreFlight' flight planning website being available since 2022 (**gopreflight.co.nz**).

"Both these products are free, and are easy to use. So checking for NOTAMs is a pretty straightforward exercise before departing," says Peter.

"Checking during flight is also a great idea. Anything can happen after you depart."

Steve says it appears there are "those few pilots who think they're driving a car and who just leap in and go.

"The majority of pilots, though, do check NOTAMs – but that makes those who don't and who cause all the damage and stress, all the more obvious."

Letters to *Vector*

Advice on fuel handling

I always enjoy reading safety articles in *Vector* and learn from the vast experience in our field.

I refer to the scary article, "Up in flames" (*Vector*, Spring 2024) and cannot imagine the grief of losing one's aircraft burned to ashes.

The article made me more aware of the dangers of refuelling aircraft from plastic fuel containers and I have modified my procedure accordingly.

However, a lot of questions went unanswered, as follows.

John Ashman
Manakau

Airfuels CEO Alan Lang, and the CAA, reply

JA – Does special clothing generate more static?

Airfuels – High-vis gear is typically made of synthetic material which generates a lot of uncontrollable static electricity.

We recommend only natural fibres, cotton and wool, including underclothing. Heavy cotton overalls are recommended in case of an explosive flash from a spark, especially from Avgas.

JA – What is the effect of parking aircraft on carpet or on carpet patches?

Airfuels – In terms of static electricity, there's no particular effect. Aircraft owners park their aircraft on carpet to protect the tyres.

JA – What is the proper bonding technique for refuelling from plastic containers?

CAA – Use only jerry cans specifically manufactured as fuel containers. The traditional metal jerry cans are preferable to the plastic versions. Plastic jerry cans intended for use with fuels, and up to 25L in size, will have been manufactured to the recognised standard in New Zealand – *AS/NZS 2906:2001, Fuel Containers* – and this is embossed permanently on the side of the container.

Also printed on such cans is the date of manufacture. Cans manufactured more than five years before the date of fuelling should not be used and the fuel discarded.

Do not use plastic containers not designed for fuel because, among many deficiencies, they tend to accumulate a static charge, and the fuel may degrade the container material.

Airfuels – The plastic containers are inert, but the fuel generates static electricity as it splashes into the container. Always fill the containers on the ground and always ground the container before filling your aircraft.

JA – How do you effectively and safely bond the aircraft in a hangar?

CAA – Bonding between the fuelling vehicle and the designated bonding point of the aircraft should be completed before any hoses are connected or tank filler caps opened. Bonding should be maintained until all hoses have been finally disconnected or tank filler caps replaced.

Airfuels – You can use a grounded wire static strap.

JA – Is a static strap, as used with cars, adequate?

Airfuels – No.

JA – Should I earth my aircraft when just parked in the hangar?

Airfuels – The aircraft should only require to be earthed once – to release all the static electricity it has collected from the atmosphere.

// AND NOW...

Read Advisory Circular AC91-22 *Aircraft Refuelling and Defuelling – Fire Prevention and Safety Guidance Measures*. Go to **aviation.govt.nz/rules** > advisory circulars > Part 91 > AC91-22.

The Good Aviation Practice booklet, *Fuel management*, is at **aviation.govt.nz/education** > safety education publications > good aviation practice (GAP) booklets > pilot practice.

If you're looking for the original story the letter above is responding to (*Home-built aircraft up in flames*, Spring 2024) you'll find it at **aviation.govt.nz/vector**.

Vector notices

OCCURRENCES DASHBOARD

These are the number and type of occurrences reported to the CAA, 1 October 2024 to 31 December 2024 ('Q4'), compared with 1 October 2023 to 31 December 2023.

Occurrence type

Aerodrome incident
Q4 2023 **58** Q4 2024 **40** ↓

Aircraft accident
Q4 2023 **16** Q4 2024 **11** ↓

Airspace incident
Q4 2023 **508** Q4 2024 **429** ↓

Aviation-related concern
Q4 2023 **346** Q4 2024 **334** ↓
(26 laser strike reports Q4 2024)

Bird strike
Q4 2023 **560** Q4 2024 **350** ↓

Dangerous goods
Q4 2023 **13** Q4 2024 **9** ↓

Defect
Q4 2023 **234** Q4 2024 **89** ↓

Hang glider accident
Q4 2023 **10** Q4 2024 **9** ↓
(7 paraglider accidents Q4 2024)

Navigation installation occurrence
(for example, a transmitter failure)
Q3 2023 **23** Q4 2024 **3** ↓

Operational incident
(for example, encountering severe icing)
Q4 2023 **770** Q4 2024 **477** ↓

Parachute accident
Q3 2023 **6** Q4 2024 **1** ↓

Promulgated information occurrence
(for example, inaccurate weather information)
Q4 2023 **6** Q4 2024 **4** ↓

Total occurrences
Q4 2023 **2550** Q4 2024 **1756** ↓

OUR AVIATION SAFETY ADVISORS – IN DETAIL

Our ASAs are an invaluable 'bridge' between the CAA and you, our aviation community. They travel the country keeping in touch and offering expert advice. Here's a bit more about them.

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

I ran Wakatipu Aero Club and Air Wakatipu for nearly 20 years conducting training, examining, charter and scenic flights. I worked in the licensing team at the CAA for 10 years before moving into the ASA role.

Richard Lane
Airworthiness, South Island
027 269 5796 /
richard.lane@caa.govt.nz

I've worked for 35+ years as a LAME in New Zealand and abroad, moving into technical training as a B1 and B2 type rating instructor on A320s, B777s and B787s, before joining the CAA.

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

I've been in aviation almost 50 years, starting with fixed-wing aircraft, moving into agricultural flying and converting to helicopters. I joined the CAA as a flight operations inspector in the helicopter and agricultural unit.

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

I've spent 35 years in general aviation engineering, in New Zealand and abroad, predominantly maintaining helicopters. I've been with the CAA for 17 years.

AIRSPACE OCCURRENCES

Airspace occurrences can be read on the CAA website, **aviation.govt.nz > safety > airspace occurrence briefs.**

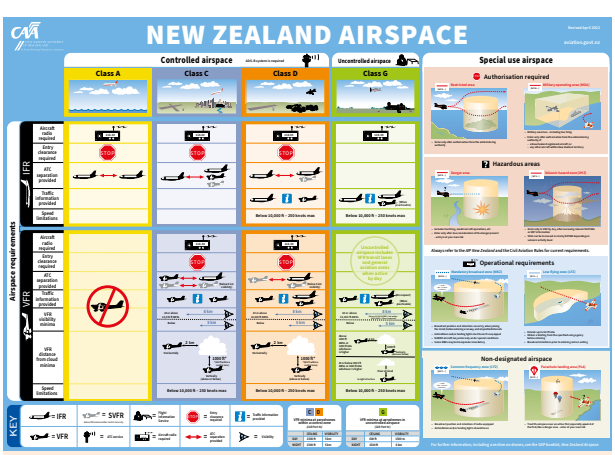
Date:	10-Jul-2024
Time:	02:21 UTC
Location:	Omaka
Airspace:	T654 Omaka VFR Transit Class G

The aircraft departed Omaka off grass runway 01 en route to NZWU. Runway 01 is a right-hand circuit that has the WB CTR instrument approach boundary approximately 1.2NM from the start of a full-length take-off roll. This requires a pilot to focus on the take-off and climb, and to turn right at least 90 degrees to track towards the Watertank VRP. This is to avoid the instrument approach boundary which is 'kinked' at that position to allow NZOM operations to occur within transit area T654.

The pilot has flown into Omaka successfully many times before and knows the intricacies of arriving and departing at the aerodrome. He advised he plans all his flights well ahead and uses OzRunways as his primary navigation tool. He had even purchased new VNCs recently for reference.

However, he said that on the day, he omitted to turn in time and entered the instrument approach boundary. Upon realising, he turned right to vacate the area when ATC also contacted him. The rest of his flight was uneventful. He advised that in future he will focus more on the local Omaka procedures and requirements and hopefully will not repeat this error.

CAA occurrence number 24/5349



New Zealand airspace poster

Poster available to order or download at **aviation.govt.nz/education**.

Date:	03-Aug-2024
Time:	16:15 NZST
Location:	Rangiora
Airspace:	Class G – MBZ

The aircraft was joining from the south-west near Cust, and the pilot made all the expected radio calls. He joined overhead for runway 07 as smoke from a local feature indicated there was a very slight easterly. He also thought that the setting sun might affect visibility on final of the reciprocal runway and he wanted to avoid that situation. He descended and flew a normal 07 circuit and landed.

While joining on the non-traffic side, his aircraft crossed ahead of another joining aircraft that was also on the non-traffic side. Then, as he turned downwind for 07, he went past another aircraft in the mid- to late-downwind position of the 25 circuit (duty runway at the time). He did not see either of these aircraft as he continued to join for 07. Fortunately, the other two pilots saw that aircraft and they kept a lookout for it. Ultimately, the aircraft that was downwind for 25 elected to carry out a go-around from short final as he saw the other aircraft on final for 07, and knew it was not responding to comms.

After landing, the pilot was made aware of his transgressions and upon checking the radio in his aircraft, realised he had selected the wrong radio frequency. He also did not know that there were two aircraft in the 25 circuit.

During his interview with the CAA, he said that he'd noted it was rather quiet for that normally busy aerodrome, but the thought did not trigger any additional action.

As a consequence of this incident, he has indicated he will focus on more thorough all-round lookout and do better at planning and selecting radio frequencies.

Additionally, if he has any future inclinations that something seems unusual, odd, or not right, he will use this inclination as a trigger to check, scan, or look for what might be wrong.

CAA occurrence number 24/5911

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, **taic.org.nz**.

Cessna 172M	
Date and time:	10-Nov-2022 at 08:50
Location:	North of Whangamatā
POB:	3
Nature of flight:	Transport passenger A to B
Pilot licence:	Commercial Pilot Licence (Aeroplane)
Age:	39 yrs
Flying hours (total):	4070
Last 90 days:	90

During cruise, while seaward of the coast, the pilot noticed the engine oil pressure indication was decreasing. As a precaution, the pilot turned the aircraft towards the land and a suitable landing area. Shortly after, the engine seized and they conducted a forced landing onto a paddock. There was no damage to the aircraft.

The initial visual inspection found a large amount of oil on the right-hand side of the aircraft. The maintenance investigation found that the oil cooler had split, resulting in leakage of oil overboard. DCA/GEN/11A FE Cessna CAP 79-10-00 had been carried out in May 2021 at 8079 TTIS. Engine to be overhauled and oil cooler replaced.

As a preventative measure, in addition to the required oil cooler inspections, these have been expanded to also include a pressure check of the oil cooler at the 1000 hours/3 year inspection.

CAA occurrence number 22/6684

Alpi Aviation Pioneer 300	
Date and time:	02-Mar-2023 at 11:22
Location:	Kaiaua
POB:	1
Damage:	Substantial
Nature of flight:	Private other
Pilot licence:	Private Pilot Licence (Aeroplane)
Age:	77 yrs
Last 90 days:	5 hours on type

During flight, the engine began to vibrate heavily and then stopped. The pilot commenced a forced landing onto a narrow strip of land beside the beach. During the landing roll-out, braking action was poor and the pilot attempted a ground loop, however, the left-hand wing struck a fence post which slewed the aircraft into a ditch. The pilot suffered a sore back from impact with the ditch.

The maintenance investigation found that the engine's #5 piston had completely disintegrated, resulting in the engine seizing.

Research carried out revealed that the Camit 3300 engine is prone to piston failures between 200 to 500 hours. The engine in this aircraft had accrued 258 hours.

Camit Aero Engines is no longer in business (since approximately 2015) and so the engine is unsupported. There were approximately 120 engines manufactured by Camit.

Information supplied to the CAA indicated that one other NZ registered aircraft was fitted with the Camit engine. CAA discussion with that aircraft owner determined that his engine had been modified with different cylinders and pistons and therefore was not susceptible to the piston failure that occurred in this accident.

CAA occurrence number 23/1380

Robinson R44 II	
Date and time:	20-Dec-2023 at 05:20
Location:	Twyford, Napier
POB:	1
Nature of flight:	Ferry/positioning
Pilot licence:	Commercial Pilot Licence (Helicopter)
Age:	38 yrs
Flying hours (total):	900
Flying hours (on type):	550
Last 90 days:	40

After taking off to fly to the first agricultural spraying operation of the day, while climbing through approximately 150 feet AGL, the pilot sensed an unusual rotor noise and noticed the engine RPM and rotor RPM decaying. No warning lights were seen and no low rotor RPM horn was heard. The pilot made a left turn, to reach the only suitable landing area and conducted a forced landing into the confined space. The helicopter struck some stacked wooden crates with the main rotor blades, struck the ground heavily, bounced, and tipped over. The engine was not running on the ground. The pilot turned the battery master off and called for help. They didn't sustain any injuries, but the helicopter was substantially damaged. No reason for the power loss could be established.

CAA occurrence number 23/9388

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

Airbus Helicopters AS 350 B2

ATA chapter:	5400

After dropping a heliski load at Mt Stevenson, a bang was heard as the aircraft passed through translation, which sounded like a seat buckle hitting the floor. As the flight continued during the climb, the bang was heard again. A suitable place was located to land.

On investigation the right-hand transmission cowl was found partially open (latches undone). The cowl had damage to the forward corner.

The cowl was closed and the aircraft was returned to base where surface damage was noted to the lower sleeves.

The pilot had checked the cowls before take-off, but didn't notice that the latches were undone. The pilot's self-induced time pressure was determined to be a significant factor.

CAA occurrence number 22/4874

MBB MBB-BK117 B-2

Part manufacturer:	Goodrich
Part number:	76378-200
ATA chapter:	2500
TSO cycles:	795

During training, the rescue hoist was damaged due to the cable follower jamming up. The damage was not noticed until the aircraft was back at base and the crewman was conducting the post-winching inspection.

The manufacturer was consulted and determined that, according to the damage visible on the level wind screw, the cable guide had seized on the guiding bars while the level wind screw was turning. It created load / friction between the level wind screw and level wind shoe, resulting in damage on the tips of the level wind screw. Seizure of the cable guide and damage on the level wind screw led to a misalignment of the cable guide with the drum, leading to the cable being miswrapped.

The root cause of this event is most likely corrosion which seized the cable guide on the guiding bars. Internal processes were reviewed to enhance the likelihood of identifying any corrosion markers.

CAA occurrence number 23/920

Cessna 208B

On departure, the pilot experienced an engine fire crew-alerting system message. As there were no signs of fire, the pilot decided to continue to their destination via the most direct route. The pilot requested priority landing and landed with no further incident.

On inspection, it was found that the fire detection wire had a small nick and was contacting the alternator pulley, resulting in a false fire alert. One of the retaining clips had come loose, allowing the wire to rub on the alternator pulley. The retaining clip was replaced, and pilots have been requested to inspect these clips during their preflight inspection.

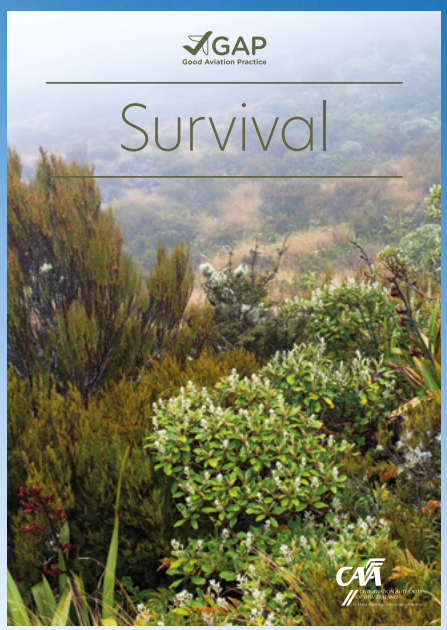
The internal investigation found that the pilot's actions, once receiving the alert, were not appropriate. The organisation's chief pilot advised that the correct action should have been to return to their departure airport. He further advised that the intermittent nature of the alert would not necessarily be an indication of a false alert, and that an actual fire would not automatically be reflected in the aircraft instruments, as believed by the pilot.

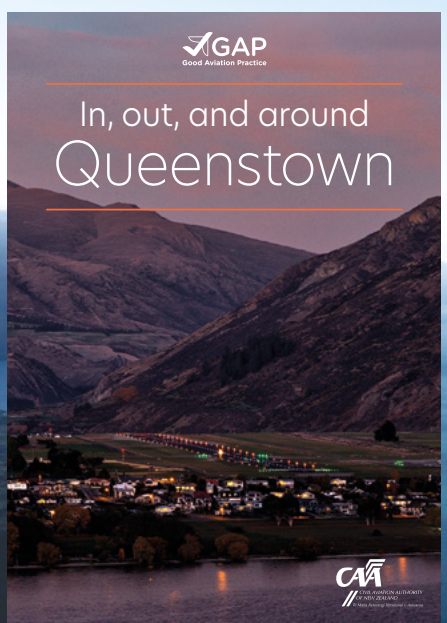
The chief pilot will counsel the pilot on the incident and will update their training material to ensure all pilots are aware of the appropriate actions to take in such an event.

CAA occurrence number 23/363

GAP
Good Aviation Practice

UPDATED
GOOD AVIATION PRACTICE BOOKLETS





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