

# vector

## Classic Fighters 2015



It's Not Over Till It's Over  
– Postflight Checks

Microlighting Across Australia

Skydiving Out of a Helicopter



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Te Mana Rererangi Tūmatanui o Aotearoa



## 4

### Classic Fighters 2015

Many aircraft converge on Omaka/Woodbourne for the Classic Fighters airshow. We remind pilots of the importance of the AIP Supplement, and highlight some key safety points.



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### It's Not Over Till It's Over – Postflight Checks

A hasty or sloppy postflight can bring a whole world of misery to the next pilot taking the aircraft out – which could be you as well. Four long-time aviators give the benefit of their experience as to why a thorough postflight routine is essential to safety.



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### Microlighting Across Australia

A year of painstaking preparation took a microlighting Kiwi, an expat-Kiwi and three Aussies safely from one side of Australia to the other, and back again. One of the adventurers describes the meticulous groundwork prior to the July 2014 takeoff.



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### Skydiving Out of a Helicopter

Skydiving is an exhilarating experience, and skydiving out of a helicopter takes it up a notch. If you're doing it, or planning on it, there are some rules that need to be followed to ensure compliance and that everything goes safely.

Cover: Tim Sullivan flies the Bristol Fighter and Jerry Chisum has just been 'shot down' in a Fokker D.VII. Aaron Marshall is the gunner in the Bristol Fighter. The Fokker D.VII would be one of the most 'shot down' aircraft in New Zealand! Photo: Gavin Conroy, <http://classicaircraftphotography.com>

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**(0508 222 433)**

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# Classic Fighters 2015

Classic Fighters is right around the corner. Here's what you need to know if you're flying into Woodbourne or Omaka this Easter.

**Please note that Daylight Saving Time (NZDT) ends on Sunday morning 5 April. This article is for guidance only – use the AIP Supplement 40/15 when planning your flight.**

## Pre-flight Preparation

AIP Supplement 40/15 covers procedures for operating in the Woodbourne and Omaka area from 2 April to 6 April. They are available at [www.aip.net.nz](http://www.aip.net.nz).

"My advice is to study the published joining and departing procedures, AIP Supplements, and current charts well in advance," says Noel Bailey, an aircraft owner who has experience flying to Classic Fighters.

"Plan your flight and make plenty of allowance and contingency plans for possible delays, and for issues like weather and traffic.

"Memorise as much as you can so you can fly the plane confidently and safely. This will give you the time you need to scan outside the aircraft," says Noel.

Kerry Conner, Wakitipu Chief Flying Instructor, has flown in past Classic Fighters airshows.

"Make sure you read any supplements and other relevant information prior to the event. Don't just skim over the supplement. Study it and commit the procedures to memory so that on the day you are re-reading them as a refresher.

"Make notes of the key points – altitude limits, radio frequencies, reporting points, and times of open airspace for arrivals – especially if you are planning on flying into Omaka. You don't want to arrive there low on fuel, during a closed period with NORDO aircraft practising in the airspace," says Kerry.

## AIP Supplement 40/15

### Practice Days

Between 1000 and 1600 NZDT on Thursday 2 and Friday 3 April, Omaka will be partially closed while practice sessions are conducted in the first and the third quarter of each hour (ie, 1000 to 1015, and 1030 to 1045). In the second and last quarter of each hour (ie, 1015 to 1030, and 1045 to 1100) arrival or departure slots will be available for general use. However, be prepared for delays if a practice overruns its allocated time.

### Airshow Days

Omaka will be **closed to all aircraft** from 1715 until 1945 NZDT on Friday 3 April, from 0930 until 1630 NZDT on Saturday 4 April, and from 0930 until 1630 NZST on Sunday 5 April.

### Temporary Restricted Area

R699 will be established to maintain a safe traffic flow in and out of Omaka.

Visiting aircraft must remain within R699 when joining Omaka during the practice days, and when leaving Omaka on Monday 6 April.

When R699 is active the airspace becomes class G (uncontrolled). Air traffic services will continue to be provided by Woodbourne Tower for those aircraft cleared to operate within Woodbourne CTR/D (but not the restricted area).

To operate in R699 during designated practice sessions and airshow times, you must:

- » have the specific approval of the administering authority
- » operate your transponder on Mode A and C, and turn on landing and/or anti-collision lights (if fitted)
- » listen out and make radio calls to "Omaka Traffic" on 126.75 MHz.

Non transponder-equipped aircraft must be accompanied by a transponder and radio-equipped aircraft when arriving and departing.

## Omaka

### Runways

From 31 March to 7 April 2015, Runway 01/19 at Omaka will be closed.

### Fuel

For visiting aircraft, avgas will be available from an Air BP trailer tanker in the Aviation Heritage Centre parking area.

### VFR to Omaka

Subject to traffic and weather, there should be no delay when requesting a clearance to transit the CTR/D and enter R699 on a published arrival procedure. Other procedures may be accommodated if weather, traffic, and safety permits.

Bob Jelley, CAA Aviation Safety Adviser, says you need to identify traffic early, and if ever in doubt, communicate your uncertainty without delay.

"It's important to identify the reporting points early, and if you have a dual listening capability, check what activity is going on at Omaka. Don't be rushed when traffic is busy, slow your aircraft and make it easier for yourself, the controller, and other traffic."

### Departing Omaka VFR

You should expect to fly one of the Omaka VFR departure procedures published in Vol 4. If you need to enter the Woodbourne CTR/D, obtain a clearance from Woodbourne Tower before takeoff.

## Woodbourne

### Fuel Considerations

Aircraft may be asked to hold outside controlled airspace if the weather falls below certain minima (see AIP Supplement 40/15 for details), so you must carry enough fuel to hold for 30 minutes and subsequent diversion, if required, to another aerodrome.

At Woodbourne, avgas will be available on request from Air BP during the following periods only: 0800 to 1700 NZDT on Friday 3 April, and 0800 to 1700 NZST on Monday 6 April.

### ATIS

Pilots must listen to the Woodbourne ATIS, 126.05 MHz, before entering R699 or the Woodbourne CTR/D.

### VFR to Woodbourne

AIP Supplement 40/15 contains two VFR arrival procedures for Woodbourne, the River Arrival for Runway 06, and the Coast Arrival for Runway 24.

Simultaneous parallel operations are permitted on grass and sealed Runways 06/24 for aircraft less than 5700 kg. Light aircraft can expect to land on the grass.

Jim Rankin, New Zealand Air Force Squadron Leader, will be flying the Avenger at Classic Fighters 2015.

"My biggest tip is to read and understand the published procedures, as well as be familiar with the airspace and airfield plates.

"Too many pilots turn up at these sorts of events with an obvious lack of knowledge," says Jim.

### Departing Woodbourne VFR

There are two VFR departure procedures published in AIP Supplement 40/15, the River Departure for Runway 24 and the Coast Departure for Runway 06. Aircraft must report clear of the Woodbourne CTR/D on 122.8 MHz.

### Flight Plans

Woodbourne Tower will not accept flight plan requests or terminations. Call the national briefing office (0800 626 756 or 0900 62 675) to cancel after landing, or Christchurch Information on 121.3 MHz prior to entering the Woodbourne CTR/D.

Gene DeMarco takes off in a Bristol Fighter, and flying in formation with him is Paul Hughan flying an Airco DH5.

The DH5 is the only one of its type flying in the world and both aircraft are operated by The Vintage Aviator Limited.

### Controlled VFR Request

VFR pilots requesting a clearance to enter the Wellington CTA/C must:

- » if in uncontrolled airspace, make their request at least five minutes before reaching the CTA/C boundary – contact Wellington Control on 122.3 MHz; or
- » if controlled VFR with Christchurch Control or Ohakea Control, advise their intentions to that sector; and
- » have a serviceable Mode C transponder, and include a preferred altitude and route in their request.

Clearances will be subject to workload and should not be requested between 0900 and 0930, 1400 and 1500, and 1600 and 1800. If a clearance is critical, contact the ATS supervisor at Christchurch.

### IFR into and out of Woodbourne

When R699 is active, all instrument approach and departure procedures are available, except the VINES TWO departure off RWY 24.

All instrument arrival and departure procedures are subject to conditions listed in AIP Supplement 40/15.

### Other Key Points

The following are additional points to consider when flying inside the Woodbourne CTR/D.

- » Ask Woodbourne tower for a higher altitude than that specified in an arrival or departure procedure if you are concerned about terrain/turbulence.
- » Woodbourne CTR/D is transponder mandatory – select "ALT".
- » NORDO aircraft may be transiting in the Omaka T654 VFR transit lane – exercise caution.
- » Keep a good lookout for low flying aircraft in the Low Flying Zone near the Domes reporting point. ■



Photo: Gavin Conroy, <http://classicaircraftphotography.com>

# It's Not Over Till It's Over – Postflight Checks

You've made a textbook approach and landing, and taxied to the parking area. You've quickly shut down the engine and run a cursory once-over of the after-landing checklist. Yeah, yeah, pretty much looks all in order...



Control locks prevent damage from wind gusts.



Don't rely purely on your aircraft's park brakes. Chocking the wheels will add security – and peace of mind.

...You grab your bag and head off to the outdoor concert. During the evening, the wind changes and intensifies, and you realise, with a sinking stomach, that your aircraft is now tail into the prevailing wind and is being battered to death by the gusting air.

Or perhaps you don't think about it at all...

"Parking properly is one of the most important things to do, after you land," says Canterbury Aero Club Chief Flying Instructor (CFI) Jay Peters. "You need to take note not just of which direction the wind is blowing from, but if it is likely to change before you get back the next day."

Jay tells the story of landing at Dunedin and heading off to Carisbrook for a cricket game. "I realised halfway through that the wind was changing. I couldn't enjoy the game thinking about the controls banging around." He rang the aero club to ask them to move the Partenavia which, lucky for Jay, they had already done.

Others are not so fortunate. Warren Sattler, CFI of Ardmore Flying School, once took a Cessna twin 404 out for a flight rating over the Hauraki Gulf, but while running through the asymmetric drills he lost directional control at about 115 knots.

"An engineer later found the push rods were completely bent – legacy of an American pilot who hadn't anticipated a directional wind change at Wellington, and who had left the rudder to be whipped back and forward all night."

Parking intelligently is not even the first post-landing skill a pilot should be exercising, according to CAA's Standards Development and Training Officer, Carlton Campbell.

"There's an art to just manoeuvring the aircraft around to park. Be aware that your propwash could be blowing dust and other rubbish over people who are trying to preflight, or worse, into a hangar with engineers getting increasingly brassed off at the thoughtless pilot.

"Tight turns on differential braking can create a slipstream that can hassle other aircraft and damage your own prop because its 'vacuum' is sucking up loose material from the ground.

"Such tight turns with an accompanying reduction of throttle in aircraft with a constant speed unit may put the counterweights in the propeller under stress, ultimately causing damage or failure."

With the buzz of a good flight and landing, too many pilots – and that includes experienced ones – do just a cursory check of the aircraft before getting on their way.

"That buzz should be contained until the plane is 'put to bed' in the hangar or on the pickets," says Carlton. "The job of flying is only half done without a proper postflight check. You should always leave the aircraft in a state of airworthiness and readiness for the next pilot – which could also be you," he says.

That includes making sure the control locks are in/on.

"If not," says Warren Sattler, "all it takes is a short blast from the slipstream of another aircraft to cause damage to the rudder, ailerons and elevator that cannot be seen."

Carlton Campbell says time should be taken over stabilising temperatures and shut down checks.

"It's easy to leave the master switch on and flatten the battery. I've been embarrassed by seeing the rotating beacon still on, so no matter how experienced the pilot, it's all too common."

He says using a checklist is good, particularly with more complex aircraft.

"As long as it doesn't become mindless box ticking. It's important to properly 'interact' with the checklist so you are conscious all the time of what you are actually checking."

Once parked, the aircraft needs to be properly picketed and/or chocked.

"A friend of mine," says Warren Sattler, "a Queenstown air traffic controller, once emailed me at Ardmore to say she had just watched three of our parked aircraft, from a group that had set out from Ardmore, turn 180 degrees in the wind!"

Chocking the aircraft also allows the opportunity to check the tyres for damage or under-inflation.

Next should be the pitot covers, Carlton says, and then a walk around the aircraft looking for things like oil or fuel leaks, or the impact damage of any bird strike.

Jay Peters suggests checking your fuel use on the just-completed flight. "The actual amount of fuel burned during your flight may vary from the figures quoted in the Pilot Operating Handbook. It will also vary depending on each pilot's approach to 'leaning' the aircraft (remember leaning in the cruise should be done at any altitude). So check it every now and again. Look at what you have actually used, so there's no chance that you'll be caught short.

"And think about refuelling straight away rather than leaving it until the next day when you might be under time pressure.

"If the ground is uneven, you could get cross feeding of fuel tanks. That could lead to significant imbalance of load beyond flight manual limitations, let alone leaking from the overflow. So choose your parking area carefully."

People sometimes forget the importance of cleaning the machine. Bugs can bake on the windscreen and limit visibility. Things like bugs and bird droppings can degrade the performance of the aerofoil. Even a basic clean can help you to identify damage that would otherwise go unnoticed.

Make sure you take away all your own equipment, possessions and litter. Loose gear left behind can have catastrophic consequences.

"A recent crash at Feilding was caused by a loose screwdriver jamming the controls, but you very rarely get into an aircraft that does not have someone else's junk in it," Carlton says.

Once inside the clubrooms or terminal, terminate your SARTIME or company plan – they like to know you are back in one piece.

Carlton says after-flight paperwork is really important and too often dismissed.



Benjamin Petersen of Kapiti Aero Club picketing the aircraft. That will stop the aircraft being moved around, or even flipped over, by a buffeting wind.



Accurate airspeed indication is vital, so keep the pitot tube covered to keep bugs out when not flying.

“People scribble their notes, and don’t fully complete the daily flight record. But it’s a legal requirement and necessary for the operators,” he says.

Warren Sattler says there is a huge reluctance to report something like a heavy landing. “But it’s critically important that the defects sheet at the end of the trip be properly completed.”

Roger Cruickshank, CFI from Waikato Aero Club, agrees that many pilots, including experienced ones, are sloppy about entering details of a defect.

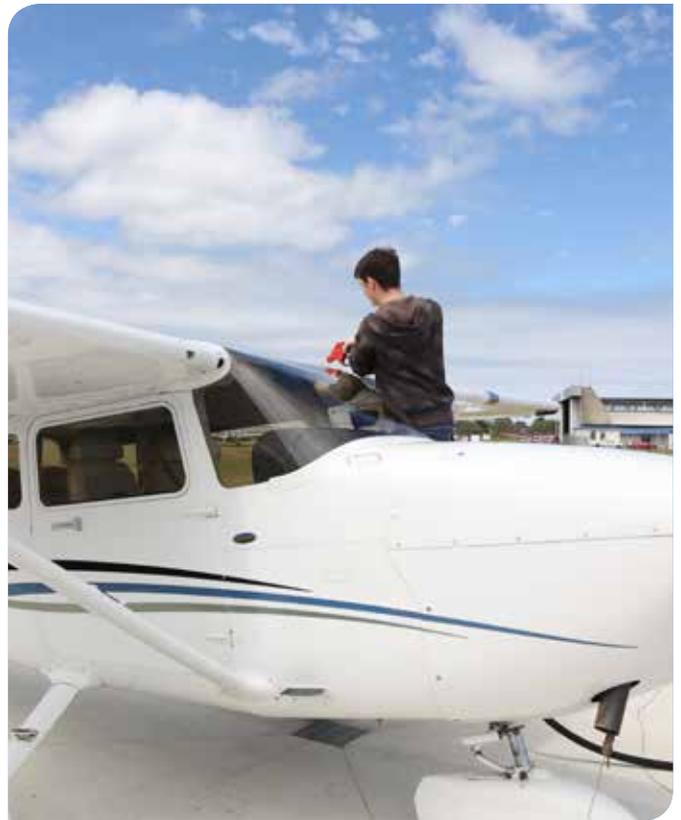
“What sometimes happens is that when people come back from a flight they may have found some maintenance issue with the aeroplane. It could have been a radio or instrument not working right, or even their headsets not working right. But when they come into the office to check in – even instructors are bad at this – they don’t give enough detail as to what actually went wrong.

“So when the maintenance controller comes to tell the engineers what’s happening, they just say something like ‘the artificial horizon’s broken’. Well, that’s not much good to the engineers, they need to know what the artificial horizon was doing that told the pilot it was broken. They need details.”

Even if flying solo, a postflight ‘briefing’ is important. “In your mind, review the different phases of the flight, and seek the opinion of someone more experienced if anything troubles you,” says Carlton Campbell.

As a final postflight note, Jay Peters recommends pilots exercise what he calls “general anticipation”.

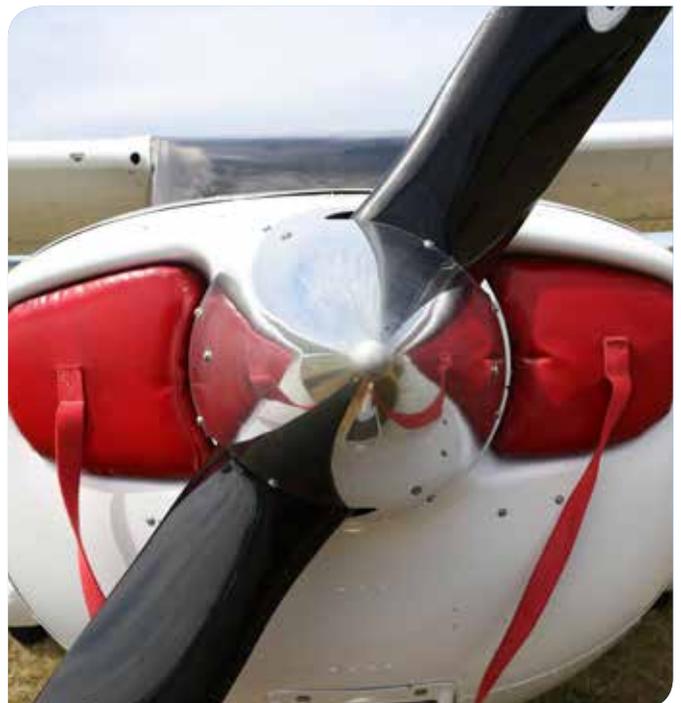
“If you plan to stay for a day or three, look ahead at the weather forecast for your planned departure, and don’t be afraid to



Benjamin says that topping up fuel tanks after landing will minimise the chance of condensation forming if the aircraft is going to be left for some time. It will also add mass to the aircraft providing stability in wind.

change your departure date – or time – to suit. Never put yourself in a position where you feel pressured to fly in poor weather, simply because of passenger demands, or having to return your aircraft. Decisions made under pressure can have disastrous results.”

For more information, read *Secure Your Aircraft*. Email [info@caa.govt.nz](mailto:info@caa.govt.nz) for a free copy. ■



Engine blanks prevent nesting birds and windblown dust and dirt damaging the engine.

# Microlighting Across Australia

Palmerston North microlighter, Jim Fordyce, joined four Aussies crossing Australia east to west and back to the east in August 2014. Twenty-six days, 81 flying hours, 4581 NM, 45 landings. Here, his friend, New Zealand expat Rogin Taylor describes the expedition's meticulous safety preparations.

**T**he departure of three recreational aircraft from The Whitsundays at 8 am on Monday 28 July 2014 was the culmination of a year of fastidious planning.

That trio was made up of my Zenair 701 with an 80 hp engine, a Savannah with a 100 hp engine, and a Kitfox 4, also with a 100 hp engine. Joining us on the return leg was a Jabiru 230 and a 'Bushpig' – a homemade mixture of various STOL aircraft.

All the aircraft had been given the equivalent of a 100-hourly maintenance overhaul: oil, filters, tyres, bearings, seals, and suspension.

On my microlight, I replaced the bungee cord, and the water and oil radiator hoses. I checked, cleaned, and oiled every moving part of the plane. We each carried a tool kit specific to our own aircraft.

Safety equipment included an EPIRB with GPS capability, five litres of water and simple food for 24 hours. Anticipating a possible out landing, or separation from the rest of the group, each plane was self-sufficient and carried essential items.

Every microlight had the ability to recharge phones and iPads using on-board inverters and USB chargers, ensuring navigation and communication options were kept viable.

We looked after each other to make sure everyone got airborne each day and arrived safely. It was reassuring to know that we would not leave anyone behind or stranded, in the event of mechanical problems.

Jim Fordyce (right, pictured here with Rogin Taylor) says their luggage was accurately weighed and the centre of gravity calculated to ensure the equipment was within aircraft limits.

'The next test was to ensure the equipment could be safely stowed in the aircraft luggage locker.'



In the end, the most serious breakdown was a flat tyre during taxiing, which was repaired with a new inner tube.

Before each day's flight there was a confirmation briefing of our destination, waypoints en route and, if we had internet access, a weather check via NAIPS – an Australian system providing NOTAMS, MET, and location briefings, and allowing electronic flight plan submission.

Altitudes ranged between 4500 and 9500 ft depending on the best height for the tailwinds, or to avoid turbulence and terrain.

Radio communication was maintained and monitored; we checked on each other's height and location about every 15 minutes, thus creating our own SARTIME safety net.

Flights were usually about two hours or less before a coffee/tea, fuel or lunch break, ensuring relaxed fatigue-free piloting.

The longest flights were over the Tanami and Simpson Deserts, three hours between fuel stops.

Speaking of fuel: I stuck (with Velcro®) a digital stop watch to the instrument panel. That saved me having to remember to record the time of departure and working out the time flown,

so I could gauge fuel usage – a quick glance at the stopwatch gave me the answer immediately.

The route followed main roads wherever possible. They were often unsealed and remote, but would have allowed easier retrieval or assistance should it have been needed. However, there were numerous cattle stations with good airstrips that could have been used in an emergency. They are not marked on any maps or navigation programmes.

We chose August due to predominant high pressure areas over central Australia that would give tailwind assistance to our planes. The route was planned to take advantage of the anticlockwise winds associated with those high pressure areas.

With the exception of just one day's travel where we had to backtrack for fuel, the group enjoyed good tailwinds for the 26 days of flying.

Every pilot on the trip used OzRunways for their daily navigation. It proved to be extremely easy to use and far exceeded my expectations of a navigational programme.



Jim says the fliers were sometimes unable to refuel at airfields.

"We would have to walk for up to three kilometres in the dust and heat to the nearest roadhouse. We bought enough fuel for the following day's flight plus a one-hour safety margin."



We all had secondary GPS and hard copy maps but I found I didn't need to refer to anything other than OzRunways during the whole trip.

Country strip owners, roadhouse airstrip caretakers, and organisations that looked after regional and community airstrips were all contacted regarding landing, availability of fuel and food, and other provisions.

The publications *ERSA* (En Route Supplement Australia), *Country Airstrip Guide*, and the *AOPA Pilot Touring Guide*, were used during planning.

All planes and pilots made it safely due to great planning, good preparation and good continual communication.

## Necessaries

**Food:** Salt, pepper, two litres of water per day per person, instant soups, noodles, biscuits, 3-in-1 (coffee, sugar, creamer) or tea bags, raisins, etc. Additional daily food was bought when we refueled. For meals, we took advantage of roadhouse fuel stops and pubs that were within walking distance of our landing strip.

Avoid taking sealed bags of potato chips – they can harmlessly explode at altitude, but give you a terrible fright, not to mention the mess!

**Utensils:** Forks, knives, spoons, one sharp knife, detergent, scourer, paper towel, tongs, frypan, pot, spatula, plastic mugs, matches, plastic bags for garbage. A metho stove is recommended because it is safer than gas, heats more quickly and doesn't blow out in the wind.

**Medical:** Paracetamol, sticking plasters, Betadine®, bandage, scissors, antihistamine, insect repellent.

**In the tent:** Sleeping bag, ground protection, pillow, and a waterproof plastic tent cover for night condensation, or rain.

**Clothes:** In addition to the obvious, a jacket and pants with numerous easily accessible pockets, plastic rain poncho, hat, and sunglasses. Be warned, ground temperatures ranged from below zero to 39 degrees. I bought plastic (medical) shoe covers because morning grassy strips are usually wet from overnight dew, and the covers saved me flying all day in wet shoes and socks.

**Plane:** Pegs with tie-down ropes, hammer (with fluoro reflective tape on the handle), spare coolant, spare top-up oil,

a basic set of small tools with tape, spare tyre tube, puncture repair kit, bike tyre pump, empty fuel container, fuel funnel, rags, glass cleaner, 12v USB adaptor for charging electric items, small 12v inverter, small bottle to check fuel, fuel dipstick, Velcro – I took 300 mm and used it all – contact adhesive and epoxy. The 20-litre collapsible fuel bag proved very worthwhile. Highly reflective tape was placed on the tail, wings and engine cover.

**Other:** Headband with LED light, small LED lights on neck halcyards. It is a good idea to put small pieces of reflective tape on items that may be lost in the grass (like the hammer).

**EPIRB:** I registered the EPIRB and advised the relevant authority of our departure date, route, and duration of our trip.

**Navigation:** For the trip, I installed OzRunways on an iPad and a moving map programme on an Android tablet. In addition, I installed OzRunways and an additional navigation app on my iPhone. As another backup, I carried paper maps.

The iPad with the navigation programme was attached to the top frame above the windscreen with Velcro, which proved to be an ideal position. Roofing insulation was glued to the back of the iPad to prevent it overheating from the sunlight coming through the front windscreen. A suction brace was secured to the windscreen and attached to the back of the iPad with Velcro to stabilise the screen.

## Further Reading

The GAP booklets *Weight and Balance*, *Survival*, and *Secure Your Aircraft* can be downloaded from the CAA web site, [www.caa.govt.nz](http://www.caa.govt.nz). Email [info@caa.govt.nz](mailto:info@caa.govt.nz) for printed copies. ■

Jim Fordyce was an RNZAF engineer for 30 years. During that time, he built Taylor Monoplane ZK-CQE, and restored an Avro 626, currently in the Air Force Museum at Wigram. He also built Jodel D11 ZK-ECU, and two Delta Hovey biplanes, ZK-FSN and FSM. He was an independent aircraft inspector and repaired privately owned gliders, and those for the Manawatu/Wanganui Gliding Club and the Ruapehu Gliding Club. He held licences to work on metal, wood and fibreglass aircraft. In 1985 he received an MBE for services to the RNZAF.



Overnight camp on the edge of the Simpson Desert.

"The days were lovely and warm but the nights very cold, one down to -2 degrees," says Jim. "One morning our aircraft was covered in light frost. Most nights we sat around a campfire which was sometimes used to cook the evening meal. The fire would keep us warm as we discussed the next day's flight and plans."

# Skydiving Out of a Helicopter

What could be more exhilarating than jumping out of a plane? How about jumping out of a helicopter? There are some rules that need to be followed to ensure compliance and that everything goes safely.



Helicopter parachuting really came to public attention in 2012 when 'Queen Elizabeth II' and James Bond parachuted from an AgustaWestland AW139 helicopter into the opening of the 2012 London Olympics. As awesome as it looked, given the costs involved, demand for such a jump is expected to be more 'niche' than fixed-wing skydiving, and reserved for the biggest adrenaline junkies.

With this market developing however, there are important rules and procedures that must be taken into account by any helicopter operator getting into this business – whether you are being leased for the flights or running it yourself. The Company Operations Specifications will require amending to also include parachute operations.

"Just like you have standard operating procedures for heli-ski, sling, or a monsoon bucket, you must have them for skydiving," says CAA Flight Operations Inspector, Mac McCarthy.

"What would the procedure be if tandem skydivers exited the helicopter and got caught on the skids? Or in the case of James Dobb in the UK in 2013 who, in a video that went viral, had his

parachute accidentally deploy between the skid and airframe with the potential to open into the tail rotor blades. Both are unlikely to happen, but you need to have procedures in place to ensure that the operation can be conducted safely."

Anyone considering parachute operations needs to be aware of Part 115 *Adventure Aviation – Certification and Operations*. Operators certificated under Part 135 can do parachute operations but must meet any requirements under rules 61.651, 91.705, 91.707, and Part 115. Authorisations from a parachute Part 149 organisation will also apply to the skydivers and the parachute landing area.

## 105.5 Persons making parachute descents

(a) Except as provided in paragraphs (b) and (c), a person making a parachute descent must:

- (1) hold a parachutist certificate; and
- (2) comply with the privileges and limitations of the certificate and any ratings; and
- (3) comply with the operational standards and procedures contained in the parachute organisation's exposition.



Photo courtesy of Skydive the Beach and Beyond.

The two parachute Part 149 organisations are the New Zealand Parachute Industry Association (NZPIA) and the New Zealand Parachute Organisation (NZPO).

“Operators need to ensure that employees are appropriately qualified and trained,” says Mac, “and that any equipment is appropriate to the task and properly maintained; and that key people are fit and proper to undertake their responsibilities.

“This applies whether you are running the operations yourself, or your helicopters are being leased to run the flights on behalf of a parachuting company.”

If you are looking at starting, or have been approached in relation to these operations, don’t forget the CAA is here to help. If you have any doubts or questions, get in touch with the Flight Operations Adventure Aviation team, tel: 04 560 9457, or email Mac.Mccarthy@caa.govt.nz, or Mark.Houston@caa.govt.nz if it is about jump pilot ratings.

The Civil Aviation Rules are available on our web site, [www.caa.govt.nz](http://www.caa.govt.nz), under “Rules”. ■

## BFR – Are You Current?

A Biennial Flight Review (BFR) is a flight review every two years. It gives you the chance to maintain and improve your skills.

**D**uring a BFR, the instructor reviews your current level of knowledge and proficiency. It is not a test where you have only one opportunity to pass. If you’re not up to scratch, you’ll get a chance to practise until you are.

The BFR is also an opportunity for you to confirm with your instructor that you are up-to-date with any changes to airspace and rules that may have been introduced since your last BFR.

Roger Shepherd, CAA Investigating Officer ARCs, says, “As a pilot, you should be aware of when your BFR is due and make sure you complete it on time. Your instructor will send the paperwork to the CAA after the successful completion of your BFR.”

“Don’t leave it until the last minute,” he advises. “The review may take a number of flights. The rules allow you to complete your BFR 60 days before it is due to expire and it is deemed to have been completed on the required date.”

You must complete the BFR to be able to continue to use the privileges of your licence, unless exempted by one of the conditions in rule 61.39(b). If your BFR has expired, you can fly only as a student pilot (solo and under supervision).

The CAA has produced a free bookmark that slots into the pilot logbook. This bookmark has a space to note down your BFR renewal date – email [info@caa.govt.nz](mailto:info@caa.govt.nz) for one.

Also, brush up on the techniques required for the BFR by referring to the *Flight Test Standards Guides*, available on the CAA web site, [www.caa.govt.nz](http://www.caa.govt.nz), “Pilots”.

### More Information

Rule 61.39 *Biennial flight review*, available on the CAA web site, “Rules”.

Vector article, Biennial Flight Review, Nov/Dec 2008. ■



# If You're in the Circuit, **Speak Up!**

Airways is on a quest to improve runway and circuit safety by getting air traffic controllers and pilots speaking to each other – properly.

Controllers want pilots to actually report as they cross reporting points, respond unambiguously to directions, let ATC know if they lose sight of the preceding aircraft in the circuit, or if an instruction confuses them, or if they get lost because the aerodrome is unfamiliar.

The message is: "Speak up!"

"Some runway occurrences in the last few years have been quite nasty," says Northern Towers (Hamilton, Rotorua, Napier, Gisborne) Manager, Michele Dumble.

"Things like aircraft cutting off those preceding them in the circuit. The pilots have lost sight of those ahead, not said anything to ATC, assumed they were next to land and have just gone for it."

Chief flying instructors at a CAA seminar in Wellington in October 2014, were told by Airways standards specialist, Pete Roberts, that pilots who've lost visual contact with preceding traffic need to let controllers know.

"They also need to make sure the downwind call is made and that they don't turn base if the position of the traffic they are following is not known. Extending downwind and advising controllers would take a whole lot of heat off ATC!"

Michele Dumble, who is one of the prime movers behind the push to get ATC and pilots communicating more effectively, says air traffic controllers will soon be getting their own runway and circuit operations safety message.

"We've prepared a video of Pete's presentation and that will be delivered to chief controllers during 2015.

"ATC need to give *clear* instructions, and in a timely manner that allows pilots – particularly inexperienced pilots – plenty of time to respond. Controllers also need to be proactive in dealing with a developing situation, and not just 'monitor' it."

Pete Roberts agrees, saying that events sometimes occur because controllers have not 'painted the picture' for pilots as fully as they should have.

"Some pilots, for whatever reason, may not receive a sequence report prior to hitting the traffic circuit, but they still just barrel on in. They must insist on receiving a sequence."

He also says that at critical times controllers have to eliminate distractions, such as routine aerodrome tasks, and focus on the "right thing at the right time".

"Runway and circuit operations safety is a combination of ATC and pilots carrying out their joint responsibilities to the absolute best of their pooled abilities."

Michele thinks some problems arise from the fact that, while training organisations *are* delivering runway and circuit safety messages, their coverage is cursory, with students regurgitating them for exams and forgetting them in practice.

"I think pilots believe controllers will do more to separate aircraft than is currently their role, so the pilots are not carrying out their obligations of 'see and be seen', sequencing, and spacing."

Chief Controller at Palmerston North, Bill Penman, says some of the things he has witnessed are "enough to make your eyes water". He agrees that good runway practice is probably not reinforced enough during training.

"They maybe get the syllabus, go through it, tick it off and it's done, but there isn't enough emphasis on what the pilot's responsibility for runway safety actually is."

Bill says one of the most innovative and simplest ways he has seen instructors teach circuit practice is chalking a runway on the flying school tarmac.

"The students are walking the circuit as aircraft, and the instructor is the controller. It's really effective!"

Michele Dumble says a big push at present is professional RT. She and Bill Penman agree there is an increasing number of read-back issues.

"They're becoming short-cut, and sometimes people don't hear them or request them. Sometimes when clearances are given and they are not read back, or are read back incorrectly, the controller does not pick up on that."

Deputy Chief Flight Instructor with Massey's School of Aviation, Paul Kearney, says he's not personally aware of a rise in the number of runway safety events although he admits he can speak only for his own area.

But he agrees about sloppy RT, saying he's noticed an increase in the inappropriate use, by pilots with a few hours behind them, of the word "copy".





"If ATC says something like 'follow Charlie-Bravo-Zulu, number two', instead of the pilot responding with something coherent, they imitate airline pilots and say 'copy traffic'.

"What does that mean? They understand and are looking out for the aircraft ahead? They have seen and are following that aircraft? They understand the instruction but cannot see the preceding aircraft?

"And ATC are not taking them up on that confusing response. Many controllers assume such a communication means 'have aircraft in sight and am following' and they relax. But that may not be the case at all."

Paul says from the pilot's viewpoint, when things get busy, ATC uses what he calls tight and regulated "proceduralised" language.

"That makes students quite reluctant to engage with ATC, because they are anxious they don't have the right lingo.

"I teach my students a line to use so they feel less foolish if they are confused about an instruction," he says. "It's *I understand you want me to do such and such...* And ATC will correct them if they are wrong.

"I also tell them if they need to talk to ATC and they can't remember the correct phraseology, just hit the button and talk in plain language.

"ATC would rather hear from them like that, than not at all because they're embarrassed they can't remember the standard phraseology."

Bill Penman says one of the best things pilots can do is bone up on Advisory Circular AC172-2 *Air Traffic Services – Aerodrome Air Traffic Control*, available on the CAA web site.

"It's good commonsense stuff and will help pilots better understand their own role, by better understanding the role of ATC."

Bill believes some pilots might be put off when, for instance, they ask for clearance, and ATC may respond sounding a bit officious.

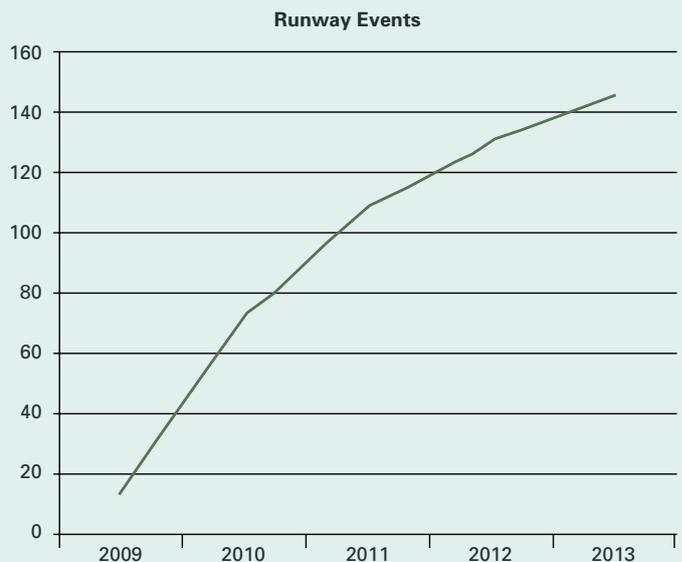
"That's just because we've got busy and don't have time to chat. We tend to sound fairly sharp and to the point and we're using standard phraseology that doesn't have a lot of feeling in it.

"But we do encourage pilots to come to the tower and say giddyay. If we're not busy, we're always on for a chat."

Paul Kearney agrees. "It's one of the best things I do with my students – introduce them to the controllers. And anyone on a cross country should land and head to the tower.

"You should always get a friendly reception and it's good for the controllers to realise there are human beings at the other end of the radio, and vice versa."

## Trends for Runway Safety Events



Airways is concerned about the steady increase in runway safety events since 2009, some of which have been triggered by poor communication between ATCs and pilots.

## Further Reading

Learn how to be a more effective RT practitioner by taking the CAA online course *Plane Talking*, [www.caa.govt.nz/avkiwi](http://www.caa.govt.nz/avkiwi).

The GAP booklet *Plane Talking* can be downloaded from the CAA web site, [www.caa.govt.nz](http://www.caa.govt.nz), or for printed copies, email: [info@caa.govt.nz](mailto:info@caa.govt.nz).

Advisory Circulars on the CAA web site:

AC91-9 *Radiotelephony Manual*

AC172-2 *Air Traffic Services – Aerodrome Air Traffic Control* ■

# Achoo! Hay Fever in the Air

Whether as a passenger cruising across the Pacific in a 777, or piloting a Cessna for a short hop over Cook Strait, many of us have experienced the discomfort of flying with congested sinuses. It's not just uncomfortable – it can have serious effects, and that's why flying when suffering from hay fever is best avoided.

## What is Hay Fever?

Hay fever isn't actually a fever, but rather an allergic reaction or inflammation of the nasal airways. The name came about from an incorrect theory that the symptoms were caused by the smell of fresh hay. And while hay, grass, and pollen are the main triggers, they're not the only causes. Perfumes, dust mites, mould and household pets can also cause symptoms.

With pollen being a major trigger, spring and summer are peak times for hay fever in New Zealand. It's estimated that one in five Kiwis suffer from hay fever. However, for many it can be more than a seasonal occurrence, with half the sufferers experiencing symptoms for more than six months, and a fifth having symptoms year round.

## Symptoms

The most common symptoms are a blocked and runny nose, sneezing, and itching in the back of the throat, eyes or nose.

Other symptoms can include:

- » a watery discharge from the nose
- » a red, pebbly lining in the lower eyelids
- » the need to clear your throat
- » mouth breathing
- » snoring
- » headaches due to pressure inside the nose and sinuses
- » earaches, ear infections, or hearing loss
- » dizziness or nausea related to ear problems.



## How Hay Fever Affects Pilots

There are three areas of concern for pilots with hay fever.

The first is the actual symptoms themselves. Flying when you have hay fever symptoms isn't just uncomfortable, it is distracting. The sneezing and itching can really affect your concentration, especially at a time when you need to be on your game, and blurred vision certainly doesn't help.

A blocked nose and sinuses can lead to barotrauma. This is trauma due to blocked sinuses, or Eustachian tubes (which go from the nose to the middle ear).

"Eustachian tube dysfunction can result in an inability to equalise the middle ear pressure," says Claude Preitner, CAA Senior Medical Officer. "This generally results in pain, sometimes severe. It may also cause a tympanic membrane perforation (burst ear drum) or alternobaric vertigo – when the pressure differences can affect the balance system."

The second is how the symptoms affect you at other times. As Claude points out, hay fever can affect sleep. "A blocked nose can cause obstructive sleep apnoea and resulting fatigue."

Fatigue is a very important issue for pilots. For more information see the January/February 2014 issue of *Vector*.

Thirdly, commonly used medications don't mix with flying as they can affect mental function, more so when combined with hypoxia. For example, drowsiness caused by medication may be increased at altitude.

## Treating Hay Fever

Hay fever can be treated effectively with tablets, nasal sprays, and eye drops, but not all treatments are acceptable to the CAA.

Claude says that hay fever is sometimes not treated properly. "The two main treatments are nasal steroids and antihistamines; common nose drops should not be used as they actually make things worse."

Nasal steroids are effective but need to be used regularly during the troublesome period of the year – usually a month or two. A common mistake is to stop treatment as soon as the symptoms resolve. This only results in the symptoms recurring within days. Another mistake is not to persevere with treatment because there is no immediate response. Nasal steroids take several days to work. So you need to be patient.

Once the symptoms improve, it is often possible to reduce the dose, for instance from twice daily to once daily, depending on the preparation used. Nasal steroids can have side effects too, including irritation and nose bleeds, and the lowest effective dose is preferable.

Antihistamines are the other common treatment for hay fever, although most cause sedation to various degrees. Only three are permitted by the CAA, following a few days' trial period on the ground. They are loratadine, desloratadine, and fexofenadine which have been proven not to create drowsiness. All the others, including cyclizine, which is probably the most commonly prescribed, still have some sort of sedating effect, despite claims to the contrary.

"Because of this sedating effect, we insist that none of these, except for loratadine, desloratadine, and fexofenadine are taken within 48 hours prior to flying or controlling air traffic," says Claude.

We suggest that before flying, you try the recommended dose of any acceptable treatment for a few days, to ensure there are no side effects.

Claude also says that if people have chronic hay fever symptoms that aren't being controlled, then this should be reported to the CAA. That can be done by emailing [med@caa.govt.nz](mailto:med@caa.govt.nz), calling the Aviation Medicine Team on 04 560 9466, writing to the CAA, or by contacting your medical examiner.

Properly managed, hay fever shouldn't be a barrier to flying. ■



# The Not-so-safe **Safety Belt**

Given that seat belts are there to make things safer, it seems ridiculous that there have been four reported instances where the seat belt has led to a potentially serious occurrence in a helicopter. So what is causing this and how do we stop it happening?

**T**he problem is caused by the seat belt buckle for the passenger's seat lying to the left of the collective lever. If that belt isn't done up, it can slip and fall between the lever and the rear stop plate, making it impossible for the pilot to increase collective pitch because the buckle is preventing the collective lever moving backwards.

The best fix, according to Neil Scott of Garden City Helicopters, is to have all the belts done up. "But if passengers get out and leave the seatbelt undone and the pilot's hovering on the side of a hill where they can't let go of the controls to do the belts up, then this situation could occur.

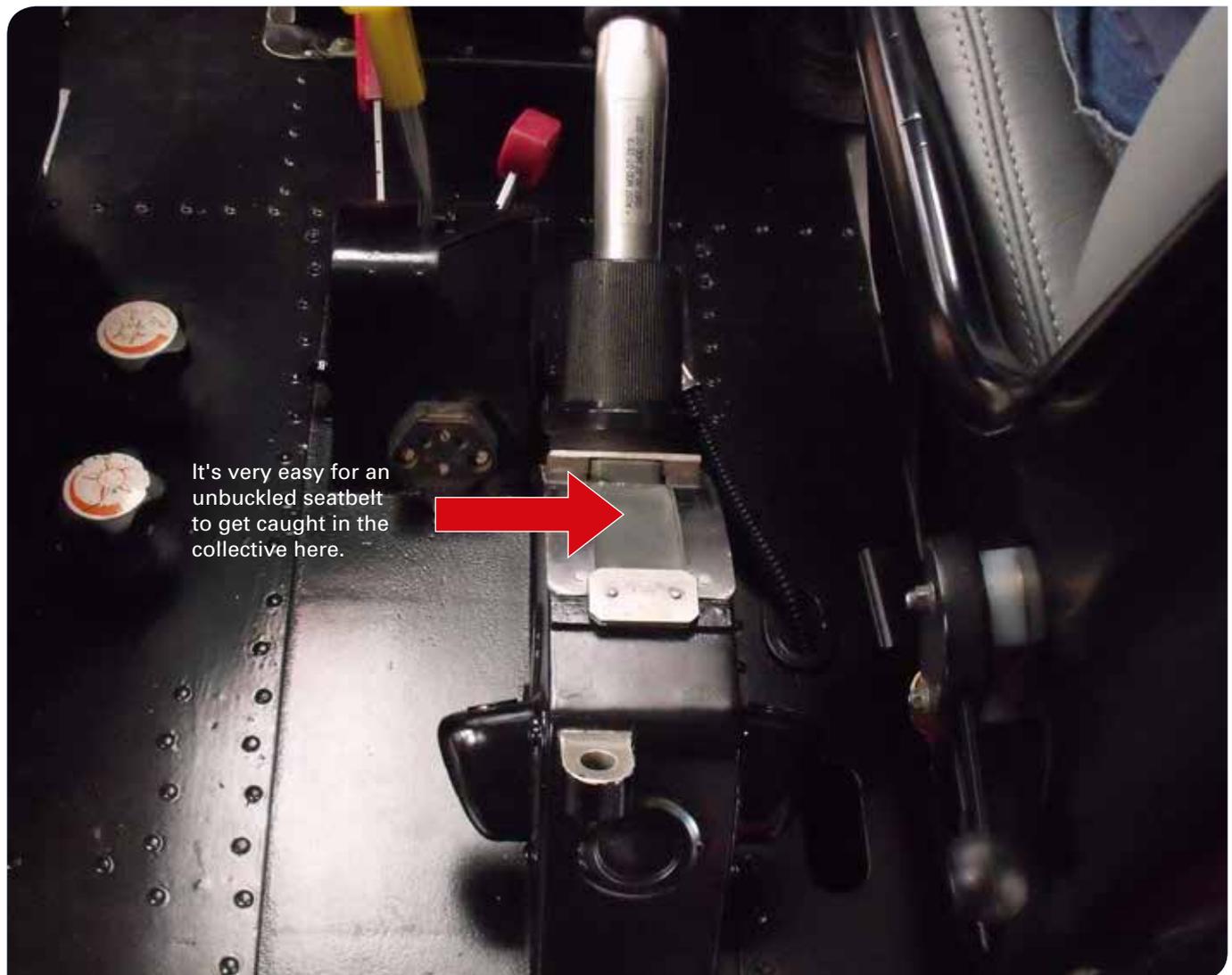
"The buckle only has to fall off the adjoining seat and into the notch between the collective lever and the rear stop plate.

Once there, the only way to get it out is to lower the lever and if you're close to the ground, that's not really an option. So awareness of the issue is key."

One pilot who experienced such a situation recently was Toby Wallis from Alpine Helicopters in Wanaka.

"I would've been at 250 feet up and 300 metres back from the pad, and doing a gentle right turn into it. As the helicopter slowed, I was increasing the collective but it got to a point where I couldn't pull any more and the sink rate increased dramatically."

He rolled the helicopter away from the hangar, applied forward cyclic trying to get through translation, but there wasn't enough power to fly away or hover.



Toby says he knew what it was straight away but didn't have time to drop the collective and release the buckle. "I had already done the turn in and was pulling the power in. It happened in that critical transition going from flying nicely to a huge rate of descent. I managed to arrest a considerable amount of descent to reduce the impact of landing.

"I was lucky for three reasons," adds Toby. "Firstly, I was able to level the helicopter and get it away from the hangar. Secondly I had a huge stretch of run-out grass in front of me, and thirdly it was wet and soft so when I touched one skid first it took impact out of it.

"I believe that guard installation should be mandatory," says Toby. "It's all very well saying 'Seatbelts must be done up when not in use' but it only takes one time – you could be distracted, or a passenger climbs out and leaves it undone – for something to happen."

Alpine Helicopters have now fitted guards to stop this happening.

Toby says they're essential, "I think this happens more than we realise. It will happen again, and it's only a matter of time before it ends more seriously."

Toby says he was "very lucky" for the jam to have happened at an aerodrome where the terrain was flat. "If this had happened during the likes of a heli ski operation where you do ridge landings it could've been a very different ending!

"The other instances I'm aware of have all been situations similar to mine, with clear run-outs where they can fly out and prevent something more serious – we've all been incredibly lucky."

While it was a pretty scary ordeal for Toby, who knew how much worse it could be, his passengers were oblivious to the situation, although one of them said something along the lines of, "That was a bit of a rough landing!"

If you're flying a helicopter, make sure you are aware of whether your helicopter could be affected, and make sure you follow your manual's procedure about having unused seatbelts done up. ■



A pilot struggles with raising the collective after a seatbelt has fallen between the lever and rear stop plate.



Photos supplied by George Minors

George Minors after flying solo for the first time, 31 March 2008.

## Pilots as **Lifelong Students**

Richard Pearse probably didn't think when he made his first powered flight of 320 metres in March 1903 that just over 100 years later, jets capable of carrying more than 800 people would be scooting around more than half the earth's circumference.

**W**hile technology continues to shape aviation, one of the key ingredients has remained – the pilot. And perhaps it's the mind of the pilot that has evolved the most as we continue to learn more about flying.

*Vector* caught up with three pilots at different stages of their careers to see how they got to where they are now, and what they continue to learn.

Jeremy Yardley, 39, started working as a first officer on Jetconnect's fleet of Boeing 737s in July 2014. That came after seven years at Vincent Aviation, in Darwin and Wellington, flying turboprops. He had 4500 flying hours before joining Jetconnect and is now approaching 5000 hours.

George Minors, 26, is a graduate of the Bachelor of Aviation Studies programme at Massey University. He now flies Beechcraft 1900s for Air New Zealand. A one-hour trial flight was all it took to hook him into a career in aviation.

Hayden Corney, 30, is a recreational pilot who first took to the air in March 2009 and flew on and off for the next three years. While other priorities meant that he hasn't flown since 2012, he is looking forward to getting back into the cockpit soon.

Jeremy had wanted to be a pilot ever since he was young.

"I did my PPL at Mainland Air in Dunedin in 2002 on weekends, then took the plunge, stopped work and, over a year, did the

full-time course covering CPL, instructor rating, and multi-engine rating.

"Following that, I started work at Mainland Air flying Cessnas and graduated through to Chieftains, then on to Vincent Aviation's 1900s and Saabs for seven years, before moving to Jetconnect and the Boeing 737s."

The one constant in all of this for Jeremy was the continual learning involved.

"You'll be flying with another pilot and they'll mention something different or new, and you then need to check it for yourself in your manuals.

"The environment we work in can change quickly due to weather, ATC clearances, restrictions, or tracking requirements. This can cause some heavy workloads and requires pilots to think on their feet and adapt quickly to changes.

"Whether you are a first officer or a check and training captain, being open to others' ideas is important in supporting each other and making the right decisions," says Jeremy.

"That increases our knowledge and skills and as a result keeps us constantly learning in an ever-changing workplace."

George hadn't always dreamed of flying planes. "I had no idea what I wanted to do. I had studied physics, maths, computing, electronics, but no career path shouted out to me. Then a friend said he wanted to be a pilot, and it really got me thinking.



George, with Air New Zealand's Chief Pilot David Morgan, at the Wings Ceremony at Massey University School of Aviation, 10 May 2010.



George having just passed his check to line as a first officer at Eagle Airways, Air New Zealand, 16 October 2013.

I went for a trial flight to see what it would be like, and that was when I got hooked. It incorporated everything I love about technology, physics, and the thrill of flying that every pilot knows."

George chose Massey University's programme so that he could have a Bachelor's degree to go with his commercial pilot licence.

"The workload is very high with up to six papers a semester, and we were taught beyond the minimal requirements for a typical pilot licence. It's worth it in the end as having knowledge and understanding beyond the minimum makes you all the more prepared for your career.

"Massey also set me up for a lifetime of learning. Of course, that's something that comes with being a pilot, as well as the impact strict schedules and flexible hours takes on your social life!"

Staying up-to-date with the industry is important for all three pilots. George is constantly reading aviation news online and in magazines. "I love hearing about new technologies and innovations."

George says that as an employee in the aviation industry you are constantly being challenged and expected to provide the highest standard of aviation practice. "The whole industry is changing all the time. This means you must be flexible and adaptive to anything that gets thrown at you. It encourages you to work hard and succeed, and this success spills into every area of your life."

For Hayden, the meteorology section of the PPL syllabus was a surprisingly interesting subject. "The courses offered by the Wellington Aero Club to prepare for the met exams were excellent. I thought I knew a fair bit about weather, but as pilots we have to learn so much more."

Met is one of the most important areas of aviation to get right. Head along to this year's AvKiwi Safety Seminar, *Wx Matters* – see the back cover for the first schedule.

"There is always something to learn, no matter how experienced you are," says George. "The AvKiwi seminars are a great way to stay current. At Massey we halted all flying and classes so everyone, including instructors, could attend!"

All three agree that technology is one area where pilots really need to keep up-to-date.

Hayden says, "I think electronic flight bags being so widely available will really help pilots, so long as they don't rely on them too much. They can take some of the navigation workload from the pilot and let them focus on other tasks."

Jeremy says, "There are constant changes to VFR flying and airspace. But when the majority of your work is IFR, those sort of things don't have as big an impact on you. So you really have to make sure that you are aware of changes in the area where the bulk of your work is. Staying up-to-date is essential."

Hayden's looking forward to returning to flying soon. "Time hasn't really allowed me to keep up with it, although I do still play a lot of flight simulator. While it's not the same as actually being in the air, I find it helps with things like practising radio procedures."

While Jeremy, George, and Hayden have all had very different paths and experiences in aviation, one thing they all agree on is that nothing compares to flying, and as a pilot you are a student for life – learning something new every time you take to the skies.

Aviators who know their limits continue learning, and practise regularly, to ensure that we can all be safe in the air. ■

# Aviation Safety Coordinator Course

**Auckland**

**26 to 27 February 2015**

Sudima Auckland Airport Hotel,  
18 Airpark Drive, Airport Oaks,  
Mangere, Auckland

The number one function of any company is business success – safety is critical to business success.

If your organisation operates commuter services, general aviation scenic operations, flight training, sport aviation, or engineering, you need an Aviation Safety Coordinator.

Attend this free two-day course to train new aviation safety coordinators, and to refresh and re-inspire existing ones –

- » you will get a comprehensive safety manual;
- » access to all the latest CAA safety resources and support; and
- » lunch is provided (accommodation, transport and other meals are not provided).



## Clarification

### “Height of Safety” Vector September/October 2014

The way we paraphrased rule 91.311(a) *Minimum heights for VFR flights* could be misleading, and we apologise for any misunderstanding.

Rule 91.311(a)(1) applies specifically to the minimum heights for VFR flights over any congested area of a city, town or settlement, or over any open air assembly of persons. The minimum height that must be maintained when flying over these areas is 1000 feet above the surface, or over any obstacle that is within a horizontal radius of 600 metres from the point immediately below the aircraft. If a pilot is operating an aircraft over one of those areas, and is within 600 metres of a 350 feet tall radio tower, then they must observe a minimum height of 1350 feet.

The primary reason for this rule is due to the heightened safety risk to people on the ground when flying over these higher density areas. The lower height requirement of 500 feet above the surface, or other specified object, applies when flying over any area other than 91.311(a)(1). Accordingly, if an aircraft was operating 200 metres away from a rule 91.311(a)(1) area, but within 150 metres of a radio tower, then rule 91.311(a)(2) would apply. In other words, the pilot would have to maintain a minimum of 500 feet above the radio tower.

We must also repeat that the CAA does not consider the presence of a low cloud base to be a bona fide reason under rule 91.311(c) for flying below the specified minimum height. ■

## Impaired Colour Vision – Consultation Extended

A General Direction is a notice issued by the Director of Civil Aviation to specify the requirements for aviation medicine-related matters for applicants of a medical certificate.

The General Direction for impaired colour vision has had the consultation period extended to 5 pm Monday 01 April 2015.

The document and form for submissions are on the CAA web site, [www.caa.govt.nz](http://www.caa.govt.nz), “Medical – General Directions”. ■

# CAA Safety DVDs

Our safety DVDs are great for refreshing awareness on a number of flying topics. Here's a few examples:

*Mountain Flying* will help pilots visualise essential mountain flying concepts before they begin training with an appropriately qualified instructor. Filmed in the Wanaka, Queenstown, and Milford Sound areas, and packed full of spectacular air-to-air and in-cockpit footage, this DVD shows mountain flying from multiple perspectives.

*Safety Around Helicopters* provides general safety information for anyone who works around helicopters. There's an introduction with general information for everyone, and specific modules: Going Bush, The Mountains, Industry, All at Sea, Corporate and Tourism, and Rescue on the Land.

If you plan your flying to skirt around controlled airspace, then *VFR in Controlled Airspace* is a 'must see'. It debunks the idea that flying in controlled airspace is complicated or intimidating. You'll hear a friendly air traffic controller explain procedures for a flight, and then two young pilots discuss the issues and fly the route.

The *Plane Talking* online radio course is available on CD. This course is very helpful for your radio training because it covers effective communication in a number of situations, including controlled and uncontrolled aerodromes. Audio examples of the correct phraseology will help you get it right first time. Also available online, [www.caa.govt.nz/avkiwi](http://www.caa.govt.nz/avkiwi).

See the full list of safety DVDs on the CAA web site, [www.caa.govt.nz](http://www.caa.govt.nz), "Safety Info – CAA Safety DVDs". You can borrow them from the CAA library, email: [info@caa.govt.nz](mailto:info@caa.govt.nz). You can purchase them from Video NZ, [www.videonz.co.nz](http://www.videonz.co.nz). ■



## Aviation Safety Advisers

Contact our Aviation Safety Advisers for information and advice. They regularly travel the country to keep in touch with the aviation community.

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Email: [Bob.Jelley@caa.govt.nz](mailto:Bob.Jelley@caa.govt.nz)

## How to Get Aviation Publications

### AIP New Zealand

*AIP New Zealand* is available free on the Internet, [www.aip.net.nz](http://www.aip.net.nz). Printed copies of Vols 1 to 4 and all aeronautical charts can be purchased from Aeronautical Information Management (a division of Airways New Zealand) on 0800 500 045, or their web site, [www.aipshop.co.nz](http://www.aipshop.co.nz).

### Pilot and Aircraft Logbooks

These can be obtained from your training organisation, or 0800 GET RULES (0800 438 785).

### Rules, Advisory Circulars (ACs), Airworthiness Directives

These are available free from the CAA web site. Printed copies can be purchased from 0800 GET RULES (0800 438 785).

## Planning an Aviation Event?

If you are planning any aviation event, the details should be published in an AIP Supplement to warn pilots of the activity. For Supplement requests, email the CAA: [aero@caa.govt.nz](mailto:aero@caa.govt.nz).

To allow for processing, the CAA needs to be notified **at least one week** before the Airways published cut-off date.

Applying to the CAA for an aviation event under Part 91 does not include applying for an AIP Supplement – the two applications must be made separately. For further information on aviation events, see AC91-1.

CAA Cut-off Date	Airways Cut-off Date	Effective Date
16 Feb 2015	23 Feb 2015	30 Apr 2015
16 Mar 2015	23 Mar 2015	28 May 2015
13 Apr 2015	20 Apr 2015	25 Jun 2015

See [www.caa.govt.nz/aip](http://www.caa.govt.nz/aip) to view the AIP cut-off dates for 2015.

## Report Safety and Security Concerns

Available office hours (voicemail after hours).

**0508 4 SAFETY**  
(0508 472 338)

[isi@caa.govt.nz](mailto:isi@caa.govt.nz)

For all aviation-related safety and security concerns.

## Accident Notification

24-hour 7-day toll-free telephone

**0508 ACCIDENT**  
(0508 222 433)

[www.caa.govt.nz/report](http://www.caa.govt.nz/report)

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

# Accident Briefs

More Accident Briefs can be seen on the CAA web site, [www.caa.govt.nz](http://www.caa.govt.nz), "Accidents and Incidents".  
Some accidents are investigated by the Transport Accident Investigation Commission, [www.taic.org.nz](http://www.taic.org.nz).

## ZK-JPH Rans S-7 Courier

Date and Time:	19-Mar-14 at 17:26
Location:	Caseys Flat
Nature of flight:	Private other
Pilot Licence:	Private Pilot Licence (Aeroplane)
Age:	62 yrs

During the takeoff from a riverbed, engine power was normal. At approximately 200 feet agl, the engine suddenly lost power. Due to the lack of a suitable landing area ahead, the pilot initiated a 180 degree turn with the intention of landing back on the portion of riverbed used for the takeoff. During the turn the aircraft stalled and landed heavily onto the riverbed. Emergency services were alerted via the Rescue Co-ordination Centre due to activation of the aircraft's ELT. The pilot received moderate injuries to his face and was transported to hospital.

Investigation failed to determine a definite cause for the engine power loss, however, from the damage observed to the propeller, it was evident that the engine was producing significant power when the propeller struck the ground. Therefore, the engine power loss had only been momentary in nature.

Although the aircraft is not fitted with carburettor heat, carb ice was thought unlikely as the engine was warm from a previous flight and so air temperatures within the engine compartment would probably have precluded the formation of ice.

The possibility of the presence of water in the fuel system could not be discounted. The aircraft was fitted with a gascolator as recommended by the manufacturer, water drains had been carried out by the pilot prior to the first flight, however no water was detected.

The aircraft fuel system filter utilised by the pilot was an automotive paper element type, he had used this type of filter for many years. When the fuel filter from the aircraft was examined, a drop of water was observed. It is possible, but it could not be positively determined, that a fuel flow restriction was caused by the paper element filter due to the presence of water.

RANS had previously identified that paper element filters may restrict fuel flow if contaminated with water. This apparently has become more of a problem when mogas which has an ethanol component is used. RANS Operational Alert 168 titled Fuel Filter, recommends that a filter recommended by a Rotax service centre be utilised. A Rotax maintenance provider was contacted who advised that the fuel filter that he recommends is a 10 micron filter with a metallic (bronze) type filter element, a paper element filter is not recommended.

Further investigation of the engine, which had been immersed in the river as a result of the accident, failed to find any defects which may have led to the momentary power loss.

[CAA Occurrence Ref 14/1158](#)

## ZK-HZL Aerospatiale AS 350BA

Date and Time:	19-Apr-14 at 17:27
Location:	Taupo
POB:	2
Injuries (Serious):	1
Damage:	Substantial
Nature of flight:	Air Ambulance
Pilot Licence:	Commercial Pilot Licence (Helicopter)
Age:	42 yrs
Flying Hours (Total)	2866
Flying Hours (on Type)	294

During a non standard approach to land over a line of trees a 'thump' was felt and heard from the rear of the helicopter by the pilot and crewman, followed immediately by several uncontrolled anti-clockwise rotations and pitch oscillations of the aircraft before it struck the ground heavily.

The helicopter tail rotor had struck the top of one of the trees during the final phase of the approach. The helicopter remained upright allowing the pilot to secure the engine and main rotor blades before exiting to assist the crewman.

[CAA Occurrence Ref 14/1695](#)

## ZK-EMD Gippsland GA200C

Date and Time:	20-May-13 at 10:00
Location:	Eketahuna
POB:	1
Injuries:	0
Damage:	Substantial
Nature of flight:	Agricultural
Pilot Licence:	Commercial Pilot Licence (Aeroplane)
Age:	40 yrs
Flying Hours (Total)	3190
Flying Hours (on Type)	2800
Last 90 Days:	126

The left main landing gear collapsed shortly after the start of the takeoff roll, causing the propeller and left wing to contact the ground. The maintenance provider reported the incident to the manufacturer, who was not aware of breaks in this area. The manufacturer also advised that their supplier of undercarriage legs was no longer making them. The maintenance provider intended to repair/rebuild the leg and return the aircraft to service. The maintenance provider also inspected the other leg and found a similar crack, which was also repaired.

[CAA Occurrence Ref 13/2684](#)

### ZK-HNA Hughes 369E

Date and Time:	27-May-13 at 0:01
Location:	Eglinton Valley
POB:	2
Injuries:	0
Damage:	Substantial
Nature of flight:	Ferry/Positioning
Pilot Licence:	Commercial Pilot Licence (Helicopter)
Age:	42 yrs
Flying Hours (Total)	8200
Flying Hours (on Type)	4575
Last 90 Days:	160

On arriving at the destination, after transit from maintenance, the pilot entered the helicopter into a descending left hand turn when there was a loss of engine power and the pilot initiated an autorotation. The pilot stated that there was no indication of an engine problem prior to the loss of power and he did not notice any engine surge or any noises/bangs prior to the power loss. Anti-ice was on and was working. The temperature was below 5 degrees C and there was a light drizzle. There was no snow at the time of the engine power loss, however there was snow fall in the local area of the flight path. The operator believed the incident occurred due to a loose union on the fuel supply line causing aeration, leading to an engine flame out. Maintenance investigation determined that all work carried out and documentation indicated that the union was not disturbed during maintenance action, however a torque check was carried out regardless. There was no evidence of mechanical damage or failure of the union. The root cause of the power loss could not be determined, however the maintenance organisation have since formalised their torque checking and dual inspection procedures and it is recommended that a vacuum check of the fuel system is carried out whenever maintenance is performed on the system.

CAA Occurrence Ref 13/2662

### ZK-PAT Piper PA-22-150

Date and Time:	23-Mar-14 at 17:15
Location:	Pukekohe
POB:	1
Injuries:	0
Damage:	Substantial
Nature of flight:	Private other
Pilot Licence:	Private Pilot Licence (Aeroplane)
Age:	63 yrs
Flying Hours (Total)	1104
Flying Hours (on Type)	500
Last 90 Days:	6

The engine failed after takeoff while climbing through approximately 300 ft agl. A forced landing was made onto a sloping paddock, with the aircraft overturning shortly after touching down. Damage was caused to the nose, propeller, left wing, and tail.

Maintenance investigation determined that the engine power loss was due to a piece of silver tape-like material lodged in the carburettor venturi. It could not be determined where the object had originated from or how it was ingested into the carburettor.

CAA Occurrence Ref 14/1200

### ZK-HNC Schweizer 269C-1

Date and Time:	20-Feb-14 at 13:25
Location:	Wairoa River Mouth
POB:	2
Injuries:	0
Damage:	Substantial
Nature of flight:	Training dual
Pilot Licence:	Commercial Pilot Licence (Helicopter)
Age:	44 yrs
Flying Hours (Total)	777
Flying Hours (on Type)	725
Last 90 Days:	125

While operating in L266 near the Wairoa River, the instructor was demonstrating autorotations. During the flare the tail rotor contacted the water, causing possible loss of tail rotor effectiveness. A landing was attempted, with the right skid sinking in to the soft mud and the rotor blades contacting the ground.

CAA Occurrence Ref 14/760

### ZK-TLC Boeing 737-3B7

Date and Time:	27-Jan-14 at 12:59
Location:	Honiara
POB:	3
Injuries:	0
Damage:	Substantial
Nature of flight:	Freight only

On 26 January 2014, an Airwork Boeing 737-300F aircraft landed at Honiara airport after a flight from Brisbane. Following touchdown, the aircraft rolled out for approximately 1200 m at which point the right hand main landing gear (MLG) gave way and the aircraft collapsed onto its right hand engine, continuing to travel approximately 400 m along the runway, before coming to a stop.

An investigation has determined that the cause of the MLG failure and resultant accident was the inappropriate rework (ie, machining and re-threading) of the tee-bolt fitting and the associated installation of a reduced size nut and washer, at the last overhaul in 2004.

CAA Occurrence Ref 14/271

### ZK-HKR Aerospatiale AS 350BA

Date and Time:	09-Jan-14 at 13:30
Location:	Richardson Glacier
POB:	5
Injuries:	0
Damage:	Destroyed
Nature of flight:	Transport passenger A to A
Pilot Licence:	Commercial Pilot Licence (Helicopter)
Age:	55 yrs
Flying Hours (Total)	2200
Flying Hours (on Type)	850
Last 90 Days:	40

While landing on the Richardson Glacier, the helicopter drifted sideways, causing a dynamic rollover. The pilot and four passengers were uninjured, walking to another helicopter that transported them off the glacier.

CAA Occurrence Ref 14/52

# GA Defects

GA Defect Reports relate only to aircraft of maximum certificated takeoff weight of 9000 lb (4082 kg) or less. More GA Defect Reports can be seen on the CAA web site, [www.caa.govt.nz](http://www.caa.govt.nz), "Accidents and Incidents".

## Key to abbreviations:

**AD** = Airworthiness Directive      **TIS** = time in service  
**NDT** = non-destructive testing      **TSI** = time since installation  
**P/N** = part number                      **TSO** = time since overhaul  
**SB** = Service Bulletin                 **TTIS** = total time in service

## Alpha R2160

### Fixed leg

Part Model:	R2160
Part Manufacturer:	Alpha Aviation
Part Number:	6032-011-001
ATA Chapter:	3200
TTIS hours:	3497.27

During routine maintenance inspection, the main landing gear leg upper strut was found with four cracks where the mounting bracket is welded into the cylinder. All cracks were adjacent to welds. The upper cracks were through the cylinder wall and about 12 mm long, and the lower cracks were at the weld edge.

The upper strut was removed and magnetic particle inspection was carried out to confirm cracks. The strut was replaced with a new item.

Refer to CAA occurrence 13/6568 for a similar defect.

[CAA Occurrence Ref 13/6565](#)

## Pacific Aerospace Cresco 08-600

### Wing spar external strap

Part Model:	PAC/CR/0317
Part Manufacturer:	PAC
Part Number:	08-20443-1
ATA Chapter:	5710
TTIS hours:	8006

Cracking of the wing spar external strap was found during eddy current inspection for compliance with STC requirements. The programme is to inspect ongoing airworthiness of straps over the threshold hours until defects are noted or the upper hour limit is reached. Cracking originated from a single fastener on RH side, immediately outboard of the wing-to-fuselage intersection, in the second row of fasteners aft of the leading edge. The probable cause is fatigue cracking caused by cyclic flight and landing loads. The part was retired as per programme requirements, and a new item installed.

[CAA Occurrence Ref 13/6221](#)

## Hughes 369D

### Output ring gear

Part Manufacturer:	MD
Part Number:	369D25127-11D
ATA Chapter:	6300
TSO hours:	4146.95

During scheduled maintenance on the main rotor transmission, a visual inspection of the main rotor output assembly with a 10-power magnifier found six of the 32 bolts broken, and a further nine cracked. All lockwiring on the bolts was still intact. The main rotor ring gear was also found cracked, with two cracks propagating from the bolt holes.

The cause of the cracking could not be determined. After the ring gear and bolts were replaced, the transmission was returned to service.

[CAA Occurrence Ref 14/851](#)

## Piper PA-34-200T

### Crankshaft

Part Model:	TSIO-360-EB1B
Part Manufacturer:	TCM
ATA Chapter:	8520
TSI hours:	36.2
TTIS hours:	1249.2

While in the cruise, the left hand engine made a thud and began to windmill. Checks were carried out IAW the QRH, and a restart attempt was made, but was not successful. The flight proceeded to NZDN with the left hand engine secured, and a safe landing was carried out.

Maintenance investigation found major internal damage within the left engine. The #1 piston had failed across the piston pin boss area and the con rod was broken and badly deformed. The crankshaft counterweights adjacent to the #1 and #2 cylinders had detached from the crankshaft. The #2 piston had also been badly damaged.

Due to the extreme level of damage within the engine, it was not possible to determine the exact cause of the damage, but possible initial points of failure are:

1. failure of the #1 con rod;
2. failure of the #1 piston; or
3. failure of the crankshaft counterweights.

[CAA Occurrence Ref 14/2023](#)

### Robinson R44 II

#### Fuel control unit

Part Model:	RSA-10AD1
Part Manufacturer:	Precision
Part Number:	2576630-4
ATA Chapter:	7320
TTIS hours:	1402.9

The PTFE washer (P/N 367757) on the idle valve was found to be worn and breaking down. Material was found between the valve and washer, and external contamination was found on the idle valve shaft and bushing. The assembly was cleaned, and new parts fitted and lubricated.

Continuing Airworthiness Notice 73-003 and Emergency AD DCA/MA/17 refer. See also GA Defects 14/793, 14/2672, and 14/2676.

[CAA Occurrence Ref 14/1994](#)

### Cessna U206F

#### Fuel tank

ATA Chapter:	2810
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The pilot reported loss of engine power during flight. Changing the fuel selection to the left tank restored power, and the pilot continued to a precautionary landing.

Maintenance investigation found that the outboard rear corner of the right fuel tank had collapsed. One upper fastener and one lower fastener had become detached, allowing the outer rear tank corner to cave in and slide inboard. This may have led to a false fuel quantity indication when refuelling. The tank attachments were rectified, and after fuel tank calibration was carried out, the aircraft was released to service.

[CAA Occurrence Ref 14/818](#)

### Kawasaki BK117 B-2

#### Power Turbine Governor

Part Model:	LTS101-850
Part Manufacturer:	Honeywell
Part Number:	4-301-212-04
ATA Chapter:	7200
TSO hours:	176.5

The pilot reported 20 to 30 per cent torque split on descent to landing. Initial fault finding by engineer was carried out without success. During test flight at Hamilton, number one engine torque dropped away and could not be regained. Further investigation revealed that the power turbine governor was faulty. This was replaced with a serviceable unit and returned to the manufacturers for repair. The strip report revealed that the throttle shaft bushings were worn. The bushings were replaced and the governor recalibrated to the manufacturer's specification.

[CAA Occurrence Ref 14/2610](#)

### Kawasaki BK117 B-2

#### FCU pump

Part Manufacturer:	Honeywell
Part Number:	4-301-283-08
ATA Chapter:	7320
TSO hours:	1330.8

While on ground at idle the No 2 engine started to suffer an uncontrolled runaway. The pilot shut the engine down. An engineering inspection revealed that the No 2 FCU (fuel control unit) was found to have a seized drive shaft, due to failed bearings. The engineers advised that a service bulletin is scheduled to be issued in October 2015, incorporating a new type of FCU drive shaft bearings.

[CAA Occurrence Ref 14/3601](#)

### Cessna 172S

#### FCU Fuel Servo

Part Manufacturer:	Precision Aeromotive
ATA Chapter:	7100
TSI hours:	21.7
TSO hours:	21.7
TTIS hours:	6868.7

The engine stopped while the aircraft was on final approach to land and a dead-stick landing was successfully carried out. Black smoke was observed from the engine exhaust prior to the engine stopping.

The RSA-5AD1 fuel servo was removed from the engine and sent for inspection/repair.

It was found that the fuel servo diaphragm had a manufacturing defect and had been manufactured 'out of round' resulting in improper operation. The OEM has been informed of the defect.

Fuel servo repaired and refitted to the engine.

[CAA Occurrence Ref 14/1719](#)

### Eurocopter AS 350 B3

#### Rescue hoist

Part Model:	BL-16600
Part Manufacturer:	Breeze-Eastern
Part Number:	BL-1660-120-3
ATA Chapter:	2550

During a rescue operation in dense bush at 'full out', the hoist cable detached from the 300 lb Breeze-Eastern hoist drum. As the paramedic's weight came off the hoist system, the cable departed from the hoist and fell away to the forest floor below. The paramedic was not injured.

Extensive investigation into the incident could not conclusively determine the cause, but it is likely that during the last cable change, the cable may not have been correctly installed.

[CAA Occurrence Ref 14/1536](#)

# WX Matters

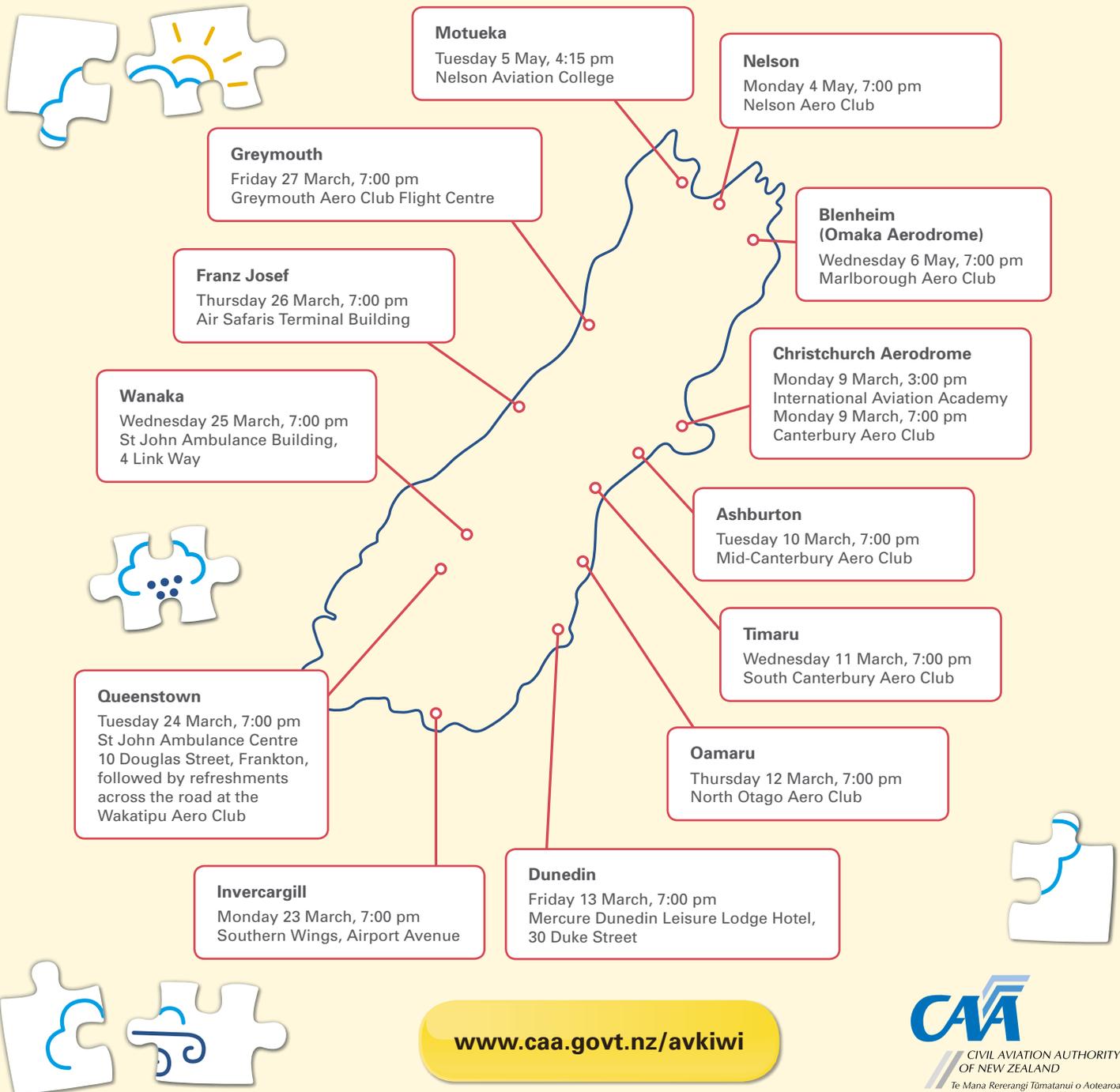
Weather can be a puzzle – you’ve got all the pieces, but how do you fit them together to create the right picture?

Accident investigations suggest that pilots who had weather related accidents didn’t understand the weather.

This year’s seminar can help you navigate your way through the mass of information out there. You’ll also hear of some close encounters of the weather kind from pilots who lived to tell the tale.

At the seminar, you’ll get early access to our free apps and new online course, plus learn how to fit the pieces of weather information together.

AvKiwi Safety Seminars are FREE to attend. More venues will be added soon, see the CAA web site, [www.caa.govt.nz/avkiwi](http://www.caa.govt.nz/avkiwi).



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