

vector



Classic Fighters Omaka 2017

Learning from Kaikoura

Beyond Good Flying


Strip Flying

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Cover: The 2015 Classic Fighters airshow theme was ANZAC Pioneers and the show ended poignantly with a poppy drop from the Avro Anson.

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Tel: +64 4 560 9400,
Fax: +64 4 569 2024,
Email: info@caa.govt.nz.

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**Manager Communications
and Safety Promotion** Mike Richards.

Editor Peter Singleton.

The Vector Team
Charlie Brimmicombe, Joe Lees, Pen Mackay,
Bridget Tunnicliffe, Rose Wood.

Design Gusto.

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Time to Get That Landing Spot Legal

It's been 20 years since Part 157 came into effect. Are you meeting your obligations to safety?

The title of Part 157 tells nearly the entire story – *Notice of Construction, Alteration, Activation and Deactivation of Aerodromes*.

"It's been two decades since Part 157 came into being," says CAA Aeronautical Services Officer, Peter White, "so it's probably time for us to provide a friendly reminder that it exists, and why.

"Its fundamental aim is to help the CAA make sure the airspace around aerodromes and heliports is used safely and effectively.

"Part 139 contains the rules and information related to the operation of *certificated* aerodromes," says Peter. "Part 157 relates to non-certificated aerodromes that are used regularly enough that the CAA needs to look at their effect on the surrounding airspace, and on the safety of people and property on the ground."

You are required to apply for a Part 157 Determination for your aircraft landing area unless it is:

- » Certificated under Part 139;
- » used for a period of less than seven days in any 30 consecutive day period and is limited to VFR operations;
- » used exclusively for aircraft conducting agricultural operations outside of a control zone;
- » used by fixed wing aircraft conducting agricultural operations only, and is located more than 5 NM from the nearest aerodrome, or 3 NM from the nearest heliport;
- » used exclusively by rotary wing aircraft conducting agricultural operations up to 3 NM from the nearest aerodrome, or up to 1 NM from the nearest heliport;
- » used exclusively for aircraft conducting agricultural operations and is located more than 5 NM from the nearest aerodrome, or up to 3 NM from the nearest heliport, or up to 1 NM if your operation is also a heliport, but not used exclusively for agricultural operations.

Once told of the existence of the aerodrome or heliport, the CAA will ask groups likely to be affected by the operation to give their opinion of the likely impact on:

- » existing or proposed aerodrome traffic circuits of neighbouring aerodromes or heliports;
- » existing and projected airspace users;
- » the safety of people and property on the ground;
- » existing or proposed man-made objects within the affected area by the proposed 'action'.

The CAA will then carry out an aeronautical study looking at the same issues. That process is charged out at the normal CAA hourly rate.

Once that study is finished, the Director of Civil Aviation will issue either an 'Unobjectionable Determination' (the CAA has identified no safety problems); a 'Conditional Determination' (the CAA has identified some problems but there are actions available to mitigate them); or an 'Objectionable Determination' (the CAA has found safety problems for which it has not identified any mitigations). If the aerodrome or heliport is altered or deactivated, the CAA must be told.

"As our staff visit operators around the country," says Peter White, "we're discovering a number of places frequently used for either, or both, fixed-wing aircraft and helicopters – including those carrying passengers – that do not have Part 157 Determinations.

"Some of those have been in existence for years, but there are no 'grandfather' clauses associated with older aerodromes. It does not indicate an absence of risk that in 20 years, an operation has never had an accident.

"If your operation meets the conditions requiring you to notify the CAA, please do, and we can help you ensure the operation meets aviation safety standards," Peter says. ■

Classic Fighters Omaka 2017

During airshow activities in the Easter weekend, Omaka's airspace will become restricted, as detailed in AIP Supplements 47/17 and 48/17. By arriving in good time, you may beat the congestion.

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

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

Omaka aerodrome will be partially closed during the practice days, Thursday 13 April and Friday 14 April – see the Supplement for times. On airshow days Omaka aerodrome will be closed to aircraft, on Friday from 1615 until 1815 NZST, and on Saturday and Sunday from 0930 until 1630 NZST.

Tim Sullivan, former Classic Fighters airshow display pilot, says after studying the charts, you'll realise that Omaka has non-standard circuit directions. This is due to the proximity of Woodbourne, and high terrain on final approach to 30.

"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 enroute fuel and reserves determined by the PIC. If high traffic volumes occur, you **will** be holding," says Tim.

Learn the lay of the land in the Wairau Plain, says Ray Patchett, well-known local agricultural operator.

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

"There is one major landmark, New Renwick Road, which is the main arterial road that runs east to west, just 1.3 NM north of Omaka aerodrome. Don't cross it to the north as it's the instrument sector boundary."

Willie Sage is Check and Training Manager for Sounds Air, and Chief Pilot for Tasman Helicopters, with 13,500 hours. He advises pilots to ask a local beforehand.

"Don't make a last-minute decision to come to Omaka without planning sufficiently. Speak to a local, ring the tower, or speak to someone who's been in there before. Ask 'what's the best way to approach it?' They'll familiarise you. It's a busy frequency and there tends to be a lot of unnecessary radio chat.

"Also, give yourself plenty of time to study the visual navigation chart beforehand. It's quite busy and you don't want to be thinking 'holy hell, how does that all work?' as you're approaching to join."

Tracking to Omaka

There are enroute choke points where 'see and avoid' threats can be created by inbound and outbound streams of Omaka and Woodbourne traffic.

"Areas to watch for," says Tim Sullivan, "are White Bluffs (east entry corridor), Taylor Pass (south entry corridor), and Domes (west entry corridor). Once you're inside transit lane T654, regardless of the sector, it's likely to be quite crowded with aircraft all 1500 feet amsl, and below," says Tim.

In north-easterly conditions, Omaka is relatively calm, even though Blenheim and Picton can be quite rough in comparison. However, in a south-easterly, Omaka is a different story.

Ray Patchett gives advice to those arriving from the north.

"If it's a north-westerly, then guys coming from the North Island, should, in my view, stay east of the coast and join in the transit lane at the ponds or lagoons, then stay hard left over against the hills as they come up to Omaka. This will ensure a better ride with all the upgoing air.

"Stay in a vertical line around the edge of the town and the foot of the hills. This will keep you well and truly in the transit lane.

"For pilots coming from the south," says Ray, "the problem they are going to have is getting inside the transit lane, as they need to be 1500 feet or below. In a north-wester, when crossing the Wither Hills and Taylor Pass (that run across the southern boundary of Blenheim at 1500 feet), conditions will be especially rough."

Transit Lane

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

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

When Omaka's restricted area is active during airshow days, the portion of VFR transit lane NZT654 *Omaka* becomes disestablished.

"Also remember that active portions of the transit lane finish at the end of daylight hours. During daylight hours, you should be listening on the Woodbourne Tower frequency when occupying the transit lane. Same goes after evening civil twilight. A lot of people listen out on 119.1 MHz in error."



Circuit Direction

If you find yourself confused about Omaka's circuit directions, just remember all circuits are designed to keep aircraft away from the town.

"Have the circuit direction worked out before getting to Omaka," says Ray.

"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.

"Also, listen carefully to your sequence number. If you can't spot the preceding aircraft, what I'd do is simply make a traffic call, such as, 'I'm overhead xx, to join yy. I heard someone call number 3, I do not have number 3 in sight, what's your present position?'"

Tim Sullivan warns 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).

"Don't land long and become a newspaper article."

Ground Facilities

Mark O'Sullivan, ground liaison officer for Classic Fighters, says that a BP fuel truck will be operating Friday, Saturday, and Sunday.

"For all VFR aircraft departing Monday, please make plans to fuel up from the BP truck while it's available – there will be

limited fuel available Monday. Make sure you have your fuel card at the ready.

"There are two LAME facilities on the airfield, Sounds Aero Maintenance and JEM Aviation. They're both very willing to help. Bring your own oil supplies with you; the maintenance suppliers will have limited stocks.

"All general aviation aircraft need to be parked in the easternmost parking area, southeast of the Omaka Aviation Heritage Centre. From Thursday, marshalls on quad bikes with 'follow me' signs will help direct aircraft. Taxi slowly and follow command signals. If unsure about any marshalling command, stop."

A Heads-up from Omaka's Mobile Caravan

Steve Petersen, who's been running the airshow since 2001, would prefer pilots to arrive via the promulgated entry and exits.

"If you're coming from the north, arrive via the lagoons. If several aircraft are arriving together, that allows the traffic to be managed more efficiently. If coming from the south, it's more likely you will be brought into the Taylor Pass area.

"If you're arriving from a westerly direction via the lagoons, or even the Taylor Dam area, you'll usually join straight in, or use right downwind for any of the easterly vectors." ■

Learning from **Kaikoura**

The magnitude 7.8 earthquake just after midnight on 14 November 2016 took everyone by surprise, including the aviation industry. All of a sudden, a small seaside town was inundated with unprecedented air traffic, and everyone with a machine wanted to help. If there is another Kaikoura – what should you be aware of?

Air operations played a major role in evacuating people from the cut-off town, getting people in there, as well as much needed supplies.

Murray Hamilton manages Air Kaikoura and is a member of the Kaikoura Aero Club.

“All my staff basically gathered at my house about 12:30 that night. We knew that we were going to be inundated.

“We woke up about 6 am that Monday and drove out to the airport to discover that the runway was 100 per cent intact – that was a godsend really.”

CAA Aviation Safety Adviser, Carlton Campbell, flew into Kaikoura a few days later and met with the manager of air operations, Airways staff, the council, and the RNZAF.

He also met that day with as many operators in the area as possible.

“My overall impression was of a huge number of people doing an amazing job under trying conditions, demonstrating the best characteristics of human nature.

“But because everyone was sort of swarming in to help, there was the potential for safety to be compromised.

“The area was flooded with good Samaritan traffic, both private and commercial, some summoned by authorities, others arriving with supplies and making themselves available. Some established contact with authorities, others just came and went on an ad hoc basis.”

All pilots need to be aware of the provisions in s13A of the Civil Aviation Act 1990. Unless there is an immediate threat to life or property, non-certificated operators cannot carry out operations that require certification.

Fatigue Management

What some people were dealing with on the home front worsened their fatigue, Carlton says.

“I met some very tired people, understandably so given most had experienced the quake themselves, but they had also been working long hours dealing with the emergency.”

Air Kaikoura pilot Shannon Surridge (left), and Tim Johnson.
Photo courtesy of Andrew Spencer.



He says the bad weather that paused flying on the fourth day was a blessing in disguise.

“Everybody under the pressure of an emergency dives in to do beyond the norm, and suddenly when they stop, they realise ‘we’re stuffed, we’re tired’.

“It made them sit up and take note this wasn’t going to be over in a couple of days, they needed to manage the flight and duty times of their people.

“The operators I talked to were starting to establish much better routines of giving people at least a full day off, ideally two days, to manage that.”

Fuel

Think about what the fuel situation is like in the area you are flying into and make suitable arrangements.

Carlton says it was a major challenge, especially when helicopters were being used extensively.

“Apart from what the military managed to cart in themselves via the inland road, there was no access to fuel because Kaikoura itself didn’t have any Jet A-1 in the area.

“Helicopters were going backwards and forwards from Christchurch, which started to push the extremities in their fuel endurance.”

Ground Operations

Landing your aircraft in a disaster-hit area might be more complicated than usual.

Carlton visited about half a dozen temporary helicopter landing areas and says there wasn’t always sufficient ground support.

“Initially, landing zone security and crowd control was limited until some larger operators and the RNZAF provided ground support.

“For example, helicopters turning up from all over the country with just a pilot and a machine full of stuff, but nobody to be their ground support in terms of third party public control.”

Murray Hamilton says their biggest headache was the 1500 or so tourists.

“They all had very big bags, and suitcases, we had to take that into account when loading.

“There were also lots of people who had never been around aeroplanes in their lives. I think we had up to 40 aircraft here on the ground at one stage.

“I suspect we could have done it a little bit better, managing people coming and going through gates, co-ordinating the unloading of aeroplanes. But in all fairness it was pretty well done by everyone.”

Airspace

“If the location of the disaster is outside controlled airspace,” says CAA Aeronautical Services Officer, Paula Moore, “there is a strong possibility that a temporary restricted area will be designated for the safety of aircraft operations within the disaster area, as was the case with Kaikoura.”

Before flying to a disaster area, brief yourself thoroughly by checking NOTAMs and re-reading the rules for operating within a restricted area. You must obtain prior approval from

the administering authority before entering a restricted area. This applies to all types of aircraft, including RPAS (commonly referred to as drones) operations.

Communications

Down at the aerodrome, communication was an issue.

“We had nothing as far as mobile phones went, or internet. When I found a rare signal, I received 51 messages on my phone within two hours from people either wanting to get in or get out,” says Murray Hamilton.

In an emergency, you are likely to encounter an unattended aerodrome, so the radio work of pilots comes to the fore.

There is the potential for people to talk on the wrong frequencies.

The unattended aerodrome frequency of 119.1 MHz is for use by traffic at the aerodrome – it is not a general frequency for use beyond the aerodrome environs. FISCOM sectors have an area frequency for that purpose.

It’s compulsory to make calls within a mandatory broadcast zone using the published frequency and at the appropriate interval. While it’s not compulsory to make calls using the published frequency inside a common frequency zone, the CAA strongly recommends pilots do so.

If there is a second radio in the cockpit, use 128.95 MHz for pilot-to-pilot chatter.

After conducting the Sounds Air proving flight, CAA Air Transport Inspector, Chris Nicholls, spent some time in Kaikoura.

He checked out how the aerodrome was standing up to the traffic and how operators were faring.

When the traffic density is far greater than normal, communication, he says, is key.

“Pilots found that co-operating as a group showed the benefit of user groups getting together. The more people talked, the better.

“Before you fly in, you need to familiarise yourself with the area, the airfield, the situation, and find out who you should be talking to.”

Pressure

The wall-to-wall media coverage of the impacts of the earthquake and its potential to influence decision-making shouldn’t be underestimated.

Carlton believes it very definitely made it harder to say no.

“Lots of tourists were sort of gravitating towards helicopters trying to negotiate deals to get out.”

There could also be a temptation to push the limits to try to get as many supplies on board as possible.

“If you did have a turbulent day, out-of-weight or out-of-balance loads could end in disaster on top of a disaster.”

Carlton says with all the good intentions to get stuck in and help, there is potential for letting the heat of the moment get you carried away.

“Just step back and ask ‘hang on a minute am I going to create an even worse situation?’”

Murray Hamilton says taking a moment to plan was beneficial.

“We came up with a bit of a strategy, we sat down and prioritised what we could and couldn’t do.” ■

Beyond Good Flying

Passing on aviation knowledge involves skills quite separate from being able to fly well. Here, students and instructors describe what works, and what doesn't.

An effective instructor understands human psychology, especially the different ways students learn best. That's the opinion of CAA's Principal Aviation Examiner, Bill MacGregor, who says it's all about understanding the 'how' of mastering a task.

"If you understand how individual students learn, you can tailor your delivery of instruction to that. They're made comfortable by that, learn faster and more effectively, and their flying reaches a higher standard."

D, C, and E-cat instructors are expected to attend an approved Instructional Technique course, so they can gain skills that have nothing to do with being a good aviator, but everything to do with teaching how to be one.

"Telling isn't training," says Kaye Sutherland, a long time instructional techniques instructor with Air New Zealand. "It's a given that you're a subject matter expert and a role model, but that's not enough. Good trainers need to connect with the student, and establish rapport at the start of the training."

"Set clear objectives so students know what is expected of them, and what is being assessed. Establish the gap, find out what the student knows about the topic – don't assume they will know. Ask insightful questions to elicit knowledge and check understanding."

"Get them to demonstrate skills to ensure they're meeting the standard set in your lesson objective. Check for attitude – hard to change but part of the training package – knowledge, and skills. Be the guide on the side, not the sage on the stage! Take the learner on a guided didactic tour managing time and content. Assess frequently to ensure learning is happening."

"Don't ask them if they understand. Make them demonstrate. Use a variety of methods, other than talking at them, to cater for different learning and personality styles."

"Finally, think like a beginner. Remember what it was like for you starting out. Use stories to engage them. It's not about how much you know. It's about making it easy for learning to happen."

One Size Doesn't Fit All

An A-cat instructor with Massey School of Aviation, Ian Burgers, says he's conscious of each student's personality type.

"I try to figure out what kind of learner they are, because everyone is different. Some like to see everything written out on the whiteboard, because they're visual learners. Others may be happy to listen, because they're aural learners."

The third type of learner is the kinesthetic student, who needs to be 'doing' to learn well.

"An instructor needs to be thinking 'what's the best way I can communicate with this particular student?'" says Ian.

"If the student hasn't grasped something by listening, for instance, maybe we need to get them to watch an engineer at work, or re-enact a flight on the ground, with plenty of different scenarios thrown in."

Massey student Arjun Jethmal – and now a First Officer with Susi Air in Indonesia – found that his primary instructor adapted training to fit Arjun's personality.

"I'm a visual learner and hands-on. Learning through a lot of theory does not suit me particularly."

"Because my instructor understood that, and tailored the instruction to my preferred style of learning, I didn't have to struggle to absorb the information. I could spend more time and mental energy on things I needed to improve."

Former Nelson Aviation College (NAC) student – and now B-cat at NAC – McKenzie Rayes, says her instructor knew her favoured way of learning.

"My instructor knew that it was important for me to understand the theory behind an exercise. For example, when I began in the circuit, I was having trouble with flaring. She took time to sit me down and explain the aerodynamics behind flaring. Once I understood that, I was away."

Overcoming Learning Barriers

A former C-cat with NAC – and now instructing in Botswana – David Turney, teaches both local and international students.

"There are language barriers I have to overcome with international students. I constantly ask questions to make sure they understand what I've just taught them. I also try to slow the speed of what I'm saying."

"Because English is their second language," says Ian Burgers, "it's important for an instructor to avoid slang or sarcasm. They could take you literally."

"For instance, saying, 'Looks like great weather to the north again...' when it's actually bad weather, or, 'You're coming in too hot' could cause obvious issues."

CAA Training Standards Development Officer, David Harrison, agrees. "Instructors need to use simple, non-technical language until the student gains a bit of experience."

NAC A-cat instructor, Amanda Meates, recommends learning more about each student's culture, and the impact of that culture on how they learn.

"For example, when students from other cultures are in command, they often ask for permission to do things. You need to be aware of that natural submissiveness, and make it clear to them that it's all right for them to take control. Slowly, they learn how to do that."

"We may also alter the time frames for students to learn something. If, for instance, someone is struggling with doing two things at the same time, we might get them to practise on the ground initially, so they get used to doing the two things together. If that means they take a bit longer to learn the task, that's okay, because they become a more skilled pilot."

Complete the Cycle

Ian Burgers says he outlines very clearly his expectations of students.

"Even before we step into the cockpit, we do a thorough briefing on what competencies are expected, and what the limitations are. We can then easily go back to these during the debrief and ask if we achieved the objectives."

David Turney expects students to spend a lot of time on the ground, learning each procedure before they get into a plane to do it in the air.

"That's why we have briefings before each flight. It saves them money in the air if they already have a good idea of what needs to be achieved."

Former Nelson Aviation College student – and now C-cat with NAC – Oli Lusk, appreciates the preflight briefing.

"It means they're not trying to teach, and we're not trying to learn, an entirely new concept while we're also flying."

Oli says now that he is an instructor, he also really appreciates the value of the debrief as an instructional tool.

"They give the student something to think about before the next flight."

David Harrison agrees, saying the debrief completes the 'instructional cycle'.

"It's an essential part of the learning process, to highlight the student's strengths, and define the areas needing improvement, and how to improve them."

Former NAC student – and now CPL (A) – Josh Collecutt, says the debriefs really help.

"The instructor recording and rating my flying performance definitely helped me identify aspects of my flying that I was struggling with. Or excelling at!

"I found that as a student, debriefs were a really beneficial and important part of learning. They allow the student and instructor to come together and reflect on the flight soon after it is completed, and while it is still fresh in their minds."

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Open and Approachable

Instructors being open, friendly, and approachable, ranks highly with students.

“For me, it’s important that an instructor is easy to approach,” says Josh Collecutt. “Someone who’s willing to help me with my questions or concerns.”

McKenzie Rayes has a similar view. “The last thing you need in the cockpit is confusion and misunderstanding. You have to be on the same page. That can be hard for new students, and especially difficult if you’re shy or timid. That’s why it’s so important the instructor is accommodating, welcoming and approachable to newer students. Well, to everyone, really.”

When is the Right Time?

Determining the right time to give feedback is one of the less straightforward aspects of good instruction.

A Massey flight instructor, Sophie Copplestone, recounts the experience of a friend whose instructor would wait some time to tell him he had done something incorrectly.

“If the instructor always waits until you’re back on the ground to give you any feedback, there isn’t much learning to be had from that.

“Some things can wait, but other, more safety-critical things need to be brought up immediately, so bad habits don’t form.”

Massey B-cat instructor, Casey Glynn, agrees. “If the student has made a mistake at a crucial time, I think they must be told right then.

“But an instructor has to be careful that the student doesn’t feel crushed by negative feedback. It could affect their performance as well as their confidence. If the student is concentrating on flying the aircraft, often what you’re saying isn’t really being heard.

“I prefer to make sure the student has completely finished the exercise before I talk about what they did well, and what they need to do next time to make it better.”

Bill MacGregor also agrees that mistakes should be corrected as they occur.

“Whereas the post-flight debrief summarises the flight and its learning points.”

Clear Communication

Former Massey student – and now CPL (A) – Shinga McLeod, has witnessed the effects of poor communication.

“One of my instructors was regularly failing a particular student in my class, because the instructor wasn’t happy with that student’s progress and planning.



Kapiti Aero Club instructor Daniel Gendall about to take up student Ruben Eingaertiner.

“But that instructor really just failed to explain to the student exactly what he was looking for. And all that happened was that the student lost motivation.”

“What you need is basic, clear communication,” says Ian Burgers. “Especially for international students, nothing over the top that complicates things, and not too many words.”

Don't Stress Out

Instructors should understand how stress can affect the quality of communication in the cockpit.

David Turney says if a student feels overwhelmed during a flight, it's difficult for them to be really taking in what is being said to them.

“Environmental stressors are a pressure, for instance, poor weather up ahead, or a loud engine noise.

“Or if the airspace is busy, there will be lots of aircraft making lots of radio calls. That makes it difficult to maintain good communication because we can't speak while we're listening to other pilots' radio calls.”

Casey Glynn, as a student, learned from an unpleasant experience in the cockpit about what being a good instructor involved.

“I was having trouble with circuits, especially landing. The flight had been long with both dual and solo circuits at

two different aerodromes. The instructor was telling me after each approach that it was not up to standard.

“I knew I was struggling, and I was disappointed with myself and my performance. But all I was getting from my instructor was a sense of frustration.

“Finally, we had to do a go-around as the approach wasn't right. The instructor told me that I was not trying, and that I thought the situation was funny. That really upset me.

“There was, needless to say, a lot of tension in the cockpit.

“Looking back on that flight, I think I learned more about communication, and the influence an instructor has on a student and on the cockpit environment, than I did about doing an approach to land.”

Massey's Ian Burgers has learned to appreciate the 'how' of instructing is just as important as the 'what'.

“The more I instruct,” he says, “the more I realise it's all about the people, and not the actual flying.” ■

See also

“The Instructor as a Professional” in the November/December 2016 issue of *Vector*, and “The Flight Examiner as a Professional” in the January/February 2017 issue.

Young Eagles Soar

Nine young men and women made the most of the Flying NZ National Championships held in Taumaranui this year and reaffirmed their passion for aviation. *Vector* talked to four recipients of this year's Ross Macpherson Memorial Young Eagles Flying Scholarships.

The scholarship awards \$3200 each to outstanding Young Eagles to help fund their flight training. Sponsors are Aspeq, Avsure, Airways, and the Civil Aviation Authority.

James Bassett

The 17-year-old first got interested because his father is keen on aviation.

"He never flew, but he bought me some model planes when I was young, and then the model planes became big planes."

James, who belongs to the North Shore Aero Club, was still buzzing after scoring a ride on one of his favourite aircraft during the national championships.

"Most people in aviation are really receptive to passionate young people so I just had a good chat with someone, and they offered to take me for a fly in their aircraft, the Cresco topdressing plane.

"I'm thinking about agricultural flying as a definite possibility career-wise, or missionary flying."

Sarah Avery

The 17-year-old from Tauranga Aero Club also started young.

"My uncle took me for a ride in an aeroplane when I was three and I absolutely loved it.

"When I was 11, I was like 'yeah I want to do this'."

Sarah, who is about to go solo, says it's taken a lot of work and dedication.

But choosing high school subjects wisely has worked well for her.

"I'm a correspondence student, so I kind of picked subjects that are in line with a flying career."

Sarah wants to do corporate or commercial flying.

Sky Davies

Sky Davies has found it a bit of a juggling act to manage school and flying, but has made it work.

The 17-year-old is interested in a career in commercial or military flying.

Sky joined Young Eagles when she was 12, but her interest started much younger.

"My uncle used to take me to the airport when I was four or five to watch the planes, and I guess I was hooked."

Last year, the Tauranga Aero Club member says, she had a 'life changing' experience when she went to the Walsh Memorial Scout Flying School.

"I spent two weeks camping and pretty much doing flying every day.

"The skills I learnt in Young Eagles helped me a lot at Walsh and I was extremely excited to fly the first female solo of the 2016 camp."



Zane Laing

Zane's uncle is well-known Queenstown pilot Jason Laing, who was awarded the Helicopter Association International's Pilot of the Year 2016.

The 17-year-old has had countless flights with his uncle, so it's no wonder he's interested in aviation.

A member of the Alexandra Flying Club, Zane says his parents have been very supportive too.

Zane is keen on aviation as a career.

"I'm not sure about the flying side of it but maybe the mechanical or engineering side of it is the direction I might head."

Bright Horizons

The nine Young Eagles had an action packed programme in Taumaranui.

At the Flying NZ presentation dinner, where the scholarships were formally presented, the audience was also treated to short videos the Young Eagles put together.

Flying NZ president, Rob George, spent a lot of time with the group.

"In my day there wasn't such a thing as Young Eagles, so if kids got through the system, it was almost by accident, or it's because they had a parent or someone who was actively involved."

He says the programme gives young people an opportunity to see what jobs are available in the wider aviation sector and what they need to do to get there.

"When we do the Young Eagles conference in April they'll see everything from Avsec dog handling, through to fire rescue, engineering, jets, helicopters, Airways – pretty much the whole gamut.

"You meet some good people along the way. You can pick up the phone and say to someone, 'I want you to fly your top-dresser plane because I want you to show the kids the Cresco, and talk to them about the life of a top-dressing pilot'. And they just arrive, no charge, they just turn up and show the kids."

Sky Davies summed up the benefits of the weekend.

"We've met a lot of people who can show us where our careers could go. It's also great being able to socialise with other aviators."

Nola Pickard Memorial Trophy

Liam Sutherland took away the Nola Pickard Memorial Trophy, including a \$150 flight voucher. This trophy is awarded to the top Young Eagle based on their results in the champs' preflight and defect competitions, as well as the Young Eagles' own general aviation knowledge exam.

The Ross MacPherson Memorial Scholarship is only one of three types of scholarships Flying NZ offers young aspiring aviators. Applications for all scholarships for the 2018 calendar year are expected to open in October. Contact your local aero club, or execsec@flyingnz.co.nz, and register your interest in applying for a scholarship when the applications open. ■

Young Eagles from left to right: Zane Laing (inset). Back row – Lucy Laby, James Bassett, Liam Sutherland, Daniel Just. Front row – Sarah Avery, Sky Davies, Cody Bell.

Flying Heli-Neighbourly

Complaints to the CAA are rising about noise around heliports.

If the physical characteristics – such as lighting – of a landing area are suitable, and the pilot or their ground crew has made a thorough safety assessment of the area, a helicopter can land anywhere.

The chosen landing site has to be a spot where the helicopter can hover clear of obstructions, and with an area suitable for touchdown and lift-off, clear of non-essential people, and vehicles.

Unless the helicopter is performance class 1, the approach and take-off paths have to be able to accommodate an autorotative landing that won't cause a hazard to people or property on the ground.

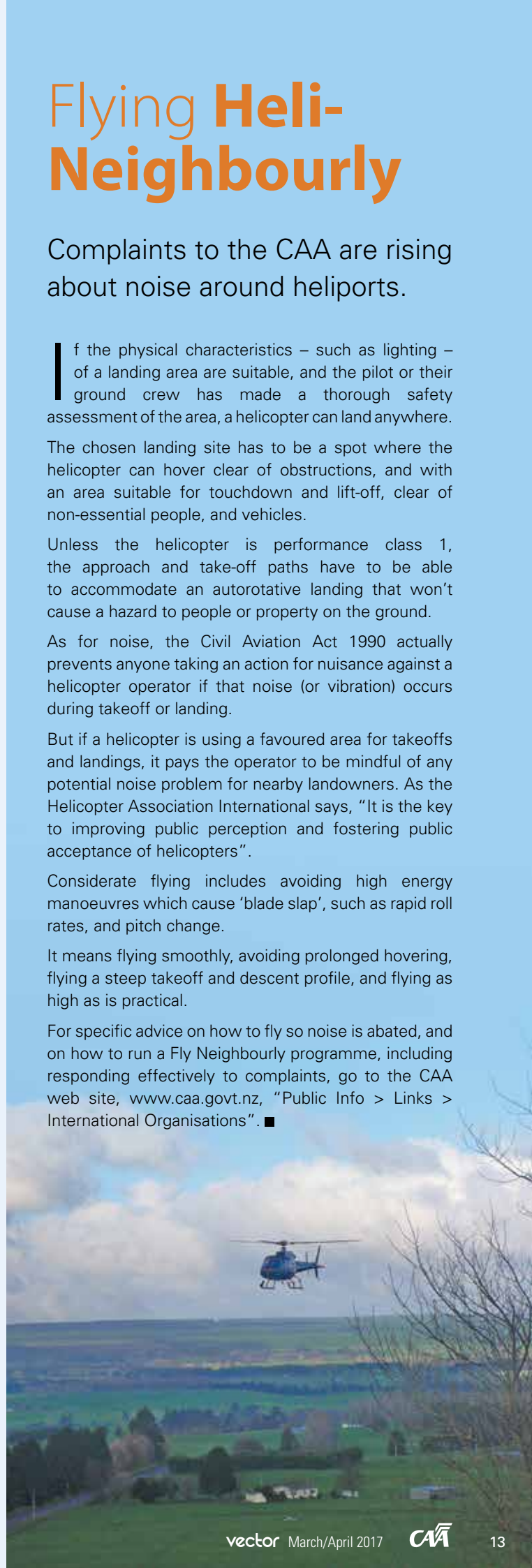
As for noise, the Civil Aviation Act 1990 actually prevents anyone taking an action for nuisance against a helicopter operator if that noise (or vibration) occurs during takeoff or landing.

But if a helicopter is using a favoured area for takeoffs and landings, it pays the operator to be mindful of any potential noise problem for nearby landowners. As the Helicopter Association International says, "It is the key to improving public perception and fostering public acceptance of helicopters".

Considerate flying includes avoiding high energy manoeuvres which cause 'blade slap', such as rapid roll rates, and pitch change.

It means flying smoothly, avoiding prolonged hovering, flying a steep takeoff and descent profile, and flying as high as is practical.

For specific advice on how to fly so noise is abated, and on how to run a Fly Neighbourly programme, including responding effectively to complaints, go to the CAA web site, www.caa.govt.nz, "Public Info > Links > International Organisations". ■



7150

Every single report to the CAA of incidents, accidents and other 'aviation related concerns' is recorded, then grouped with similar occurrences that happened in the same time period. Concentrations of risk can then be identified.

In 2016, there were 7150 occurrences reported to the CAA, making it a record year for reporting.

"We look at every report," says the CAA's Manager of Intelligence, Risk and Safety Analysis, Jack Stanton.

"Although we don't have the resources to follow up every reported one-off occurrence, each report is valuable because all trends start with a single incident.

"For instance, we may not follow up with a single Sunday flier who reports that they busted airspace. But if a second, then third, weekend pilot reports that they also busted the same piece of airspace, the third pilot may get a call to find out what happened.

"That's why the CAA may respond in different ways to otherwise similar incidents.

"Safety risk, particularly the risk of an event happening again, is what we are really looking for," says Jack. "And it might be that in this instance, the three reports are indicating the airspace boundary isn't correlated with a recognisable geographical feature."

Jack is keen to impress, however, that it's not always about the numbers. The most frequently occurring event is not necessarily the most significant safety risk.

"You can see, for example, from the 2016 graph that there was a spike of reporting in the first week of June (coloured yellow). But analysing that spike revealed that most of the reports were about insignificant single bird incidents."

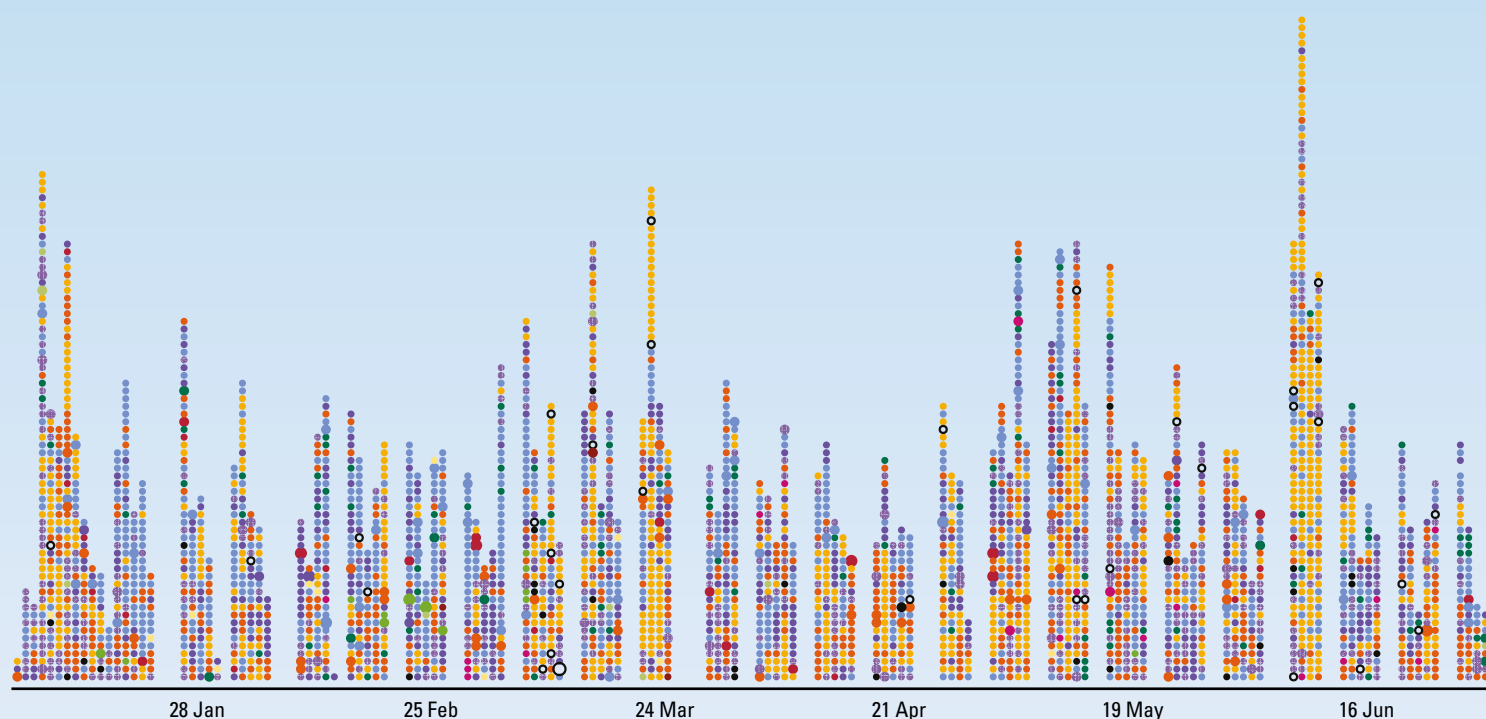
Of the 7150 occurrences reported in 2016, just 86 were accidents – the lowest number in many years – and 27 of those were in the parachute or hang gliding sectors.

Jack says an accident doesn't necessarily offer more safety lessons than a more minor incident.

"Investigating an accident can give us good safety information, but it is in retrospect. The accident has happened and the damage done. Whereas, incidents, even where there's no damage done, can contain information that's just as valuable, particularly if an accident was *avoided*."

Jack says sometimes a seemingly benign incident could have potentially dire consequences.

7150 occurrences notified in 2016 by date (Bubble size represents severity).



“For instance, a report that ‘last Wednesday afternoon, two aircraft had trouble understanding the controller and as a result, they converged on to the same waypoint, but then they realised what was happening and both took avoiding action’ tells us about something that really does need looking at. Even though nothing significant happened this time, the incident has clear safety implications.”

Making Sense of It All

Jack is encouraging people who report an occurrence to include a good as possible description of what happened.

“A description is the most important part of a safety report. Obviously we want the basic details, but a good description of what happened, and the language used in that description, will also convey how risky the person making the report thought the incident was.

“For example, we might read a report saying ‘Aeroplane cut in front of me, two miles on final, I throttled back and let it land’ and we might say, ‘Ok, it shouldn’t have happened, but actually it doesn’t look like there was too much risk here’.

“But if that same pilot reported, ‘Aircraft cut in front of me and I took evasive action, and found myself faced with a turn into a confined area’ we would feel that the language used conveyed much more risk.”

Jack says if someone feels the incident they report was really significant and needs looking at, they should say so.

“Something like, ‘This was a really serious event and I’m very keen to speak to someone at the CAA about it.’

“Or conversely, ‘This event was not ideal but because of the fine conditions, it wasn’t particularly risky.’

“That gives us a really clear idea of how serious the incident was because the pilot’s opinion is clearly relevant.”

What Happens to the Information

Three CAA teams work with the ‘intelligence’ gleaned from reports. The safety information team records and categorises the reported occurrences, and rates their severity.

The safety investigators examine the more significant of the occurrences, and the CAA analysts pore over the data, looking for trends.

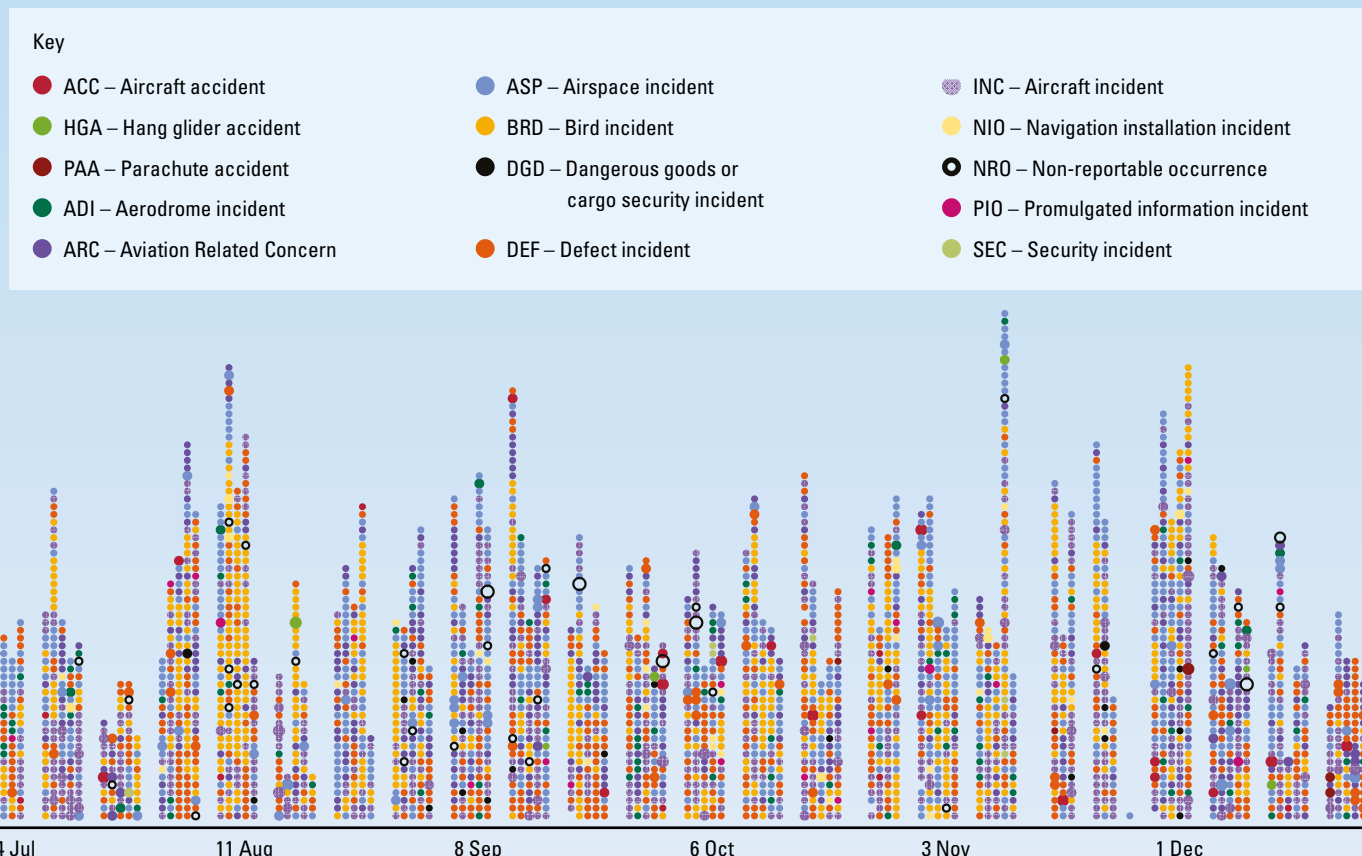
So what happens when an analyst does find a theme among the ‘skyscrapers’ of a yearly reporting graph?

CAA analyst, Joe Dewar, has been using such data to great effect, bringing awareness to members of the New Zealand Helicopter Association about risk in rotary activities. He’s embarked on a similar programme with Part 115 participants.

“We can provide the same information to any sector. It can be done quite quickly,” says Jack.

Or the information might be used to promote awareness through *Vector*, or a GAP booklet, or an Airworthiness Directive. The CAA’s quarterly *Aviation Safety Summary Reports* are based on the information gathered over three-monthly periods. There are also six-monthly *Aviation Industry Safety Updates*. Both can be found on the CAA web site, www.caa.govt.nz, “Aviation Info > Safety Info > Safety Reports”. The information is also sent to the CAA’s operational units, so they know where the safety of their sector is at.

“We really appreciate that reporting is increasing,” says Jack. “Eighty per cent of our intelligence work is based on reports, and good descriptions are essential to making sense of those reports.” ■



Strip Flying

Landing on short, unofficial strips requires skills quite apart from those needed for other types of flying. And most of those skills are to do with human factors.

“That man deserves a beer.”

That radioed comment changed a pilot Nigel Griffith's flying from then on.

It came from someone watching Nigel go around – his first in earnest, he says – rather than follow through with a marginal landing on a challenging strip in the Marlborough Sounds.

“Before then, like many people,” says Nigel, “I would try to avoid the go-around, and just back myself that I would land safely.”

“But now I've embraced the go-around, am proud of it, and believe if everyone adopted the same attitude, it would solve 90 per cent of landing problems at these small strips.”

“The first thing about landing on private strips,” agrees CAA team leader of heli ops, Grant Twaddle, “is to have an early decision point. And once you have made the decision, follow through. If you decide to land, land – even if it's on the paddock beside the strip. If you decide to go around, go with it. There's no point having a decision point, then flying on past it still trying to toss up what to do.”

“Many private strips butt up against rising terrain and you may not have the option of a late go-around.”

Queenstown-based Jules Tapper, who's landed on mountain strips for more than 50 years, says the pilot needs to ask themselves why they want to land on a strip. “Is it really necessary, or am I just trying to put another strip in my logbook?”

Jules says if a pilot intends landing on a private strip, they need thorough preparation.

“Have they been briefed by a local, more experienced pilot in landing there? What are the specific considerations for flying in there *today* – wind, turbulence, shear, temperature relative to ISA sea level performance?”

“What about anticipation of an incident? Who knows where I am? Who local can help me? What emergency gear and food supplies do I have if we get stuck here?”

“Are all the boxes ticked for a landing? Weight, recent currency on type, experience in landing on demanding strips with reduced margins, the wishes of any passengers?”

“And finally, what about the strip? Its length, width, surface conditions, slope, side clearances, braking effectiveness, approach and overshoot considerations?”

“You should never land on a strip, outside an emergency, on a whim. Evaluate the considerations first.”

Another piece of advice from Nigel Griffith is to come in steep. “The three guys who won their class in the recent Healthy Bastards Bush Flying competitions, all had steep approaches.”

“If you come in low, you're dragging the plane in on to the strip. If you decide to go around, you've got a really high drag situation.”

“But if you're high on approach, you can see where you're going to land, and if you do have to go around, you just put on a bit of power and go.”



Nigel says if a third go-around is unsuccessful, "it's time to knock off".

Grant Twaddle says taking off from a sloping strip has its own challenges.

"If you're taking off from a downward sloping strip, you get airborne very quickly, then level off and lose airspeed, which means you can bump down again on the strip, but now you are running out of strip to take off from."

Jules Tapper says there are other considerations in taking off from a downward sloping airstrip. He says it can be particularly difficult in a downwind, especially with the wind coming from the left.

"I'm in a taildragger, and that downwind is going to accentuate all the negative takeoff factors of torque swing, P effect (the effect of power) and gyroscopic effect. Will I have enough length and width on the strip, and braking and rudder effectiveness, to safely take off while maintaining directional control in my high groundspeed and low airspeed configuration?"

Nigel Griffith also flies a taildragger. He uses a formula he read in an Alaskan flying book, for taking off.

"At the midway point of the strip, your speed should be two thirds of your stall speed. So, in my aircraft, with the stall speed around 45 knots, 70 per cent is going to be about 35 knots. So at the midway point, I have a quick glance and if I've got more than 35 knots, it's going to take off no problem. If I haven't got 35, I can easily stop in the remaining half of the runway."

CAA Aviation Safety Adviser, Carlton Campbell, says that inexperienced pilots should consider making that decision at about the one-third mark.

"That means that by the time they do reach the midway point, they have started to decelerate.

"I can't emphasise enough the importance of getting training before flying into airstrips," he says.

Jules Tapper says experienced pilots like him are increasingly concerned by the recent, and rising, number of 'big scares, narrow escapes or accidents' resulting from inexperienced or 'gung-ho' pilots attempting something beyond their skills or failing to recognise potential traps.

Nigel Griffith agrees, saying it actually takes a much better pilot to decide that, right now, they cannot land safely, "and it will be better to go around and do a really good landing".

Jules Tapper encourages pilots to be thinking ahead and having an 'out' regarding the possible downside of landing in marginal areas.

"It does not seem to be uppermost in some people's minds when they take on some landings and takeoffs."

He also encourages experienced pilots to "spread the info around".

"If they're the first in a group to land somewhere, let the others know what the conditions are like. If the grass and mossy runway is like glass, warn the less experienced pilots off.

"I've known of pilots, carrying passengers, landing on strips they're completely unfamiliar with. And the more experienced pilots in their group have given them no mentoring at all. I don't think that's acceptable. Pilots used to landing on these short runways should be taking every opportunity to help others with general advice about strip flying, and tips about landing that particular day on that particular strip.

"I learned how to land on strips, and how not to, the hard way, during the venison recovery days. I wouldn't recommend it as a way of gaining knowledge.

"Far better, as the old adage goes, to learn from the mistakes of others."

Further Reading

To read more about the skills involved in strip flying, email info@caa.govt.nz for a free copy of the GAP booklets, *Takeoff and Landing Performance* and *Weight and Balance*. ■



A rural strip with deceptive upward-sloping ground.

Too Much Noise in the CF

The airwaves in CFZs are becoming cluttered with irrelevant chit chat, and conversely, some pilots are *still* flying through MBZs without making reports.

Too Much Noise

Common frequency zones (CFZs) were established to encourage pilots to use a single frequency within a particular area of airspace.

They signify areas of concentrated aviation activity, especially recreational aviation and are depicted on VNCs with a diamond-shaped boundary marking, and the abbreviation "CFZ".

It isn't mandatory to use a radio within a CFZ, but as the CAA's GAP booklet, *Airspace*, says, "...it would be very poor airmanship not to use the published frequency and not to comply with expected local radio procedures when radio-equipped. As a minimum, pilots should broadcast their position and intentions on entry and exit from a CFZ."

Despite that, a rising number of pilots use the frequency to have a non-essential yak.

"Pilots should follow appropriate radio discipline," says Paula Moore, CAA Aeronautical Services Officer. "Generally, this is making an initial position report when entering which will allow other pilots to know where they are, and their intentions. If another pilot reports on the frequency in the vicinity of where you are operating, then make a position report. Other than that, they should keep quiet, and maintain a listening watch.

"If they want a yarn, the appropriate aircraft to aircraft 'chat' frequency, throughout the country, is 128.95 MHz."

There's been a rising number in the last decade of what are known as "pilot position reporting deficiency incidents" – 42 in 2006, 112 in 2016. At least some of the total 783 reports between 2006 and so far in 2017 involve inappropriate, or no, broadcasts inside the common frequency zone.

"It's a fine line how many radio calls a pilot should make in the CFZ," says Carlton Campbell, CAA Aviation Safety Adviser.

"While pilots should make them at recognised reporting points, and on entering and leaving the CFZ, some pilots make position, height and intention reports far in excess of what is necessary.

"The result of that is a jumble of reports, which can become confusing, and counter-productive to safety."

Carlton says it's about making calls to enhance the mental map of other traffic, and not adding to the 'noise'.

"The other crucial thing to remember is that radio calls do not replace looking out the window. Some pilots seem to think the more calls they make, the safer they'll be. That is a false sense of security.

"There's also rising inappropriate use of the 119.1 MHz frequency, as an enroute frequency, rather than an unattended aerodrome frequency, for which it was established."

Paula Moore says pilots making the proper radio calls on the

correct CFZ frequency, should also keep looking outside the cockpit.

"Never assume other pilots know where you are. They could be NORDO, or on another frequency. 'See and avoid' still applies."

The Wrong Noise

Some pilots say they're confused about when to say the name of the CFZ – for instance, 'Rangitikei' – and when to use the name of an aerodrome within the CFZ – for instance, 'Feilding'.

The idea is to alert traffic *in the same vicinity* to look out for you.

"That way," says Paula Moore, "it's directed communication. Someone on the same frequency but who's working further away from you, can tune out.

"I'd recommend changing at about 10 NM out. If you're travelling two miles a minute, you're only five minutes from being overhead. So using 'Feilding traffic' lets those pilots already in the circuit know that you'll soon be joining them.

"If you're transiting within 5 to 10 NM of an aerodrome, it's also good flying practice to give the aerodrome traffic a call, and let them know you're around."

Too Little Noise

If there's too much 'noise' on the CFZ airwaves, in some mandatory broadcast zones (MBZ), there's too little communication.

While the obligations associated with a CFZ are voluntary, those associated with an MBZ, are, as the name suggests, compulsory.

"Many MBZs have been established at locations where there is scheduled passenger transport aircraft services on IFR operations, such as at Whakatane," says Paula Moore. "That means when those aircraft are descending into, or taking off from, an aerodrome, they'll know what traffic is in the vicinity. If they're IMC, they need to be sure that when they break out of cloud, they'll know where the traffic should be.

"Other MBZs have been established where there are special operations. For instance, at Parakai, where there's lots of parachuting, or White Island, because of the frequency of tourist flights, or at Whenuapai, which becomes an MBZ when the tower is closed.

"We believe that pilots failing to report their position when they're inside a mandatory broadcast zone is a problem, because we get regular reporting of such occurrences from Paraparaumu. There's an aerodrome flight information service provided there and the flight service specialist can see

Z, Too Little in the MBZ



the aircraft flying through the airspace and not making radio contact.

“We have to assume this happens in other MBZs, but where there is no-one based there to witness it happening.

“More importantly, other pilots will assume there is no-one to look out for, if there are no radio calls.”

The maximum interval of time between radio broadcasts varies around the country, so pilots should check, as part of their preflight planning, the visual navigation chart or the enroute section of the AIP.

For added safety, if an aircraft is equipped with anti-collision and/or landing lights, they must be switched on when operating within an MBZ.

Read rule 91.135 for details of your radio broadcast obligations inside an MBZ.

It's Free

Another under-utilised radio frequency is the FISCOM service.

“Some pilots won't use it because they think – mistakenly – that Airways charges for the service,” says Paula.

“But it's free, and the flight service operator provides invaluable traffic and general information, new NOTAMs, and weather updates. It also guarantees that someone will respond if you have to make an emergency call.”

Whichever frequency pilots are on, Paula says they should never think radio calls replace keeping a good lookout.

“Again, aircraft may be on different frequencies, without a radio, or just not transmitting. Never stop looking out the window.”

Be aware that IFR aircraft operating outside controlled airspace are not necessarily monitoring the CFZ frequency. This is because the pilots are required to be operating on FISCOM to receive IFR traffic information, and the second radio will be monitoring the control frequency – especially if still within surveillance cover – for updated surveillance flight information.

For more reading, email info@caa.govt.nz for a free copy of the booklets *Plane Talking* and *Airspace*. ■

See and Avoid – Paragliding in the Same Airspace

Increasingly congested airspace above New Zealand has led to some nasty frights for both paragliding, and powered, pilots.

Late last year, paragliding instructor Mark Hardman was at the Treble Cone launching site, when he watched in horror as a recently launched pilot found herself in the path of a rapidly descending helicopter.

"She'd launched only moments before a helicopter appeared over the ridge coming out of the skifield basin, at speed, and directly over the launch site.

"There would have been no more than 100 metres horizontal, and about 70 metres vertical, separation between them as the helicopter passed."

This potentially disastrous encounter is among a recent number of similar occurrences, mainly in the Wanaka area, and on the west coast of Auckland.

"It would appear that some recreational paragliding pilots have got into the wrong airspace, including controlled airspace," says CAA's team leader of recreational aviation, Jeanette Lusty.

"And equally, some powered aircraft have strayed into known (and marked on the charts) paragliding areas."

Pilots of powered aircraft need to be mindful of the rules in Part 91 regarding giving way to unpowered aircraft.

The tourism boom at Queenstown and Wanaka means more operators running more helicopters, there are more paragliders and hang gliders – many from overseas – and they're all sharing the same airspace.

Jeanette Lusty says she's sure paragliders busting controlled airspace is mostly an 'innocent' breach.

"There've been some recent airspace changes, and some paragliding and hang gliding pilots may not realise just where the airspace limits are," she says.

"Unfortunately, the helicopter pilots cannot do much more than tell air traffic control when they see hang gliders and paragliders where they shouldn't be, so ATC can warn other operators."

Jeanette says the issue is not just the result of the increase in tourism.

"It's the terrain in that area, as well. Anything can suddenly emerge from the shadows of the mountains. Or a helicopter could suddenly round a bend to find an unknowing paraglider or hang glider in its path.

"It's an extremely dangerous situation for both."

The Hang Gliding and Paragliding Association (NZHGPA), certificated under Part 149, says it works to ensure that every would-be pilot, including those from overseas – who must register as a member in order to be able to fly in New Zealand – is familiar with airspace requirements.

The chief executive officer of the NZHGPA, Evan Lamberton, says there is a large and increasing number of pilots coming in from overseas.

"We allow them to fly here on their foreign licence. But they are required to familiarise themselves with our airspace rules and charts. They're also required to contact local pilots in the area to get a briefing on the conditions of the area they intend to fly.

"...individual pilots have to be aware of the other's likely presence, and fly accordingly."

ers and Powered Aircraft

“But with the numbers of paragliding and hang gliding pilots we have in the country now, both local and visitors, there’s always going to be a random who doesn’t care.

“But we do take that seriously. When that’s brought to our attention, we try to identify them, investigate the allegation, and if necessary, take disciplinary action.”

That disciplinary action includes, as a last resort, relieving the errant pilot of their certificate to fly.

Evan says paragliders will launch from one area, but will do a ‘cross-country’ some distance from that original launch site.

“So they can be anywhere really, not just in one area.

“That’s why I believe both paragliding and helicopter pilots need to vigilantly exercise the ‘see and avoid’ rule. If everyone knows what’s on the charts, and what airspace they are flying in, that is the most we can hope for.

“Beyond that, the individual pilots have to be aware of the other’s likely presence, and fly accordingly.”

Evan says the paragliding aircraft are brightly coloured, will be sailing under the cloud base and sometimes close to the hills to get lift.

“Although they are relatively easy to see, and quite manoeuvrable, powered pilots need to know that paragliders are quite slow-moving. They cannot get out of the way of a powered aircraft very easily or quickly. All they can do is to turn to make their presence obvious, but their ability to fly away from the danger presented by the trajectory of another aircraft is limited.

“We’ve had a couple of incidents on the west coast of Auckland, where well-known, marked flying sites were ‘invaded’ by light aircraft tourist flights flying low.

“It’s a real concern for us that someone will get hurt or killed in this situation.”

Evan Lamberton says it’s also little known that paragliders (and hang gliders) are extremely susceptible to wake turbulence.

“The biggest worry for us is that the turbulence created by a helicopter, even one some distance away, is enough to cause total loss of control of the paraglider. It can happen without the pilot of the aircraft even being aware of the effect of their aircraft’s wake turbulence, even after they’ve gone by.”

Jeanette Lusty says the CAA is keen to work with the NZHGPA to raise awareness of the possible conflict in paragliders, hang gliders and powered aircraft all sharing the same bit of sky.

Evan Lamberton is also keen.

“It would be great if our members were able to speak at aero club nights, to talk to their members about the areas we’re likely to be, what they should look out for, and raise their awareness that the danger is as much to us, as it is to them.” ■



“A helicopter could suddenly round a bend to find an unknowing paraglider or hang glider in its path.”

CAA Notices – Faster and More Flexible

A new 'tool' being used by the CAA aims to make Civil Aviation Rules more adaptable to change.

The aviation sector is undergoing rapid change, and some Civil Aviation Rules do not respond as readily as they need to.

In 2010, an amendment to the Civil Aviation Act 1990 allowed rules to be made, which give the Director of Civil Aviation, or the 'Authority' (which is the CAA Board) the ability to issue approvals, determinations, requirements, conditions or procedures.

To be more responsive to change, the CAA and the Ministry of Transport have agreed to make more use of that provision.

The approvals, determinations, etcetera, will be in documents called 'CAA Notices'.

These could include technical specifications for equipment or technology, or procedures for training, or conditions for the use of a particular aircraft.

CAA Notices must be enabled by an amendment to the relevant Part, and this will require the normal Notice of Proposed Rule Making (NPRM) consultation process.

Once the change is in place, the Director can make changes to the CAA Notice, or issue new ones, using the new process. New CAA Notices and amendments to existing Notices will have a consultation process.

The CAA is now considering submissions made to an NPRM issued in February, on the first CAA Notice. This CAA Notice (as part of NPRM 17-02 *Small Issues Rule Amendments*) includes proposed training requirements for Robinson R22 and R44 helicopters.

A CAA Notice being approved by the CAA, rather than the Minister of Transport, as is done for rules, will make regulation more adaptable to technological changes, and more responsive than rules to immediate safety issues.

A CAA Notice is not like an Advisory Circular. An AC offers advice and provides non-mandatory guidance on how to comply with a particular rule, but it does not bar other ways of complying.

But a CAA Notice will require compliance. Failing to comply with the details in a CAA Notice would be a breach of the rule that authorises it.

CAA Notices will be published on the CAA's web site. To find out more, go to: www.caa.govt.nz/notices. Subscribers to our email notification service will receive an email alert for consultation on Notices based on the relevant rule Parts. See www.caa.govt.nz/subscribe. ■

Sector Risk Profile: Medium and Large Aircraft, Air Transport Operations

Aviation safety needs us all to understand the risks, and to take deliberate action to reduce the probability of them developing.

One way of doing that is through a Sector Risk Profile (SRP). An SRP allows both the CAA and a given sector to examine the underlying influences on safety within that sector.

At present, the CAA is gathering information on risks in the Part 125 (medium aircraft), Part 121 (large aircraft), Part 129 (Foreign Air Operator Certificate, AOC) sectors, and in the community of OAC holders with ANZA privileges.

By identifying risks collaboratively, the CAA and participants in the above aviation communities can create a meaningful profile focusing on the areas identified by the SRP.

In concrete terms, that will allow the CAA to direct its resources more efficiently, and larger and medium air transport operations to further enhance their Safety Management Systems.

To date, the CAA and industry have collaborated on two SRPs – Part 135 Air Operations, and Part 137 Agricultural Aircraft Aviation. They've proved an effective platform for identifying and communicating risk, its underlying influence on safety, and subsequent required actions.

Contacts

There's more information on the CAA web site, www.caa.govt.nz/srp. If you have any questions, please feel free to email the project team at srp@caa.govt.nz. ■





Performance Based Navigation for Part 91

As more and more New Zealand aerodromes 'go PBN', Part 91 pilots need to be assured their kit is approved for their particular aircraft. Here's how.

The following advice is for IFR pilots flying Part 91 *only*, and flying inside the New Zealand Flight Information Region, *only*.

If Your Aircraft Already Comes with a GPS Kit

Look for *Statements of Compliance* in the Flight Manual, or Flight Manual Supplement.

"These will say that the GPS unit in your particular aircraft," says CAA Airworthiness Engineer Alessio Caldara, "meets the installation, performance and functional requirements in accordance with the applicable airworthiness standards, and ICAO criteria/requirements."

If there's no Statement of Compliance, contact the aircraft manufacturer to issue you with one, or at least with a service letter documenting your aircraft's compliance.

Go to www.caa.govt.nz and download from the "Forms" page, CAA091-10 *Part 91 PBN Approval Request for NZFIR*.

To get a Letter of Approval from the CAA, complete the form and send it to the CAA for assessment and approval (standard hourly fees apply to that process), together with the other documents listed on the form. You also need to send the Statement of Compliance issued by the aircraft OEM (if need be).

"An important part of the application," says Airworthiness Engineer Clayton Hughes, "is to provide evidence of software configuration control, and evidence of a subscription to keep the navigation database up to date.

"Software configuration control can be carried out by the operator, or by a contracted third party."

After receiving a Letter of Approval from the CAA, the next step in PBN compliance is to get the pilot approved.

Remember both the aircraft and the pilot must be certified and qualified to conduct PBN operations.

The November/December 2016 issue of *Vector* covered how pilots can gain a PBN qualification through the addition of a GNSS rating. Further details can be found in Advisory Circular AC61-17 *Pilot licences and ratings – Instrument ratings*.

If You Have No Installed Kit

Alessio Caldara advises aircraft owners to check the market for Supplementary Type Certificates (STCs) applicable to their aircraft model.

"Also ensure that the STC is acceptable technical data for your aircraft type.

"If there's an STC available, go through a Part 145 maintenance organisation to get the kit installed. In such a case, part of the STC will be the Flight Manual Supplement with the Statement of Compliance in it from the manufacturer, along with the Instructions for Continuing Airworthiness.

"If there's no STC, it's a brand-new installation and you have to go through a Part 146 design organisation, which can issue an STC or a local modification."

If you're certified to do maintenance, and install the kit yourself, the work must be signed off by a suitably qualified Certificate of Inspection Authorisation (IA) holder.

If You Have 'Legacy' GPS-IFR Approval

Clayton Hughes says if an aircraft owner has a GPS unit approved by the CAA for GPS-IFR operations, that aircraft can fly RNAV1 procedures and RNAV2 routes.

"Existing RNAV (GNSS) approaches may also continue to be flown by operators with approval for non-precision approaches," says Clayton. Apply using CAA Form 2129.

"But there's a 'but'. Because of database issues, some units previously approved may now not be compliant with provisions for RNAV1 procedures."

There's a table of such non-compliant equipment on page 5 of Advisory Circular AC91-21.

"Unfortunately," says Clayton, "if your GPS is on that list, you cannot fly RNAV1, although you can fly RNAV2 and non-precision approaches."

For Engineers

"You should be using certified equipment that can be installed by way of STCs or the proper design change processes," says Alessio.

"If you're unsure what to do, you should at least contact the GPS unit's retailer or manufacturer."

For questions, email: avionics@caa.govt.nz. ■

Nominations Open for 2017 Director's Awards

The Director of Civil Aviation is now calling for nominations for this year's Director's Awards, and the CAA Flight Instructor Award.

The awards, which are in their 22nd year, are presented in three categories: an individual, an organisation, and a flight instructor who personifies safety.

The awards give aviation participants an opportunity to acknowledge those who have made a substantial difference to aviation safety. The recipients are recognised for actions that have been responsible for increasing safety awareness and give excellent examples for others to follow.

If you think someone has made this valuable contribution, consider nominating them. Send in a few paragraphs on why your nominee should be considered, to the CAA's Manager Communications and Safety Promotion, Mike Richards.

Email: Mike.Richards@caa.govt.nz

Fax: +64 4 569 2024

Post: PO Box 3555, Wellington 6140

The last date for nominations is Monday 12 June 2017.

The winners will receive their awards at the annual awards dinner during the Aviation Leadership Summit to be held 24 to 26 July 2017 in Hamilton. ■



Part 66 Recurrency Training

For the first time, the CAA is to hold Part 66 recurrency seminars.

Attendance at the seminars, which will be held two-yearly from now on, are an ICAO requirement.

The first is to be held in Queenstown on Friday 21 April 2017, with registration closing 5 pm on Friday 7 April. You must register as numbers are limited. You can do that by emailing rick.ellis@caa.govt.nz. The second seminar will be held at Ardmore Airport on 15 May.

The seminars will be open to:

» Licensed Aircraft Maintenance Engineers who do not hold an Inspection Authorisation certificate;

» Holders of a Certificate of Maintenance Approval; and
» Non-licensed Aircraft Maintenance Engineers.

The seminars will cover the Civil Aviation Act, and Parts 1, 12, 43, 66, and 91. It will include an open forum for questions regarding the duties and responsibilities of people performing maintenance.

Details of the seminars will be on the CAA web site under *Courses and Seminars*. ■

Correction

In the January/February 2017 *Vector*, we inadvertently transposed the illustrations on page 6 showing the cloud base in Cook Strait. Apologies for this error. ■

New Fees and Levies

1 July 2017

Included with this *Vector* is a flyer about changes to the fees and levies that will take effect 1 July 2017. If you would like more copies of this, email info@caa.govt.nz. ■

In, Out and Around Manawatu

In, Out and Around Manawatu has been updated to reflect changes to the busy and complex Manawatu airspace.

It includes information on two new common frequency zones, River and Rangitikei, and provides the latest information on changes to routes between local aerodromes.

Whether you're a local, or flying through, it's crucial you're thoroughly acquainted with how to safely share airspace with military aircraft (Ohakea), scheduled air transport (Palmerston North), local GA aircraft, and numerous agricultural and training operators.

For a free copy of *In, Out and Around Manawatu*, email info@caa.govt.nz.



Met Info Poster

The *Met Info* poster has been updated – some of the abbreviations have changed, so make sure you get the latest version.

Meteorological information is an essential part of your preflight planning.

This poster is really helpful to put up near your flight planning desk, with the ARFOR areas and abbreviations right where you need them.

Email: info@caa.govt.nz for a free copy. ■



How to Get Aviation Publications

AIP New Zealand

AIP New Zealand is available free on the Internet, 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.

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.

To allow for processing, the CAA needs to be notified **at least one week** before the Aeropath (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	Aeropath (Airways) Cut-off Date	Effective Date
12 Apr 2017	19 Apr 2017	22 Jun 2017
10 May 2017	17 May 2017	20 Jul 2017
7 Jun 2017	14 Jun 2017	17 Aug 2017

See www.caa.govt.nz/aip to view the AIP cut-off dates for 2017.

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.

Don Waters

(North Island)

Mobile: +64 27 485 2096

Email: Don.Waters@caa.govt.nz

John Keyzer

(Maintenance, North Island)

Mobile: +64 27 213 0507

Email: John.Keyzer@caa.govt.nz

Carlton Campbell

(South Island)

Mobile: +64 27 242 9673

Email: Carlton.Campbell@caa.govt.nz

Steve Backhurst

(Maintenance, South Island)

Mobile: +64 27 285 2022

Email: Steve.Backhurst@caa.govt.nz

Report Safety and Security Concerns

Available office hours (voicemail after hours).

0508 4 SAFETY

(0508 472 338)

isi@caa.govt.nz

For all aviation-related safety and security concerns.

Accident Notification

24-hour 7-day toll-free telephone

0508 ACCIDENT

(0508 222 433)

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, "Accidents and Incidents".
Some accidents are investigated by the Transport Accident Investigation Commission, www.taic.org.nz.

ZK-HMP Hughes 269C

Date and Time:	23-Jul-2016 at 09:45
Location:	Te Awamutu
POB:	1
Damage:	Substantial
Nature of Flight:	Private other
Pilot Licence:	Private Pilot Licence (Helicopter)
Age:	23 yrs

During approach to land on a private farm paddock, the pilot elected to perform a run-on landing due to what the pilot described as a feeling of sponginess in the tail rotor pedals. The pilot was concerned that a mechanical failure had caused a loss of tail rotor authority. After initiating the run-on landing, the pilot raised the collective in an attempt to abort the manoeuvre due to concern that the helicopter was tipping. The helicopter became airborne again, and the tail rotor struck terrain. The tail rotor strike caused the tail rotor drive shaft to twist, leading to a loss of tail rotor drive. The helicopter subsequently spun through at least one full rotation and landed heavily.

The safety investigation could not determine the cause of the spongy feeling the pilot experienced. No mechanical defects were identified that could have caused a loss of tail rotor authority before the tail rotor strike. Environmental conditions at the time of the accident did not contribute to a loss of tail rotor effectiveness. Fatigue was not considered a contributing factor.

[CAA Occurrence Ref 16/3752](#)

ZK-EWC Denney Kitfox IV

Date and Time:	25-Jul-2015 at 14:31
Location:	Balclutha
POB:	2
Damage:	Substantial
Nature of Flight:	Training dual
Pilot Licence:	Private Pilot Licence (Aeroplane)
Age:	48 yrs
Flying Hours (Total):	591
Flying Hours (on Type):	30
Last 90 Days:	27

Shortly after takeoff, in the climb at approximately 300 ft agl, the engine lost power. The purpose of the flight was dual training. On hearing the engine power loss, the instructor took control and lowered the aircraft nose to prevent a stall. The instructor decided that it was not possible to land on the remaining runway and planned an approach to land over a flood bank beyond a river at the end of the aerodrome. As the aircraft descended, the pilot realised the aircraft would not clear the flood bank, so turned parallel to the river. The instructor levelled the wings and picked a landing spot, but the surface was quite rough. The aircraft landed abruptly and sustained damage to the fuselage, wings and propeller.

[CAA Occurrence Ref 15/3613](#)

ZK-HNA Hughes 369E

Date and Time:	15-Dec-2013 at 17:00
Location:	Lake Ross
POB:	1
Injuries (Fatal):	1
Damage:	Destroyed
Nature of Flight:	Ferry/positioning
Pilot Licence:	Commercial Pilot Licence (Helicopter)
Age:	48 yrs
Flying Hours (Total):	15469
Flying Hours (on Type):	2433
Last 90 Days:	65

The helicopter departed Milford Sound aerodrome to drop off four passengers in the carpark at Rat Point, near Queenstown. The pilot was then required to pick up an injured DOC worker from Dumpling Hut, but the helicopter did not arrive there as expected.

Another company helicopter later found the wreckage of the helicopter in the Gladeburn Valley near Glade Pass. The weather on the day was marginal, and GPS data showed that the pilot was forced to turn back, or abandon several attempts to cross ridgelines, in order to find a navigable route.

It is believed that the helicopter inadvertently entered IMC conditions resulting in a rapid descending left turn through approximately 180 degrees and collision with the mountainside. Evidence on site indicated a heavy landing and a ruptured fuel tank caused an intense fire. A full report is on the CAA web site.

[CAA Occurrence Ref 13/6300](#)

ZK-TJD Morgan Aero Works Cheetah Sierra 100

Date and Time:	29-Sep-2016 at 09:30
Location:	Wanaka
POB:	2
Nature of Flight:	Private other
Age:	58 yrs
Flying Hours (Total):	2100
Flying Hours (on Type):	6
Last 90 Days:	30

The pilot reduced power too soon during the landing flare resulting in a high rate of descent causing the aircraft to land heavily. The nose wheel was sheared off and the aircraft slid to a stop on the grass runway. The pilot suggested that he failed to account for the increased weight of two POB and not having much total time in that aircraft type.

[CAA Occurrence Ref 16/5176](#)

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, "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

McDonnell Douglas 500N

Number 5 Bearing

Part Model:	RR250C20
Part Manufacturer:	Rolls Royce
Part Number:	M250-10106
ATA Chapter:	7200

During an underslung load operation, the ground crewman indicated to the pilot that smoke was coming from the exhaust. The pilot performed a precautionary landing and shut the aircraft down. The smoke indication was traced to the failure of the No. 5 bearing in the turbine section of the engine. This is not an isolated failure, and a number of No. 5 bearing failures have been reported. The OEM was informed and parts sent to them for analysis. Due to the potential impact on safety of a failure of the No. 5 bearing in flight, the CAA issued Airworthiness Directive DCA/AL250/58.

[CAA Occurrence Ref 16/1222](#)

Guimbal Cabri G2

Tail rotor gearbox gear set

Part Model:	Cabri G2
Part Manufacturer:	Guimbal
Part Number:	G32-00-001
ATA Chapter:	6520
TSI Hours:	100
TTIS Cycles:	1797.7
TTIS Hours:	1796.7

The CAA has been notified of five Guimbal Cabri G2 aircraft that have made precautionary landings due to the illumination of the tail rotor chip detector light in flight. On inspection by the maintenance provider, significant metal debris has been found on the chip plug. In addition, the CAA has been made aware of two cases where significant metal debris was found on the chip plug during scheduled maintenance inspections, where no chip light indications were observed. In most cases, the tail rotor gearbox has been replaced and the helicopter returned to service, awaiting overhaul of the original tail rotor gearbox.

The metal debris on the chip plug has been found to be caused by premature wear of the bevel gears. As a result, Guimbal has developed new gearbox bevel gears with better margins, identified by MOD 13-047 approved under EASA MCA 10057900, in April 2016.

[CAA Occurrence Ref 16/3503](#)

Cessna 172R

Fuel Control Unit

ATA Chapter:	7320
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A successful forced landing was carried out from overhead the aerodrome when the engine lost power.

On the ground, the fuel quantity was checked, and the tanks were found to be empty. The pilot stated that sufficient fuel had been carried for the flight.

A fuel leak from the fuel control unit (FCU) was suspected, and so the maintenance provider removed the FCU for inspection/testing.

No defects were found that could have caused excessive fuel consumption.

There have been no further issues with the aircraft.

[CAA Occurrence Ref 16/3642](#)

McDonnell Douglas 500N

Main Rotor Blade

Part Model:	MD369FF MD520N
Part Manufacturer:	McDonnell Douglas
Part Number:	369D21102-503
ATA Chapter:	6200
TSI Hours:	25
TTIS Hours:	1488.3

During survey work, the pilot heard a noise associated with vibration, also noting the rotor blades were suddenly out of track. The pilot landed the helicopter and shut down. The main rotor blades were removed and engineers discovered one of the blade attachment lugs had failed, separating at the bush. Investigation on the main rotor blade history identified that the main rotor blade had been involved in a power-off blade to tailboom strike overseas. At the time, the blades were removed and visually/dimensionally inspected, before reinstalling them. It is considered likely that this defect was initiated by the blade strike, and the crack propagated undetected over time. The affected blade was replaced.

[CAA Occurrence Ref 16/1221](#)

Bell 222B

Lateral Isolation Mount

Part Manufacturer:	Lord
Part Number:	222-331-617-103
ATA Chapter:	6330
TTIS Hours:	3049.6

The pilot reported an increased main rotor lateral vibration during flight.

Maintenance investigation found that the lateral isolation mount had failed allowing the M/R gearbox to swing unrestrained from left to right. The attachment lug in the isolation mount had torn out of the main body. A new lateral isolation mount was installed.

[CAA Occurrence Ref 16/1167](#)



FUEL FOR THOUGHT



The runway behind you,
The air above you,
and the fuel you left behind...

Whether you're starving for new information, or too exhausted to find out the real gas, there's more to fuel than you think.

To understand more about the fuel system in *your* aircraft, at the seminar you'll get early access to our new app, *Know Your Aircraft*.

AvKiwi Safety Seminars are FREE – all the venues are shown on the map (more dates and times will be added as they become available). See the CAA web site, www.caa.govt.nz/AvKiwi for updates, and for online courses from past seminars.

The seminar has been presented in Feilding, Kapiti, Palmerston North, Stratford, and Wellington.

