September / October 2012

POINTING TO SAFER AVIATION

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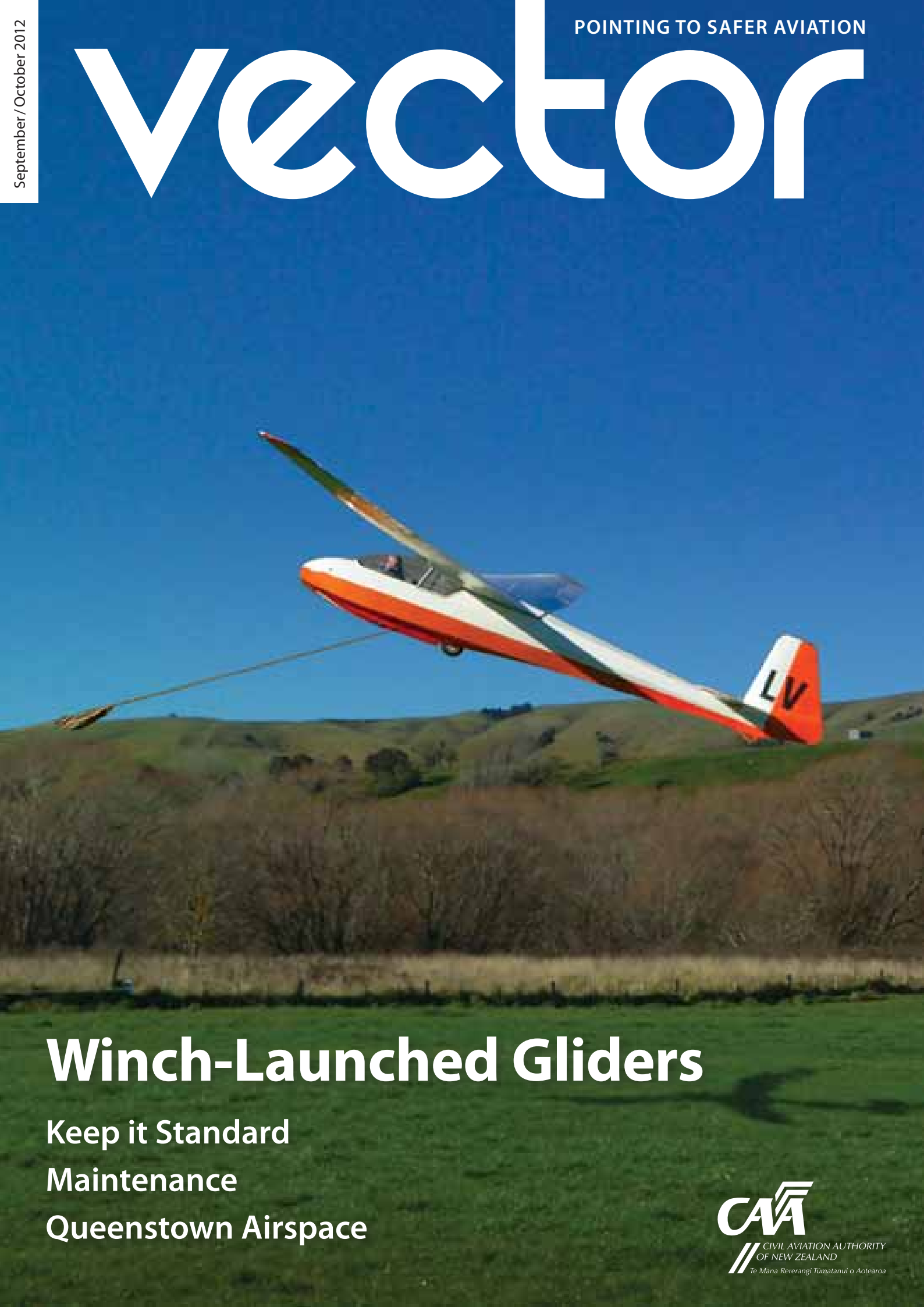

Winch-Launched Gliders

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Queenstown Airspace

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

vector

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Maintenance

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Queenstown Airspace

Big changes are in the air at Queenstown – new instrument procedures, changed airspace, new visual reporting points, all effective on 15 November 2012. We give you an overview, together with a strong message to be familiar with the changes before they happen.

Cover photo: A winch-launched glider at Gliding Wairarapa. See the article on page 4.

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Stall – not Spin – not Crash

Photo Courtesy of Alan Marks, New Zealand Police.

The article *Stall – Spin – Crash* in the May/June 2012 issue described a stall/spin accident with a very fortunate outcome – despite striking the ground in a flat spin, the aircraft remained substantially intact, although somewhat battered, and the pilot was not seriously injured.

Part of the article was a first-hand account by the pilot, in which he described an erroneous attempt to level the wings with aileron during a wing-drop stall, and applying opposite rudder. By this time, however, the aeroplane was in a steep nose-down spin, and not having been trained in spin recovery, the pilot's recovery attempts led to the flat spin situation.

Some feedback was received from several readers, who felt that the article did not emphasise sufficiently the correct recovery technique for a wing-drop stall. The main point here is that the first step in stall recovery is to reduce the angle of attack of the wing. Depending on the characteristics of a particular aircraft, this may require a positive but smooth forward movement of the control column, or simply an easing off of the back pressure being applied by the pilot. In either case, use just enough control movement to unstall the wing, rather than shoving the controls forward so abruptly that you end up in a steep nose-down attitude. Not really what you need at low level.

Attempting to pick up the 'dropped' wing with aileron will effectively increase the angle of attack on that wing and exacerbate its stalled condition. Also, the increase in drag from the 'down' aileron will cause yaw towards the lower wing, and without prompt corrective action by the pilot, the aeroplane could enter a spin. Throughout the stall recovery, the ailerons must remain neutral until the wing is unstalled, even though this might seem counter-intuitive at first.

Use of rudder must be restricted to keeping the aeroplane straight during the recovery. The aircraft will naturally tend to yaw in the direction of the dropped wing, so use of enough rudder to prevent that yaw is all that's needed. Sudden application of full opposite rudder could lead to an abrupt 'flick' into a spin in the opposite direction, to your great surprise.

A much more detailed description of the aerodynamics of stalling and spinning can be found in the GAP booklet *Spin Avoidance*, which is available on the CAA web site or for hard copy, email: info@caa.govt.nz. *The Spin Avoidance* GAP is essential reading for all pilots, regardless of whether or not they intend to undertake spin training. If not, it would be a good idea to at least have an instructor demonstrate a spin in an appropriate aircraft type, so you recognise what's happening and can apply the right recovery actions.

As in the original article, we will leave the last word to the pilot.

Do your homework – it is important to understand your aeroplane and its stall characteristics at different weights, and be familiar with what is in the flight manual.

And if you are trying something new (in order to increase your experience) – get an (appropriately qualified) *instructor involved before you get in over your head.* ■

Winch-Launched Gliders

Gliding, but not as you know it.

A glider that's launched by a powered winch can accelerate to over 50 knots in about three seconds, and climb to 2800 feet in the first minute after takeoff. Not bad for an engineless aircraft, which can be likened to the acceleration and climb of a commercial jet.

With 11 separate glider winch launching areas situated throughout the country, transiting pilots need to know their locations, understand the potential dangers they pose, and take some precautions to maintain safety. The following example illustrates those dangers.

A Close Encounter

Recently, an aeroplane was transiting through an active glider flying area in ideal weather conditions with very good visibility. The pilot was unfamiliar with the local area and had become preoccupied with navigating using his GPS. When he looked up to recommence his forward visual scan, he noticed a thin line running down the centre of his windscreen. At first the pilot thought it was a crack in the windscreen, but on closer inspection he saw that it was a cable outside the cockpit. He took immediate evasive action to avoid what was a glider winching cable attached to a glider.

The pilot, being unfamiliar with the area, did not know that glider winch-launching operations were taking place and was not listening out on the local frequency. He had not checked his charts ahead of time to see if his planned route would take him through any glider flying areas, so was unprepared for the possibility of encountering gliders along the route.

All such incidents should be reported to the CAA by following the process on the CAA web site, www.caa.govt.nz, "Report Occurrences Online".

Some Statistics

Max Stevens, Executive Officer of Gliding New Zealand, says on average, winching accounts for about 25 per cent of all glider launches undertaken by the 28 various gliding organisations.

"A number of organisations opt to winch launch as their primary launching procedure, with roughly 4800 launches taking place each year. Winching is cheaper and quieter than aero-towing, and is well suited to basic training operations," Max advises.

Safety First

Other reports of powered aircraft flying though winching areas during gliding operations demonstrate the need for transiting pilots to understand these areas and to follow some accepted practices to maintain safety. For example:

- Airfields that winch launch gliders can be active at any time during the day. These winching areas are marked on visual navigation charts (VNCs) with a red glider symbol and a "W", plus the maximum winching altitude.
- Always check the VNCs at the start of any flight to see if the planned route will transit a glider winching area.
- When transiting a glider winching area, listen out on the frequency listed on the VNC (either 134.45 MHz or 119.1 MHz) to hear if any operations are in progress, and their nature. An exception is the gliding club at Puhi Puhi, which uses the frequency 133.45 MHz.
- Gliders have right of way over powered aircraft.
- Avoid flying directly over a winch-launching airfield, and stay clear of the circuit area unless you intend to land.

- If you intend to land, establish communication with the ground staff well in advance of your arrival.
- Familiarise yourself with the local terrain and the airfield. If you see a glider lined up for takeoff, treat it as a potential hazard and give it a wide berth. Remember, winch-launched gliders can accelerate and climb quickly, so take precautionary action and don't let one catch you unaware.
- When a glider is winch-launched, it climbs at about a 45 degree angle, so the pilot's forward vision is limited. The glider's ability to manoeuvre is also severely restricted, so don't fly near its takeoff path.
- Maintain a constant visual scan when transiting through winch-launching areas. Gliders have a narrow profile and can be difficult to spot, especially those at a similar altitude to you. Gliders are also likely to be encountered in the vicinity of the site well above the maximum winching height when conditions are favourable for soaring.
- Winch cables can be difficult to see when attached to gliders. Typically these cables are thin, being only a few millimetres in diameter. The glider pilot may also release the cable at any stage up to the maximum launch height, leaving the cable to fall away under a small drogue parachute.

Some Winching Phraseology

By listening to a gliding club's active frequency, pilots can gain an indication of when a glider will become airborne, and its approximate location. The following phraseologies will be exchanged between the glider pilot and winch driver during a launch.

- "Take up slack" – when the glider pilot instructs the winch driver to pull in the cable slowly to increase its tension.
- "All out" – the pilot instructs the winch driver to apply power and start the launch sequence. This command should signal to others that a glider launch has begun.
- "Winch reducing power" – when the driver signals to the pilot that the glider is nearing its maximum launch altitude. The pilot will release the cable within one or two seconds of this call.
- Gliding organisations will broadcast warnings on the local area frequency to indicate the start of a launch. Although organisations use ground 'spotters' to check that the circuit area is clear before a launch, this is limited by the spotters' ability to see other aircraft.

Visual Navigation Chart Depiction

This symbol and the accompanying "W" indicate a glider winch-launching area and the maximum launch height.

Winching Locations and Activity

Note – except for the four indicated winching-only launching areas, gliders may be launched by either winch or towplane.

Club and Site	Average annual winch launches *(over last 5 years)*
Auckland Gliding Club – Drury	1,714
Nelson Lakes Gliding Club – Lake Station (Winching only)	1,287
Kaikohe Gliding Club – Kaikohe, Northland (Winching only)	611
Jury Hill Gliding Club – Papawai, Wairarapa (Winching only)	429
Northland Gliding Club – Puhi Puhi (Winching only)	301
Canterbury Gliding Club – Springfield	145
Central Otago Gliding Club – Alexandra	134

In addition to those listed, clubs in Matamata, Hastings, Stratford, and Omarama will occasionally winch-launch gliders.

More Information

For general gliding information, refer to the Gliding New Zealand web site, www.gliding.co.nz ■

John Lanham in an Albatros D Va reproduction from The Vintage Aviator Limited collection, in preparation for an air show at Hood Aerodrome, Masterton. Photo courtesy of John Freedman.

John Lanham Leaves CAA

John Lanham will leave the CAA on 1 October, after 12 years as the General Manager of the General Aviation Group.

John joined the RNZAF as a pilot in 1961, and did his flight training at the Royal Air Force College, Cranwell, graduating in 1964 with the Sword of Honour. On his return to New Zealand, John flew operational tours on Vampires, Canberras, Strikemasters, and Skyhawks in New Zealand, Australia, and South-East Asia. He later commanded Numbers 14 and 75 (Fighter) Squadrons and the RNZAF Strike Wing of three squadrons.

John left the air force as a Wing Commander in 1987 to become Chief Executive of Rex Aviation, a company that operated Ansett New Zealand Regional commuter services, and managed business jet operations for some leading companies. For John it was an exciting period, that included flying as captain on the C208 Caravan, F27 Friendship, and BAe125.800 business jet aircraft.

In May 2000, John joined the CAA as General Manager of the General Aviation Group.

"New Zealand aviation was emerging from perhaps its most significant change period of all time, having seen the breakup of the Ministry of Transport into component parts, adoption of government user-pays philosophy, and the introduction of the newly written Civil Aviation Rules," John says.

A major reorganisation of the CAA also took place in May 2000. John extended the functions of the GA Group to specifically focused sub-sectors of fixed wing, rotary wing, agricultural operations, sport and recreation, and airworthiness. Recertification of the entire GA sector (around 400 certificated operators) under the new rules was the major task for the first years of the decade.

"The decade following 2000 was hugely successful for the GA community, including the acceptance of business management systems, operations expositions, quality assurance, and safety management systems. The result has been a steady maturing of the sector, evidenced most strongly by the record of over seven years fatality-free operations for certificated fixed-wing operators, and 10 years for rotary-wing operators," says John.

Other CAA highlights for John included the rewrite of Part 21, enabling new and old technology aircraft to be placed in the most suitable subcategory for operations; and the introduction of Part 115 *Adventure Aviation – Certification and Operations*. John believes that the next few years will see the evolution of astonishing technological advances in General Aviation.

"It will be a fascinating period – in even five years' time, we will see things operating that we are not aware of now."

John has had a lifelong interest in military and vintage aircraft, and display flying. He flew his first low-level aerobatic display in 1964 in a Jet Provost T4 at his Wings course graduation. Since then, he has flown in three air force aerobatic teams, leading two of them, including the 1982-83 Kiwi Red A4K Skyhawk team. John's Kiwi Red team scored a world first in flying the first 'plugged barrel roll' in which team members flew the manoeuvre with the aircraft connected by a probe-and-drogue refuelling hose. John continues to fly a variety of warbird aircraft, from WWI aircraft to jet fighter trainers.

Display and adventure flying is on the immediate agenda for John, "as a practitioner rather than overseer", including the organisation of the display flying programme for the Wings Over Wairarapa airshow in January next year.

Director of Civil Aviation, Graeme Harris, says, "John has made a valuable contribution to the CAA during his 12 years with the organisation. That contribution built on an already impressive contribution to aviation in the military, in the commercial environment, as an air show display pilot and a warbird enthusiast. He will be sorely missed at the CAA." ■

Keep it **Standard**

Seconds after a Beech 1900 landed on Runway 29 at Wanaka Aerodrome, a Squirrel helicopter hurtled across the runway behind it. Although a safety investigation found that neither aircraft was at risk, experience has shown that in the aviation industry, fortune doesn't always favour the brave. Next time it could be a different story.

At an uncontrolled aerodrome you become the air traffic controller. Responsibility for your safety, and the safety of others in the vicinity, falls on your shoulders. Sounds like a lot of pressure? No sweat, just follow the standard procedures in *AIP New Zealand*.

By 'sneaking' in behind the Beech, the Squirrel had not followed standard joining procedures. The AIP procedures for Wanaka state, "Approach, landings, takeoffs and departures for all aircraft, including helicopters, must be via the taxiways, runways and normal circuit patterns."

Your experience, who you fly for, the extent of your local knowledge, or the incentive of fuel savings, are not valid reasons for cutting corners and disregarding procedure. This applies to everyone.

Besides being a safety concern, diverging from standard procedures may cause confusion and stress for other pilots. Aircraft in and around an airfield may be piloted by inexperienced student pilots, including pilots unfamiliar with the aerodrome.

Warren Sattler, the chief flying instructor at Ardmore Flying School, has logged over 30,000 hours and believes Ardmore operates smoothly because pilots follow a set of tried and tested operating procedures.

"This gives both student and experienced pilots the ability to determine, with a high degree of certainty, what the other is thinking when operating in and around the aerodrome," Warren says.

CAA Senior Technical Specialist, Merv Falconer, says there's no excuse for pilots not conforming with the aerodrome operator's instructions, "unless there is an emergency".

Pilots who are not comfortable with the procedures at a particular aerodrome can bring their concerns to the operator as a collective user group, and review the AIP instructions.

"Procedures can be reviewed and changed; however, remember that the aerodrome operator has the final say on this matter, and is required to establish safe operating conditions and be compliant with the Civil Aviation Rules," Merv says.

Some Considerations

» Published *AIP New Zealand* procedures are the result of local submissions, and have been reviewed by the CAA.

» Circuit directions, including non-standard circuits, are described in *AIP New Zealand*. Circuits are left-hand unless stated otherwise (rule 93.351).

» At some aerodromes, such as Taupo and Paraparaumu, joining overhead should be avoided. Other aerodromes, such as Masterton and North Shore, recommend joining overhead.

» Aerodrome operators control the use of an aerodrome and may require pilots to have permission before using the aerodrome. The methods for establishing permission are found in the AIP aerodrome charts.

» If you need clarification of the local procedures not listed in the AIP, talk to your aerodrome operator.

More Information

AIP New Zealand is available free on www.aip.net.nz.

Printed AIPs and aeronautical charts can be ordered from Aeronautical Information Management on 0800 5000 045, or its web site, www.aipshop.co.nz. ■

Photo: istock.com/choja

Maintenance

Aircraft maintenance can be carried out by Licensed Aircraft Maintenance Engineers (LAME), or by certificated maintenance organisations, but there are specific requirements for each situation. Here we discuss the accountabilities of General Maintenance versus Certificated Organisation Maintenance and the misunderstandings that can occur.

General Maintenance

The maintenance and release to service of all New Zealand registered aircraft required to have an Airworthiness Certificate, and the components to be fitted, must be done in accordance with the general maintenance requirements set out in Part 43 *General Maintenance Rules*. The Part 43 objective is to establish a standard for aircraft maintenance that ensures the continued validity of the Airworthiness Certificate. (There are some exceptions or additional requirements specified in other rules.)

What must be remembered, is that the rules provide the minimum maintenance standards for continued airworthiness of aircraft. Part 91 *General Operating and Flight Rules* defines the maintenance that is required and specifies when it is to be done, and Part 43 describes how that maintenance is to be carried out. Rule 43.54 *Maintenance required under Part 145*, specifies when maintenance is to be carried out by a Part 145 certificated organisation.

Part 43 outlines the standards for those who provide maintenance services for operators of:

- air transport aircraft less than 5700 kg maximum certified takeoff weight, or having nine or fewer passenger seats;
- non-air transport commercial aircraft;
- private aircraft.

Certificated Organisation Maintenance

If you carry out air operations under an air operator certificate, or adventure aviation operations under an adventure aviation operator certificate, with aircraft of more than 5700 kg maximum certified takeoff weight, or with seating capacity for 10 or more passengers, your aircraft must be maintained and released to service by an organisation certificated under Part 145 *Aircraft Maintenance Organisations – Certification*. This also applies to any size of air transport aircraft that are subject to a maintenance review.

A certificated maintenance organisation with an 'A4 rating' may maintain aircraft under 5700 kg maximum takeoff weight or with fewer than 10 passenger seats. The aircraft to be maintained under the A4 rating must be listed on the organisation's capability list.

If your organisation doesn't have an A4 rating, and wants to extend its capability to this area, it is a straightforward application process with the CAA to get that changed, so long as you have the capability.

Mixed Maintenance

In several recent cases, certificated organisations had been carrying out maintenance on aircraft that were released to service with the individual's signature and their AME licence number. In these cases, the maintenance had been recorded on the certificated organisation's maintenance worksheets.

Photo: istock.com/apomares

Using such documents suggested that the maintenance had been carried out under the umbrella of the certificated organisation, but in reality it wasn't. The certifying LAME with their signature and licence number on the bottom of each maintenance record, or release to service document, was responsible as an individual for the work, and bore the liability for it being carried out correctly, not the organisation.

Phil Hone, CAA Manager Air Transport Maintenance, is bemused over why certificated maintenance organisations would mix their maintenance tasks.

"For example, the certificated organisation must have documented procedures in place for all maintenance activities, which generally provides a much higher level of maintenance and control than individual LAMEs can provide. A certificated organisation has more flexibility, in that it can authorise suitably trained individuals to carry out maintenance who otherwise would not be able to, because they do not hold an AME licence or rating," Phil says.

In a recent incident, a pilot approached a Part 145 certificated organisation and requested a routine inspection on his aircraft, which was being operated privately. The organisation agreed, and the pilot also carried out some of the maintenance tasks. When the engineer assigned to the work was asked about his responsibility regarding direct supervision of the pilot, he assumed that the organisation was responsible under its Part 145 certificate. However, the organisation didn't have an appropriate rating for the aircraft, had not trained the pilot in company procedures, or assessed his skill in being able to carry out the work. The work could have been carried out by the individual LAME with the appropriate ratings. Had this been the case, the work would need to have been recorded on documents other than those with the certificated organisation's logo. Further, the LAME would be responsible as an individual licence holder.

Had the organisation possessed the appropriate rating, and added the aircraft to their capability list, the pilot could have been authorised accordingly, and been able to assist in the work. In this case, the liability would be the responsibility of the organisation.

Clearly, it is possible for an individual LAME to carry out maintenance using the facilities and equipment provided by a Part 145 certificated organisation, but there must be demarcation between who is responsible for what, and maintenance must be recorded on appropriately-headed documents. If you are working under the direction of a Part 145 certificated organisation, then record maintenance on that organisation's documents, and sign for the work adding your authorisation number. If you use your licence number, it could be interpreted that the work was not carried out using the practices and procedures of the Part 145 certificated organisation, and you may have responsibility for any liability.

"The CAA's view is that it would prefer Part 145 certificated organisations did not mix maintenance activities. If your organisation is certificated, it is an easy task to extend capability within a rating, and consistency of operating processes and procedures can be maintained. Equally, adding a rating is not an onerous task.

"By having added ratings and extended capabilities, an organisation is in a better position to respond to customer (and potential customer) needs. This overcomes the problems discussed, and ensures that all maintenance is done under the control of the certificated organisation to the same standards and controls, using the facilities, capabilities and equipment available," Phil says.

More Reading

On the CAA web site, www.caa.govt.nz, under "Rules" or "Advisory Circulars":

Part 43 *General Maintenance Rules*

Part 119 *Air Operator – Certification*

Part 145 *Aircraft Maintenance Organisations – Certification*

AC43-1 *Aircraft maintenance*

AC91-12 *Aircraft maintenance programmes*

AC119-5 *Aircraft maintenance programmes*

AC145-1 *Aircraft maintenance organisations* ■

Putting the **ACID On**

ACID – Aircraft Identification, more commonly known as Flight Identification (FLT ID) is a key component of a Mode S transponder reply, and if not entered correctly before flight, can result in corrupted data being displayed on Air Traffic Control radar screens, or the system rejecting the data entirely.

FLT ID is not to be confused with the 24-bit aircraft address permanently programmed into the transponder. Every aircraft on the New Zealand register has a unique identifier specific to that airframe, and this comprises the country code for New Zealand and the number allocated to that aircraft on registration.

The aircraft address can be found on the aircraft register, available on the CAA web site, www.caa.govt.nz, under "Aircraft", and is expressed in both binary and hexadecimal format. It is entered by an avionics technician, and cannot be changed without specialised equipment. Rule 91.247 requires that the allocated address be programmed into a Mode S transponder, and Airworthiness Directive DCA/RAD/43 requires initial and periodic checking to ensure that the correct code has been entered.

FLT ID, on the other hand, is entered by the flight crew, and must correspond exactly to the entry in field 7 of the ICAO Flight Plan Form. This will be the operating agency three-letter ICAO designator plus flight number, or the nationality and registration markings, as applicable. These are entered as, for example ANZ456 or ZKABC, without spaces or dashes, although some equipment may require spaces to be entered *after* these, to make up seven characters. When the aircraft is not operating on a flight plan, pilots should still ensure that FLT ID is entered.

On some airline aircraft, the FLT ID is entered via the FMS (flight management system); on other aircraft, via the panel-mounted transponder control head. The method may not be readily apparent, so this is where familiarity with your equipment is important. Some transponder types can be configured so that they require FLT ID to be entered before they will operate, or so that the FLT ID will automatically default to the nationality and registration markings stored in the 24-bit address. There are numerous variations between manufacturers, and even if the FLT ID entry method is not obvious, the answer should be in the manufacturer's manual. Many of these are available for free downloading from the manufacturer's web site; if not, ask your LAME if they have access to a copy.

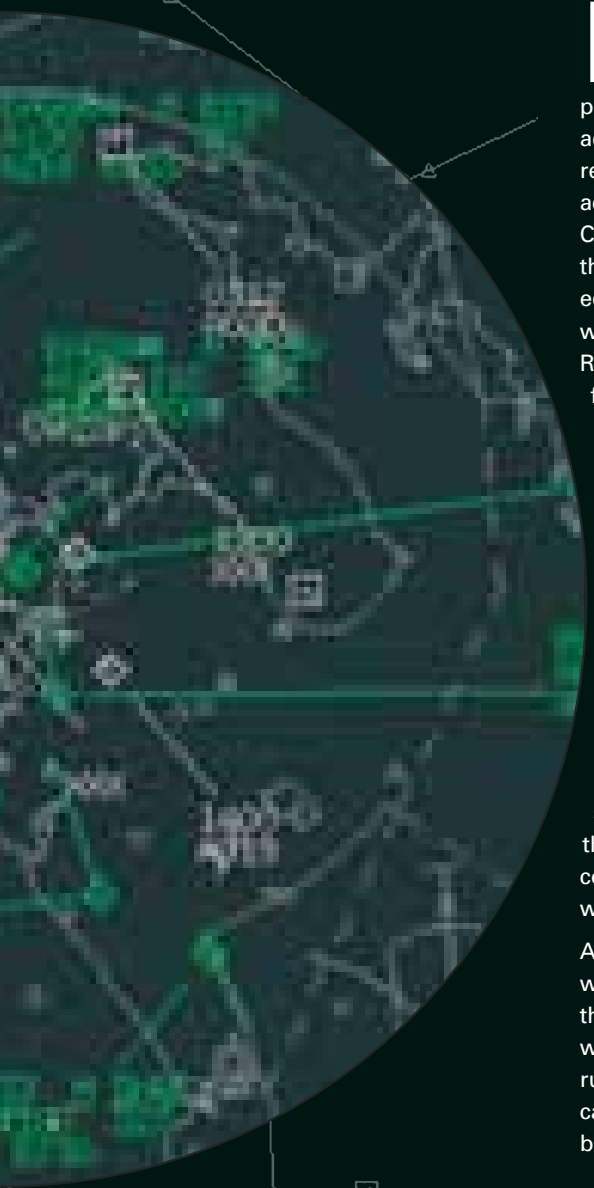
How would you even know at a glance if your transponder is Mode S capable? Have a look at the form CAA 2129 in the flight manual binder, and it will list the transponder make and model. Use your favourite search engine to look it up, and you should find the specifications, and, with luck, the operating manual. An additional clue might be the presence of function buttons other than the normal OFF-SBY-ON-ALT and code selector knobs.

Despite this topic being discussed in some detail in the article *Transponder Mode S* in the May/June 2011 issue of *Vector*, Airways are still encountering instances of incorrect or no FLT ID, and occasionally incorrect aircraft address, in Mode S transmissions. The Airways radar displays are not currently configured to display FLT ID routinely, as the current ratio of good to bad FLT ID data is about 30/70, with most of the 'good' data coming from ADS-B-capable aircraft. Now is the time to be getting this right, as this will become increasingly critical as the ground-based technology is updated. ■

Radar image courtesy of Airways

Transponder **Mandatory**

Ever since controlled airspace in New Zealand was designated as transponder-mandatory (TM), Airways has accommodated a certain level of non-transponder-equipped traffic activity at and about aerodromes.



Because of a recent safety event, Airways, in consultation with the CAA, has reviewed the current procedures across its controlled aerodromes. It was evident from this review that the level of non-transponder activity is beyond that intended by the Civil Aviation Rules. Rule 91.541 requires that aircraft operating in TM airspace be equipped with an operable transponder with at least Modes A and C capability. Rule 91.247(c) requires authorisation from the relevant ATC unit for an aircraft without an operable transponder to be operated in TM controlled airspace. Up until now, a certain amount of leeway has been allowed, but future authorisations will normally be confined to circumstances such as a transponder malfunction in flight, or an aircraft being ferried to a maintenance facility to have a new transponder installed or an inoperative one repaired. Such authorisations are decided by the senior ATS person on duty, and require the consent of all sector and unit controllers in whose airspace the aircraft will be operating.

As a result of the review, Airways has written a letter to operators of aircraft that regularly operate into TM airspace without a transponder, emphasising the rules requirements for transponder carriage, and the authorisation criteria to be applied after 31 October 2012.

Why TM?

TM airspace was established to enhance the performance of ground-based and airborne surveillance systems (basically, ATC radar and ACAS respectively). By operating your transponder on Mode C in TM airspace, you are letting both ATC and ACAS-equipped traffic know where you are at all times. This assumes, of course, that you are within radar (or, in the case of Queenstown, multilateration) coverage; if not, your transponder will be replying only to aircraft equipped with ACAS (airborne collision avoidance system – sometimes also called TCAS, depending on the equipment manufacturer – the T stands for Traffic).

While all controlled airspace is transponder mandatory, the converse is not true. Special use airspace may also be designated TM; in particular, a number of mandatory broadcast zones (MBZs) around the country are also TM, generally in high-traffic areas (Auckland City and Whenuapai MBZs) or around aerodromes with regular passenger transport. These are Kaitaia, Kerikeri, Whangarei, Whakatane, Taupo, Wanganui, Paraparaumu, Westport, Hokitika, and Timaru MBZs.

Rule 91.247(c) is specific about obtaining authorisation to operate in TM controlled airspace without a transponder. The problem with an MBZ is that there is no "ATC unit having jurisdiction over the relevant airspace…". It's a bit like operating in an MBZ without an operable radio – rule 91.135(c) provides for such operation only if the flight is to enable repairs to that radio. So if you are faced with flying to an aerodrome in a TM MBZ to get your transponder fixed, what can you do? In the absence of a rule-based solution, it would pay to at least let ATS (air traffic services) know – use your radio to call Christchurch Information, for example. Comply with all MBZ procedures, and be especially diligent with your radio work in the vicinity of the destination aerodrome. It would also pay to check the airline schedule times so you can avoid mixing it with ACAS-equipped traffic, whose crew might be wondering why they can't see you on the ACAS display. And for the latter crews, please refer to it on the radio as ACAS or TCAS, not the "fish-finder" or the "Discovery Channel". That's not Plane Talking! ■

Queenstown Airspace

Change is in the air at Queenstown – literally. On 15 November 2012, there will be major airspace changes in the Queenstown area, affecting all designated airspace, controlled and uncontrolled. There will also be changed IFR and VFR procedures, and the need for pilots to have current charts and other relevant aeronautical information will be paramount.

The reason for the changes is the redesign of the IFR arrival and departure procedures and instrument approaches, particularly the area navigation (RNAV) procedures using satellite guidance. Inherent in the changed IFR procedures are several new IFR reporting point names to be familiar with – significant among these is the change of BUNGY to LARAV. These procedure changes will permit more efficient traffic management and cater for traffic growth in the foreseeable future.

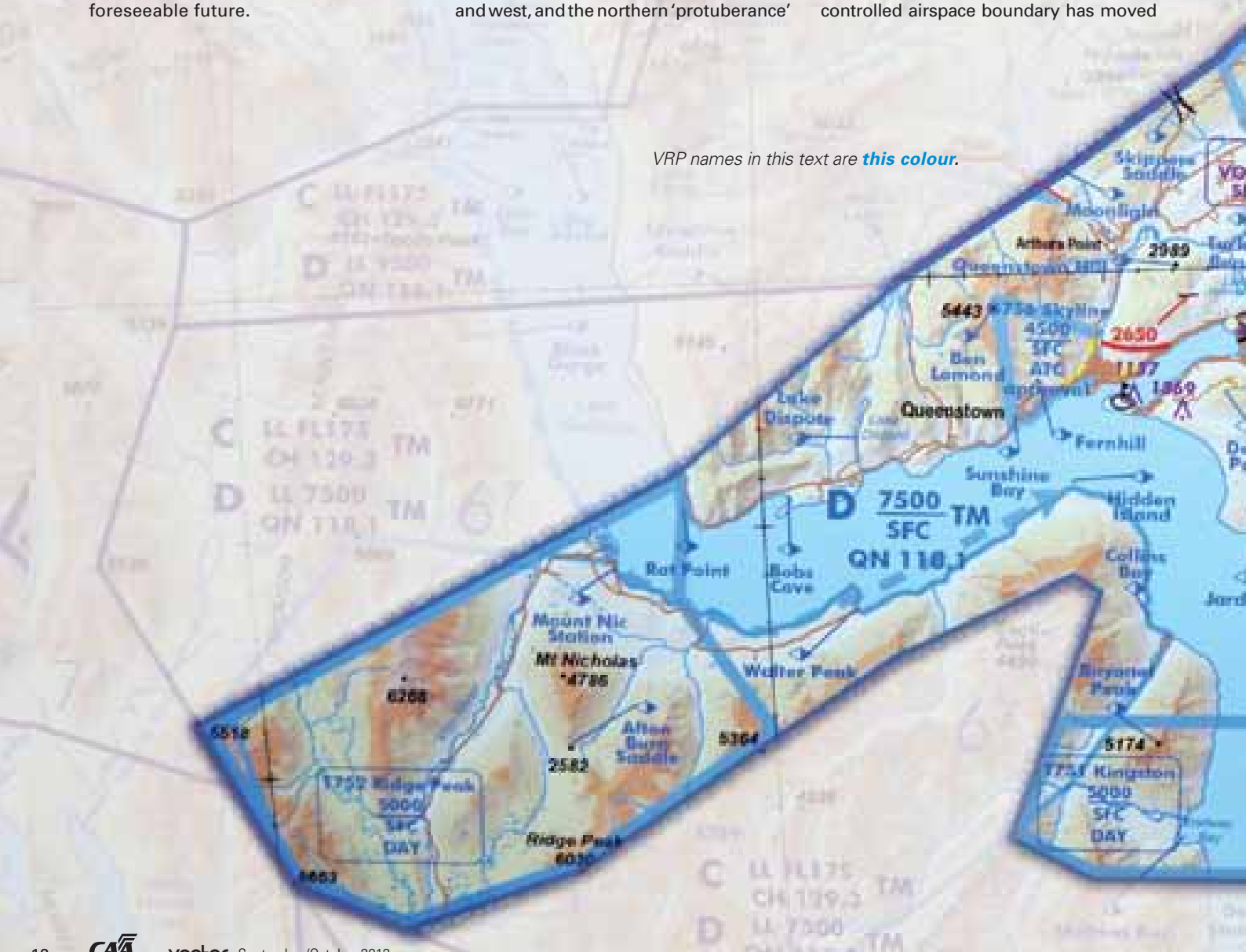
The new arrival and approach procedures have been designed for best terrain fit, rather than to fit in with existing airspace, and this has driven the changes in both the upper and lower airspace. All of the significant changes are within a 30-NM radius of Queenstown.

Control Zone

The most obvious of the changes is the revised Queenstown Control Zone (CTR). It has been extended to the east, south, and west, and the northern 'protuberance' of the old CTR has disappeared. The zone extensions are not necessarily bad news for VFR operators – VFR transit lanes have been included on all three of these extensions. Some new visual reporting points (VRPs) have also been added; these are depicted on VNCs (visual navigation charts) C10 and C14.

To the west, the CTR boundary has moved out by some 11 NM, but the new portion of the zone below 5000 feet comprises the Ridge Peak Transit Lane (T752). The actual controlled airspace boundary has moved

*VRP names in this text are **this colour**.*



only about one mile westwards from the old position – but note that it is no longer a straight line. Note also that **Rat Point** VRP has moved 'round the corner' to its real position – the old Rat Point VRP was actually at White Point. A new VRP **Black Gorge** has been established on the western lake shore about 5 NM north of **Mount Nic** VRP.

VFR pilots arriving from the south will encounter the Kingston Transit Lane (T751, surface to 5000 feet) about 4.5 NM south of **Wye Creek**, or just over 2 NM north of the new **Devils Staircase** VRP. On the opposite side of the lake, a new VRP has been established at **Halfway Bay**. As T751 is only about 3 NM between its northern and southern boundaries, clearance to enter the CTR should be obtained as early as possible, preferably no later than passing Devils Staircase.

At the eastern end, the zone extends to within 4 NM of Cromwell, but the outer 5 NM or so is the new Kawarau Transit Lane (T750), up to 4500 feet. The old Kawarau General Aviation Area (GAA) G754 has been disestablished, but pilots should still be on the lookout for occasional hang glider and paraglider activity within T750. Victoria Bridge VRP has been renamed **Victoria** to avoid confusion with **Bungy Bridge** position reports, and new VRPs are established at **Bannockburn** and **Cardrona Township**. Pilots following the gorge from the east should note that the T750/CTR boundary is about a mile closer to Victoria than the old G754/CTR boundary.

Visual Reporting Points

Several other new VRPs have been established, some inside the CTR, and others on or close to the CTR boundary. Clockwise from the west, these are: **Lake Dispute**; **Fernhill**; **Queenstown Hill** (although on a Topo50 map, the actual VRP is located at Sugar Loaf, the highest point on the massif generally known as Queenstown Hill); **Tucker Beach**; **Skippers Saddle**; **Lake Hayes** (at the northern end); **Crown Saddle**; **Quartz Knoll**; **Coal Pit Saddle** (distinctive saddle some 2 NM south of Gibbston); **Double Cone**; and **Bayonet Peak**. The Cardrona Skifield and Mount Scott VRPs have been disestablished.

General Aviation Areas

Within the CTR, there are three GAAs:

- G753, Crown Terrace (surface to 3000 feet), which is unchanged.
- G755, Coronet Peak (surface to 5500 feet), replacing G751. The change is the loss of the northern portion, commensurate with the change in the CTR boundary. What was the northern portion is now outside controlled airspace altogether, and the southern boundary is unchanged, ie, still Malaghans Road.
- G756, Skyline (surface to 4500 feet), replacing G750, Queenstown. This is now bounded by a straight line from Sunshine Bay jetty to Ben Lomond; another straight line from Ben

An extract from VNC C10, giving an overview of the new Queenstown Control Zone. Note in particular the extensions to the east, west, and south, and the new transit lanes.

Lomond to intersect Gorge Road about halfway between Industrial Place and Bowen Street; Gorge Road itself as far as the Shotover/Stanley Streets roundabout; a line from there to the Queenstown wharf (opposite Ballarat Street); then the lake shoreline back to the Sunshine Bay jetty. The activation status of G756 was still to be finalised at the time of printing.

As previously mentioned, the Kawarau GAA (G754) has been disestablished and replaced, in effect, by T750.

The south-western boundaries of the Omarama GAA (G957) have been amended to align with the changes to the Queenstown controlled airspace, and the northern boundary, although unrelated to the Queenstown changes, has had a slight adjustment due to the decommissioning of the Mount Mary VOR/DME. That change also affects the adjacent Two Thumbs GAA (G958). Users who have the airspace-defining coordinates programmed into their navigation systems can find the updated coordinates on the Air Navigation Register, available on the AIP web site, www.aip.net.nz.

Other Airspace

There are major changes to the associated Christchurch and Queenstown Control Areas, and these will be evident on studying the VNCs. There are now seven separate new CTAs, each with an upper limit of flight level (FL) 175 (ie, 17,500 feet, on a pressure datum of 1013.2 hPa), but with lower limits varying from 6500 to 13,500 feet. These are overlaid by three CTAs with vertical dimensions from FL175 to FL600. Note that none of the new CTA boundaries is defined by a DME distance from what was Slope Hill VOR/DME – to be renamed Queenstown (QN) VOR/DME.

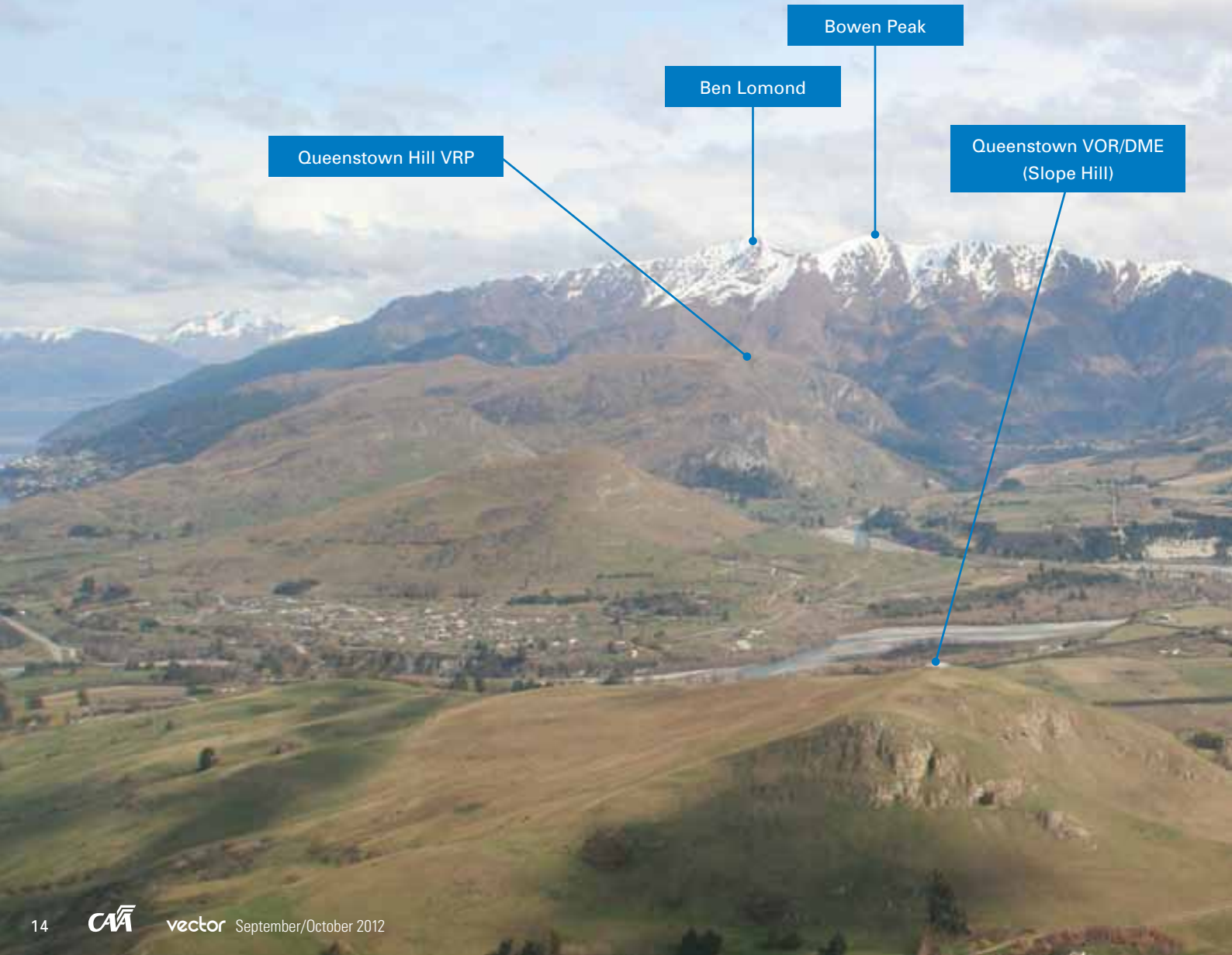
Observant users will notice the addition of a new CTA to the south of the upper airspace – this extends from FL285 to FL600, and is to accommodate new great-circle routes between Australia and South America.

Both the Fiordland and Wanaka Common Frequency Zones (CFZs) have boundary changes to conform to the redesigned Queenstown CTR.

All controlled airspace below FL175 is Class D; all above is Class C; and all is transponder mandatory (TM).

Charting

The charts affected by the changes are; VPC A2, VNCs B4, B6, C10 and C14; and the relevant Enroute and Area Charts. New instrument arrival, departure and approach charts will be effective on 15



November 2012, with a stand-alone AIP Supplement featuring a 'preview' of all these charts to be issued on 18 October. Printed copies of this supplement will be distributed only to *AIP New Zealand* Vols 2 and 3 subscribers, but will also be available free of charge from the AIP web site, www.aip.net.nz. IFR users also need to take particular note of new PBN implementation criteria in the New Zealand FIR – see AIP amendment 6/2012, effective 15 November, AIP Supplement 136/12, and AC91-21 (release date imminent). There will be an additional AIP Supplement issued on 18 October, with full details of the Queenstown airspace changes. The Supplements should by now be in subscribers' hands, so please take the time to study them carefully.

IFR users will notice a significant difference in the Vol 3 Queenstown arrival, approach, and departure charts – these are now presented in an A4 landscape format, folded in the same manner as, say, NZAA 2- 53.2, to fit the A5 AIP binder. This was necessary in order to fit the required information on one page, without shrinking it to the point of unreadability.

Information

Airways staff from Queenstown ATC will be running two 2-hour presentations to familiarise local VFR users with the forthcoming changes. The first will be held in the Queenstown terminal building on Wednesday 10 October 2012, starting at 1800 hours; the second will be in the Armstrong Room at the Wanaka Centre, on Thursday 11 October, also at 1800.

If, after the implementation date, you find that you're unsure of any relevant points while out aviating, clarify them before attempting to operate in controlled airspace. Don't forget that Queenstown Information is available on 128.9 MHz, and that they are happy to help. The service is free – don't be afraid to ask.

As with most changes of this nature, there will usually be someone with out-of-date charts and publications, or worse still, without any at all, who will come blundering into the area and upset the locals. Don't let this be you – order your VNCs as soon as they are available for sale, and familiarise yourself with the differences. Even if you are not an AIP subscriber, take the time to read all the relevant information on the AIP web site – including the two AIP Supplements mentioned earlier. All the web site information is yours to download free of charge. ■

Looking westwards from overhead the Lake Hayes area. Three VRPs are labelled, as well as four other useful landmarks.

Microlight Carbon Monoxide **Poisoning**

An undetected carbon monoxide (CO) leak into an enclosed cabin can be fatal. This deadly gas is odourless, colourless, and tasteless, making its presence very difficult for a pilot to identify without the use of a detection device.

For microlights, the installation of a detector isn't compulsory (rule 103.221(c)(1)), but if your microlight has an enclosed cabin, using one could save your life. Detectors are also inexpensive, costing as little as nine dollars for an adhesive detection card which can last up to 90 days. You'd be mad not to install one.

Danger Danger

A leak in the manifold heating system is the usual cause of CO exposure, but there have also been reported instances of air vent faults and firewall faults causing CO leaks. Any degree of exposure can be dangerous as CO combines with haemoglobin avidly and is transported by the blood in preference to oxygen. After being absorbed into the bloodstream, a lengthy recovery time will be needed, as eliminating CO from the body is difficult.

Symptoms may include

- Headaches
- Nausea and dizziness.

Exposure to higher concentrations may cause

- Impaired judgement
- Impaired memory
- Flushed cheeks
- Cherry red lips
- Convulsions
- Death.

With prolonged exposure, the process of cognitive thought becomes extremely difficult, if not impossible.

If you identify CO presence in the cockpit or notice any of these symptoms, isolate the source, ventilate the cabin with fresh air, take oxygen if available, and make a precautionary landing. ■

Learn More

"Carbon Monoxide Poisoning", March/April 2012 *Vector*.

Report any CO occurrences using: www.caa.govt.nz/report, or Tel: 0508 4 SAFETY (0508 472 338).

Photo: istock.com/vesilvio

Sector Risk Profiles

The CAA is developing risk profiles for some aviation sectors. A Sector Risk Profile is a structured means of identifying and assessing the various risks that are faced by an entire sector of industry. The purpose is to ensure that the CAA understands the nature of risk in a sector, and then targets the areas of greatest risk. They are quite different from the Risk Profile Ratings that the CAA uses to assess an individual operator's ability to manage their risk.

The introduction of sector risk profiles reflects a change in thinking that recognises that rules are not the only way to effect safety improvements. These days, any number of interventions can be considered. For example, direct contact with participants, increased audits, safety promotion articles and seminars, and in some cases a rule change may still be required. There is now an emphasis on participants suggesting their own solutions.

A sector is a group of related aviation products and services, organisations or activities, and is not restricted to a certain rules part or certificate type. Some examples of sectors are air transport, pilot training, and gliding. The first sector to be assessed will be the agricultural aviation sector, and the CAA is working with the Agricultural Aviation Association on this project.

The risk profiles will be based on interviews with aviation participants. These will be conducted by an independent organisation, used for their research expertise. The CAA will have oversight of the process.

CAA Manager Intelligence, Safety and Risk Analysis, Jack Stanton, says, "Sector risk profiling fits in with the CAA's direction of becoming a more risk-based regulator. The profiles will be a clear look at the nature of each sector, the risks faced, how the sector participants are coping with the risks, and then measuring how successful their interventions have been. When the risk profile is completed, we should be able to see clearly where CAA action is required, and what those actions should be. More importantly, it may highlight areas that are better tackled by the participants."

The sector risk profiles will depend on a good level of engagement from aviation participants. If you want to take part, or just seek more information, contact: jack.stanton@caa.govt.nz ■

Microlight Maintenance Records

"So… where is your Airworthiness Directive logbook?"

Authorised Inspection holders are finding examples of incomplete, or even non-existent, microlight aircraft logbooks. Microlight owners and inspectors need to be aware of their responsibilities to ensure that all maintenance activity has been accurately recorded, including compliance with Airworthiness Directives (ADs).

Class 1 or Class 2?

The owner of a single-seat (Class 1) microlight is not legally required to keep any maintenance logbooks. The requirements, however, become completely different in the case of a two-seat (Class 2) microlight (rule 91.616).

Class 2 microlight owners must keep records for each airframe, and each product and component that has a finite life or a time between overhaul recommended by the manufacturer. Accurate records must be compiled in the appropriate maintenance logbooks for the total time-in-service, and if applicable, the total cycles (rule 91.617).

Despite these current rules, it is strongly recommended that a Class 1 microlight owner follow the same set of requirements that are required of a Class 2 owner. Following these requirements is important, as aircraft logbooks provide details of an aircraft maintenance activity, including modifications and repairs, which form part of the aircraft maintenance history. This will also add value to the aircraft.

The CAA Manager Fixed Wing, Recreation, Adventure and UAS, Rex Kenny, is an aircraft owner and says that accurate logbooks are important.

"If you don't keep logbooks of sufficient quality, it may be expensive to determine when components with finite lives need to be overhauled, or if a component AD is due when the applicability is measured by time in service. Keeping detailed logbooks may also increase the chance of selling your microlight," says Rex.

AD Requirements

How can you prove that applicable ADs have been assessed, and are currently being assessed each month, if you don't have supporting logbook evidence? Recording this information is the only way to show that ADs have been given the appropriate consideration.

As required by rule 103.217, an owner of a Class 2 microlight aircraft must show that every applicable group of ADs applying to the aircraft has been assessed. AD information can be accessed online by selecting "Airworthiness Directives" on the CAA web site, www.caa.govt.nz.

Microlight owners should check the following AD categories on the web site to identify which ADs are applicable:

» Microlight (DCA/MICRO/Series)

» Any specific aeroplane type AD schedule (eg, Tecnam – DCA/TEC/Series)

» Any specific engine or propeller type AD schedule (eg, Rotax – DCA/ROTAX/Series).

The following component ADs may apply, depending on the equipment level of the microlight. Select the "Components" link on the "Airworthiness Directives" page to view component categories.

» Avionics (DCA/RAD/Series)

» Electrical Equipment (DCA/ELECT/Series)

» Emergency Equipment (DCA/EMY/Series).

Condition Inspections

Class 2 microlight owners are entitled to perform their own routine maintenance, but they must also ensure that an annual condition inspection is carried out by an authorised person. The purpose of this inspection is to determine the aircraft's airworthiness. The authorised person is required to ensure that all modifications (recent or not) do not affect the aircraft's structural or operational integrity.

The authorised person carrying out the annual inspection must establish whether or not the aircraft is airworthy, and must record this information on the "Microlight Aircraft Inspection and Flight Permit Validation" form, or its equivalent. Contact your Part 149 organisation for a copy of this form.

The form includes an "Owner's Statement" where the owner can certify that all repairs, alterations, or modifications made since the last inspection that could affect airworthiness, have been disclosed. Owners must also certify that all manufacturers mandatory service bulletins, safety directives, and all Civil Aviation Rules, have been complied with.

Aircraft Logbooks

Aircraft logbooks can be purchased by calling 0800 GET RULES (0800 438 785), or email: orders@colourguy.co.nz ■

Changes Agreed to **CAA Fees Structure**

The Government has agreed to a range of changes to the CAA's fees, charges and levies, following the first major review of them in about 15 years.

The changes will take effect from 1 November 2012.

The key changes are:

- Increasing fees for items such as licences, ratings, aircraft registration and the participation levy.
- The progressive increase, over three years, of hourly charges for surveillance and certification functions – $208 (incl GST) in year one, to $284 (incl GST) in the third year.
- Introducing new fixed fees for processing a medical certificate application, deregistration of a foreign-owned aircraft, and a registration under the Cape Town Convention.
- Moving towards equalising the rate for the domestic passenger safety levy and the departing international passenger safety levy, by reducing the domestic levy to $1.97 (incl GST) and increasing the international levy to $1.50 (incl GST).
- Revoking the aeronautical information services levy and funding the related costs from passenger safety and participation levies.
- Reducing the Australia New Zealand Arrangement levy discount (increasing the levy to $1.78 incl GST) as hourly charges move towards reflecting full costs.

The CAA's revenue has not kept pace with the costs it faces managing the civil aviation sector, and an increasing amount of the CAA's income comes from passenger levies, while the fees and charges revenue has remained static.

This has resulted in many regulatory activities being subsidised by passenger levies, when the beneficiaries of such services should have been paying more. This was seen as unfair and it certainly did not comply with government guidelines on cost recovery.

Along with these funding issues, a number of reports over recent years noted that the CAA was not as effective as it needed to be, and was not sufficiently responsive to the needs of a very dynamic and complex aviation sector.

A public consultation document was issued in October 2010 discussing ways to rebalance the CAA's funding and meet the operational challenges it was facing. Feedback from the consultation indicated general agreement with the changes, but the aviation sector was strongly of the view that the CAA needed to demonstrate improved performance and value for money before they were implemented.

CAA Chief Executive, Graeme Harris, said, "When we tested the new charges with the aviation sector, they told us we had to lift our game first. We listened, and have been making some significant changes within the CAA in terms of our operating philosophies, structure and approach.

"Organisationally, the CAA has been going through a major change project. We are looking to save costs by merging our back office functions with Avsec's. We are also putting the right skills into key areas of focus.

"Operationally, we are moving to a more risk-based surveillance system. That means the higher the risk of the operation, the higher the monitoring costs the operation is going to be charged.

"We believe that is fair. It will give the aviation industry a very direct interest in

practically managing safety more effectively. Those operations that can demonstrate good systems and results should benefit from a lower level of surveillance rather than a 'one size fits all' approach. Many aviation organisations already work this way when dealing with health and safety laws or managing their ACC or insurance risk.

"We recognise that this is a major change, and for some it may not be easy, but this is unavoidable after 15 years of fees staying the same. We are looking to make it easier where we can, for example, through phasing in some increases. Even with the changes we are only recovering 75 per cent of the cost of some services. Another review will be carried out in three years, where any remaining cross-subsidies will be assessed."

More on the new fees and their background can be found on the CAA web site, www.caa.govt.nz, "CAA Funding".

Fees Snapshot (see www.caa.govt.nz, "CAA Funding" for more information)	**New fee $** (incl GST)
Annual aircraft register fee	**99**
Pilot licences: private, recreational, commercial, airline transport	**230**
Ratings: instrument, flight instructor (category A, B, C, D, E), air traffic service instructor, air traffic service examiner	**131**
Licences: air traffic trainee, air traffic controller, flight service trainee, flight service operator, exchange aircraft maintenance engineer, validation of foreign pilot	**197**
Aircraft maintenance engineer licence (includes issue plus one category)	**299**
Aircraft maintenance engineer licences: maintenance approval, certificate of inspection authorisation	**266**
Aircraft maintenance engineer licences: additional category, rating	**200**

Medical Certification Application Fee

Until now, the cost of funding the CAA medical unit has been funded from passenger levies. That is no longer considered appropriate, and it has been decided that those who benefit most from the medical certification system are the people who should fund the true cost.

A new $313 (incl GST) medical certificate application fee is being introduced from 1 November 2012, and this fee has to be paid to the CAA before seeing your Medical Examiner. This fee is separate to that charged by the Medical Examiner. The new fee will be charged to all applicants applying for a Class 1, 2 and/or 3 medical certificate, and will apply for each new and renewal application.

To make payment easy, the CAA is providing for online payment from 1 November. Payment can be made using a credit card or internet banking. A receipt will be automatically generated as proof of payment. This receipt can be emailed to you, and if you wish, a nominated Medical Examiner.

You still have the option of manually completing an application form (downloadable from the CAA web site from 1 November) with your credit card details, or attaching a cheque, and posting it, but this will take longer to process.

Any medical examination completed on or after 1 November 2012 is subject to the fee, and proof of payment must be presented to the Medical Examiner. Under the legislation, payment cannot be accepted before 1 November. If you need to get a medical certificate around the transition time, email med@caa.govt.nz to discuss this, or if you have any other questions. ■

Director's Awards 2012

This year's winners of the Director's Individual Award and the Flight Instructor Award were announced in August by Graeme Harris, the Director of Civil Aviation. These awards are given to aviation participants with an overwhelming safety ethos. Their actions have directly resulted in safety being raised, and they have encouraged others in the aviation industry to do the same.

Dennis Millington

The Individual Award winner was Dennis Millington, Auckland Airport's Airfield Manager.

"I feel flattered and surprised. It's great to be acknowledged by the people you work with, but this award also reflects all the effort put in by the other staff at Auckland Airport," says Dennis.

Dennis gained his CPL in the 70s and then chose to pursue a career in the food and beverage industry, working in a number of food safety management positions. Following his original desire to work in the aviation industry, he then took on a position at Auckland Airport as a Safety Officer. Dennis rose through the ranks to become Airfield Manager, and is responsible for leading the Airfield Operations Team. Under his watch, he has helped create a safety conscious work culture.

"My key roles are ensuring we comply with Part 139 and maintaining safe airfield operations. I have a great team and enjoy my role as a facilitator; working with people and helping them connect."

Dennis has played a major part in the introduction of low visibility operations at Auckland, and recently, he has been instrumental in the introduction of a stand guidance system and road protection lights at international stands.

He is continually called on for his expertise and knowledge, not just at Auckland, but at other airports in New Zealand and beyond.

"I hope to continue working and improving airside operations for a few years yet," says Dennis.

Gavin Miller

This year's recipient of the Flight Instructor Award was Gavin Miller, an A-Cat instructor and flight examiner. This award recognises Gavin's large contribution towards flight training and aviation safety.

"Winning this award makes me feel honoured and very humble," says Gavin.

Gavin started his career in aviation a little later than most, but quickly worked his way through to achieving an A-Cat Instructor Rating and becoming Chief Flight Instructor at Massey University's School of Aviation. He is also part of the dedicated instructing team who introduce New Zealand's youth to safe aviation through the Walsh Memorial Scout Flying School.

"I've always known that this is what I wanted to do, aviation is my passion, and my forte is instructing," says Gavin.

He has become a pioneer is his work, having involvement in RNAV development and the introduction of glass cockpits to general aviation.

"Technology is moving at a faster pace than industry can keep up with, which presents a number of challenges. We therefore created new instructor training plans because instructors weren't examining GPS usage in an integrated cockpit environment."

Securing a part-time contract with Eagle Airways hasn't stopped Gavin from continuing to pass on his expertise through flight instructing and examining.

"I ended up working in the airline industry by chance, but always intended to return to instructing. My time with Eagle has allowed me to bring a lot back to my students," says Gavin. ■

Emergency Parachutes

No surprises please.

Photo: istock.com/Fly_Fast

Emergency parachutes may be carried by pilots during some activities, for example gliding, operating ex-military aircraft, or aerobatics, as a means of saving their lives in the event of a serious in-flight emergency.

Remember though, if you must escape from an aeroplane with what purports to be an emergency parachute strapped to your back (or bottom), then you really do need to have confidence that it is going to do the job of saving your life. Otherwise stay with the ship.

When you're hurtling toward the ground at breakneck speed, pulling the ripcord and finding that nothing happens, is not a good time to be surprised. The end result is guaranteed to be very unpleasant.

A Heads Up

With the recent introduction of Part 115 *Adventure Aviation – Certification and Operations*, several inspections have shown that a problem with the carriage, maintenance and storage of emergency parachutes potentially exists in some sectors, including a general lack of awareness of maintenance and parachute type certification requirements.

For example, in one case an emergency parachute was found to be five years outside its repacking due date (they should be done yearly). Another case showed that a parachute with an unknown packing history had been packed incorrectly, and would not have opened in an emergency. In yet another case, a parachute was not a parachute but only an impersonation of one, being filled with old rags and used as a cushion!

Emerging Issues

The emerging issues are that if emergency parachutes are carried and intended to be used by crew during emergencies, then they must be fit for purpose, be properly maintained, and be continuously serviceable.

Mac McCarthy, CAA Flight Operations Inspector, says, "If you carry an emergency parachute you must have it maintained by a qualified competent person, and keep correct inspection and packing records, in accordance with rule 105.111 *Parachute records*."

Under rule 91.707 *Emergency parachute assemblies*, pilots are not to carry emergency parachutes for use unless a number of requirements are met. These include the parachute meeting equivalent type certificate or TSO requirements; protection from damage and harmful substances; correct maintenance and packing within the preceding year; and having a packing card that details its certification and maintenance history.

Use and Storage

"Parachutes have no place being in an aircraft for use only as a cushion, and should be removed if they are," Mac says.

"Other things that pilots also need to consider are having a comprehensive up-to-date working knowledge of how to correctly strap on and operate the parachute (you don't want to be working this out in freefall), being aware of any associated hazards with parachutes and their operation, and giving passengers comprehensive briefings on their use.

"A further important consideration is the correct storage of parachutes when they are not in use. Proper storage ensures that their integrity is not compromised by such things as chemicals, excessive heat or cold, dampness, vermin, or other hazards," Mac cautions.

More Information

New Zealand Parachute Industry Association web site, www.nzpia.co.nz ■

Medical Considerations While Abroad

Recently, a New Zealand airline pilot fell ill in the United States and was admitted to hospital. After being discharged, a logistical nightmare that cost the pilot a considerable amount of money and time ensued.

When processing your medical certificate application, the CAA medical team often requires documentation showing your time spent in hospital, along with the treatment and medication you have received. After returning to New Zealand, the pilot attempted to get these records, but discovered that the overseas hospital would not fax him directly. This forced the pilot to use a US intermediary to forward faxes on his behalf. Before sending each fax, the pilot was required to pay the associated costs in advance. A multitude of phone calls were made when organising these payments and the release of the required documentation.

This headache could have been prevented if the pilot had simply requested a copy of his paper trail while he was abroad. Dougal Watson, the CAA Principal Medical Officer, says that you are usually entitled to a copy of every document an overseas hospital produces, so when you are receiving medical attention abroad, grab a copy of everything you can before returning to New Zealand. This applies to all pilots, air traffic service staff, and those in the process of getting a medical certificate. Make sure you get all the required documentation while you are overseas as this can save you a lot of hassle later on. ■

Photo: istock.com/hellokokoro

Fl_ght Pl_n_ing
(Fill in the Blanks)

The article *Flight Plan Changes* in the last issue drew attention to changes to the ICAO Flight Plan form, which are outlined in AIP Supplement 123/12, and can be accepted now, despite the 15 November 2012 effective date of the changes. Changes aside, a continuing issue with flight plans submitted to Airways' National Briefing Office is omission of essential data, particularly in flight plans for IFR training flights.

IFR plans are often received with missing information, requiring either further dialogue with the submitter, or having to sort it out once the traffic is airborne.

Common mistakes are:

- Not filing separate legs for carrying out approaches, or missing out a leg altogether;
- Not always indicating that they are training, ie, STS/T1A, STS/T2A, etc;
- Incorrect designators for aerodromes, eg, NZHA for Hamilton instead of NZHN, and NZTK for Te Kuiti instead of NZTT;
- Inventing callsigns that have not been approved by CAA and published for ATS use (see rule 91.249).

A suggestion worth noting is the inclusion on the route of the area where a hold is to be carried out, or where an approach will be commenced. An example is the Great Barrier RNAV (GNSS) RWY 28 approach, where AOTEA is the initial approach fix (IAF). Making allowance for the extra time for the approach via AOTEA will ensure that accurate data is presented to ATS in the flight plan.

Although Airways has been contacting the relevant training organisations when these problems occur, it seems that the message is not being shared in some cases. Pilots are reminded to refresh themselves on the updated flight planning instructions in *AIP New Zealand* ENR 1.10 (amendment effective 15 November) and AIP Supplement 123/12 in the meantime. Any specific queries can be discussed with the briefing officer, if filing a flight plan by phone, but the aim should be to get it right the first time round. Peer review of a plan before submission may also be helpful. ■

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AIP New Zealand

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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

All 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 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*
1 Oct 2012	8 Oct 2012	13 Dec 2012
15 Oct 2012	22 Oct 2012	10 Jan 2013
12 Nov 2012	19 Nov 2012	7 Feb 2013

See **www.caa.govt.nz/aip** to view the AIP cut-off dates for 2012–2013.

Aviation Safety Advisers

Aviation Safety Advisers are located around New Zealand to provide safety advice to the aviation community. You can contact them for information and advice.

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Aviation Safety & Security Concerns

Available office hours (voicemail after hours).

0508 4 SAFETY
(0508 472 338)
isi@caa.govt.nz

For all aviationzrelated 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-GYY Schempp-Hirth Duo Discus

Date and Time:	27-Feb-09 at 14:00
Location:	Mount Saint Cuthbert
POB:	2
Injuries (Fatal):	1
Injuries (Serious):	1
Damage:	Substantial
Nature of flight:	Training Dual
Pilot Licence:	Private Pilot Licence (Aeroplane)
Age:	68 yrs

The glider struck terrain while being manoeuvred in the vicinity of a mountain slope. The pilot flying, a Japanese national, was fatally injured in the accident and his instructor received serious injuries.

The CAA investigation concluded that:

- The instructor and student were appropriately licensed and fit to carry out the flight;
- The glider had a valid Airworthiness Certificate and had been maintained in accordance with Civil Aviation Rules;
- During a series of right circling turns in an attempt by the pilot to gain height, the glider actually lost height and drifted toward high terrain;
- The instructor was unsuccessful in his attempt to communicate with the pilot to stop the turns and fly away from the area;
- The right wingtip struck a nearby mountain slope;
- The definitive cause of the accident could not be determined; and
- All locating devices failed to operate or were not activated.

A full report on this accident has not been published.

CAA Occurrence Ref 09/679

ZK-NAA Piper PA-30

Date and Time:	09-Jul-09 at 14:35
Location:	North Shore
POB:	2
Injuries:	0
Damage:	Destroyed
Nature of flight:	Training Dual
Flying Hours (Total):	5658
Flying Hours (on Type):	6
Last 90 Days:	150

The student was carrying out a touch-and-go, but after takeoff power was applied, the aircraft started to yaw to the left. The instructor took control but was unable to avoid impact with terrain. A CAA field investigation determined that the left engine had failed to fully develop sufficient power because of a water-contaminated fuel supply.

CAA Occurrence Ref 09/2599

ZK-LOU Britten-Norman BN.2A Mk.III-1

Date and Time:	05-Jul-09 at 13:00
Location:	Great Barrier Island
POB:	11
Injuries (Minor):	3
Damage:	Substantial
Nature of flight:	Transport passenger A to B
Pilot Licence:	Commercial Pilot Licence (Aeroplane)
Flying Hours (Total):	867
Flying Hours (on Type):	28
Last 90 Days:	68

Shortly after takeoff, the right propeller assembly separated from the engine crankshaft and struck the side of the aeroplane. Nobody was seriously injured, but the aeroplane fuselage was extensively damaged and a passenger door was removed, leaving a large opening adjacent to some passengers.

Undetected corrosion of the propeller flange had led to extensive cracking and its eventual failure. Safety issues identified included the need for detailed checking of overseas component records to ensure their reported in-service hours were accurate and for periodic crack checking of propeller flanges for corrosion damage. A safety recommendation regarding component record-checking was made to the Director of Civil Aviation, and the Civil Aviation Authority issued a Continuing Airworthiness Notice regarding inspections of crankshaft flanges for corrosion.

The full report (09-004) is available on the TAIC web site, www.taic.org.nz

CAA Occurrence Ref 09/2536

ZK-HIP Robinson R22 Beta

Date and Time:	14-Oct-10 at 14:00
Location:	Bluff Habour
POB:	2
Injuries (Fatal):	2
Damage:	Destroyed
Nature of flight:	Training Dual
Pilot Licence:	Commercial Pilot Licence (Helicopter)
Age:	29 yrs

The instructor and student pilot were on a dual training exercise in the vicinity of Bluff Harbour. The helicopter was last seen carrying out climbing and descending manoeuvres. When the instructor failed to arrive at a meeting that afternoon, the emergency services were contacted and a search was commenced. The helicopter was located the next day submerged in Bluff Harbour, with both occupants deceased. A full report is available on the CAA web site.

CAA Occurrence Ref 10/3987

ZK-CNS Piper PA-32-260

Date and Time:	29-Sep-09 at 12:15
Location:	Great Barrier
POB:	6
Injuries (Serious):	2
Injuries (Minor):	4
Damage:	Substantial
Nature of flight:	Transport passenger A to B
Pilot Licence:	Commercial Pilot Licence (Aeroplane)
Age:	36 yrs
Flying Hours (Total):	3144
Flying Hours (on Type):	136
Last 90 Days:	98

At about 1305 on 29 September 2009, ZK-CNS, a Piper Cherokee 6, took off from Runway 28 at Great Barrier Aerodrome for a scheduled 30-minute flight to Auckland International Airport. On board were five passengers and the pilot.

The aeroplane was near its maximum authorised weight, and when it lifted off it encountered a wind shift at a critical time that caused a loss of lift. The wind shift, along with the pilot's premature retraction of flap, prevented the aeroplane reaching sufficient speed to climb before it struck vegetation. The pilot consequently lost control of the aeroplane and it stalled into a swampy area about 700 metres from the end of the runway.

The pilot and one passenger received moderate injuries and the other four occupants received minor injuries. The aeroplane was destroyed.

The selection of runway offered limited options for any escape manoeuvre if there were a loss of aeroplane performance for any reason.

No new safety issues have been identified that have not already been documented and widely recognised throughout the aviation industry.

(Executive summary, TAIC report 09-007. The report is available on TAIC web site, www.taic.org.nz.)

CAA Occurrence Ref 09/3719

ZK-HQS Robinson R22 Beta

Date and Time:	04-Jul-09 at 9:30
Location:	Taupo
POB:	2
Injuries (Minor):	2
Damage:	Substantial
Nature of flight:	Private Other
Pilot Licence:	Commercial Pilot Licence (Helicopter)
Age:	47 yrs
Flying Hours (Total):	7060
Flying Hours (on Type):	2000
Last 90 Days:	125

It was reported that the helicopter had an engine failure and carried out an autorotation into a creek bed. The pilot suspected water in the fuel. Investigation found large quanities of water throughout the fuel system; no other cause could be found. The fuel system was cleaned and the engine ran normally with fresh fuel.

CAA Occurrence Ref 09/2539

ZK-GVP Schempp-Hirth Ventus b/16.6

Date and Time:	28-Oct-09 at 16:12
Location:	Bombay Hills
POB:	1
Injuries (Fatal):	1
Damage:	Substantial
Nature of flight:	Private Other
Age:	61 yrs
Flying Hours (Total):	440
Flying Hours (on Type):	74
Last 90 Days:	12

The pilot was on the return leg of a cross-country flight from Drury airstrip when an accompanying pilot in another glider observed that he had not arrived at the airstrip as expected. An aerial search was conducted of the area where the glider was last seen. The glider wreckage was found in a farm paddock. The pilot did not recover from the injuries he received in the accident, and died at the scene.

A full report is available on the CAA web site.

CAA Occurrence Ref 09/4139

ZK-GLN Schempp-Hirth Mini-Nimbus HS 7

Date and Time:	18-Dec-09 at 8:58
Location:	Blenheim
POB:	1
Injuries (Fatal):	1
Damage:	Destroyed
Nature of flight:	Private Other
Pilot Licence:	Nil
Age:	55 yrs
Flying Hours (Total):	1983
Flying Hours (on Type)	768

The pilot was attempting a 1000-km cross-country flight from Omaka to the Lake Coleridge area and return. Shortly after releasing from the tow aircraft, the glider collided with terrain 7.5 NM south of Blenheim, but was not located until some hours later. The pilot died in the accident. A full report is available on the CAA web site.

CAA Occurrence Ref 09/4873

ZK-IPA Schweizer 269C

Date and Time:	11-Oct-09 at 16:35
Location:	Turangi
POB:	1
Injuries:	0
Damage:	Substantial
Nature of flight:	Agricultural
Pilot Licence:	Private Pilot Licence (Helicopter)
Age:	41 yrs

During a private agricultural operation, the helicopter engine failed. The machine was substantially damaged when it struck a fence in the subsequent forced landing, but the pilot was uninjured. The engineering investigation found that the engine failure was caused by water contamination in the fuel.

CAA Occurrence Ref 09/3881

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

Eurocopter AS 350 B3

Out limit switch

Part Model:	BL-16600-120-3
Part Number:	BL-16600-120-3
ATA Chapter:	2550

During a winching operation, with the doctor on the hook at a height of less than 1.5 metres from the ground, the hoist cable detached from the winch drum when extended to its full length. The doctor fell to the ground but was uninjured.

This event was due to a failure of the hoist out limit switch protection system. One of the two limit switches had failed to the closed position and the rigging adjustment for the second switch was subsequently found to be incorrect. As designed, the dual 'out limit switch' protection system on this 350 lb hoist is not a true 'fail-safe' system. The operation of the hoist is possible with no functioning limit protection system or any warning that it has failed. The only means an operator has to check that the 'out limit switch' protection system is functional is by carrying out the Post-Flight Inspections as detailed in the Breeze Eastern Operation and Maintenance Manual (TD-93-015 latest revision) Section III.

As an additional preventative measure, the operator has also instigated an operating limitation of ensuring that the hoist operator stops the hoist with 5.5 turns of cable left on the drum rather than the 3.5 turns previously. This has been achieved by painting an additional marker on the winch cable, so that when the marker is level with the midway door position, winching is halted.

CAA Occurrence Ref 11/4947

Cessna A150L

Aileron control

ATA Chapter:	2711

On an aerobatic training flight, after two loops and an aileron roll, the pilot noticed a restriction in aileron movement. The aircraft was returned to base, where further examination found that two coaxial cables had caught in the aileron control chain, jamming the ailerons in one direction. The cables were from a previous radio installation, and had not been removed.

CAA Occurrence Ref 12/395

Gippsland GA200C

Stabiliser Tube

Part Manufacturer:	Gippsland Aero Pty Ltd
Part Number:	GA200-551001-1
ATA Chapter:	5510
TTIS hours:	6767

During routine maintenance, the port horizontal stabiliser failed during jacking and positioning the aircraft. The fabric was removed from both stabilisers, revealing severe corrosion on the port leading edge and starboard trailing edge tubes. The maintenance organisation advised the manufacturer of the defect, and sent sections of the corroded tube to them for examination. The cause of the corrosion was attributed to both the action of spray chemicals and the aircraft's high time in service.

An absence of any service/inspection instructions or ADs related to this type of occurrence was also identified during the investigation. Acting on information provided by the maintenance organisation, CAA and CASA, the manufacturer issued Mandatory Service Bulletin SB-GA200-2012-07. The subject aircraft had the corroded horizontal stabiliser tubes replaced and was returned to service.

CAA Occurrence Ref 11/5209

Pacific Aerospace Cresco 08-600

Top Rudder Hinge Bracket

Part Model:	WAW 343 Vertical Fin
Part Manufacturer:	Wanganui Aero Work
Part Number:	554013-1
ATA Chapter:	5530
TTIS hours:	902

During a 150-hour inspection, the rudder top hinge assembly was found to have a 3/4 inch crack.

Maintenance investigation determined that a production error during manufacture of the bracket resulted in sharp internal corners in three places, which should have had a radius of at least 1/8". The crack in the bracket had initiated at the sharp corner.

A modification was raised for the hinge bracket to include a 1/8" internal radius on the drawing, to reduce the risk of cracking. Modified brackets were to be retrofitted to existing WAW fins, and incorporated in future fin production. Another operator using the WAW fin was contacted and advised of the defect, and the aircraft was inspected with no cracking found. A 150-hour inspection of the affected area has been raised on the five other aircraft in the fleet fitted with the same fin.

CAA Occurrence Ref 12/586

Cessna 172E

Intake valve spring retainer

Part Model:	O-300-C
Part Manufacturer:	ECI
Part Number:	TISN61.1DCA
ATA Chapter:	8530
TSO hours:	69.2

Five minutes after the aircraft was levelled at 1500 feet, the engine suddenly started to run rough, with an accompanying partial power loss. The pilot carried out trouble checks but no improvement resulted. An immediate return to the airstrip was made, and the aircraft landed safely.

Maintenance investigation found that the inlet valve to valve spring retainer had been lost, allowing the inlet valve to fall into the cylinder. The piston then punched the inlet valve through the cylinder head adjacent to the exhaust valve guide.

The cylinder manufacturer was informed, and advised that the failure was possibly due to hammering from the rocker arm due to excessive valve/rocker arm clearance.

The maintenance provider commented that it has possibly been common practice amongst some maintenance providers not to check the valve clearances on the Continental O-200/300 engines on cylinder installation. This is due to the clearances having been found not to exceed the 0.130 inch maximum clearance limit. It now appears however that valve clearances exceeding the maximum limit during cylinder fitment are being found. Once the engine has been run after reassembly and the hydraulic tappets have taken up the backlash, it was suggested that the valve clearances should be re-checked to ensure there was now zero valve clearance.

CAA Occurrence Ref 12/137

Robinson R44

Piston pin plug

Part Model:	O-540F1B5
Part Manufacturer:	Lycoming
Part Number:	75089
ATA Chapter:	7200
TSI hours:	18.4
TTIS hours:	1135.3

The pilot made a precautionary landing after noticing a loss of oil pressure.

A large quantity of metal was subsequently found in the engine. It was discovered that the No. 3 piston pin plug had failed, allowing endwise movement of the piston pin and resultant scoring of the cylinder wall. The piston pin plug and piston debris had entered the crankcase, with some becoming caught between the cam and the tappet bodies, and breaking the No. 3 tappet body. No 3 exhaust rocker was also found cracked, along with further damage from the broken parts being entrained in the rotating components.

CAA Occurrence Ref 12/611

NZ Aerospace FU24-950

Nose gear lower torque link

Part Manufacturer:	PAC
Part Number:	245207
ATA Chapter:	3250

During takeoff, the nose gear lower torque link assembly failed, disabling the nose wheel steering. The failure was evident by loose pedal action and was confirmed by the loader driver's observation. The aircraft was landed successfully without sustaining further damage.

Maintenance investigation identified that the part had failed due to cracking at the weld joint between the through tube and main tube assembly. The initial cause of the cracking could not be positively identified, but could have propagated from a stress concentration region such as an area of poor weld penetration, under repeated heavy loading due to operating on rough strips. The unserviceable part was replaced with a new part, and the aircraft was returned to service.

CAA Occurrence Ref 11/5841

Piper PA-34-220T

Exhaust Valve

Part Model:	TSIO-360KB
Part Manufacturer:	Continental
Part Number:	654201
ATA Chapter:	8530
TSI hours:	1488
TTIS hours:	1488

The aircraft was approaching top of descent, when the left engine lost power, with the manifold pressure dropping from 30 inches to 18 inches. The engine ran smoothly with the throttle retarded, and a visual approach and landing was made.

Number 3 cylinder exhaust valve head was found to be broken. Ingestion of material damaged the cylinder head and piston, before lodging in the turbocharger and damaging two impeller blades. The cause of the exhaust valve failure could not be determined. The operator reviewed pilots' operating instructions with engineers to confirm correct engine handling.

CAA Occurrence Ref 12/581

Cessna 172N

LH forward door frame

Part Model:	172
Part Manufacturer:	Cessna
Part Number:	0513282-3
ATA Chapter:	5411

During extensive dismantling of the aircraft for remedial work, the tradesman found a 2 1/8-inch long crack in the forward door pillar, on the inside adjacent to the lower door hinge attachment point.

Cessna recommended replacement of the part. The engineers advised the manufacturers that they had found similar cracking on other aircraft.

CAA Occurrence Ref 11/3689

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Cnr Kirkbride and Ascot Roads
Airport Oaks
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Check the CAA web site, www.caa.govt.nz, under "Seminars and Courses" for an enrolment form and further information. Places are limited and they fill up quickly, so enrol early.

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