March / April 2010

POINTING TO SAFER AVIATION

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Five Years Fatal Free

CAA
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OF NEW ZEALAND

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If you are heading to Warbirds this Easter, here is some important information for planning your flight to Wanaka, or a nearby aerodrome.

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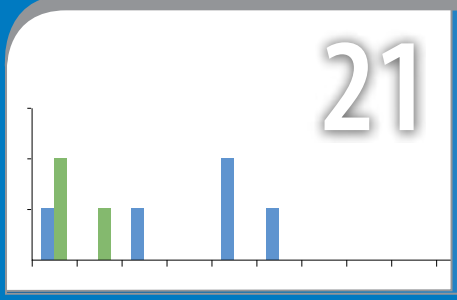
A glider is usually a standard category aircraft, and as such must be maintained in accordance with the Civil Aviation Rules. Here is a reminder of the requirements.

13 Maintenance of Amateur-Built Aircraft

So you think because you spent all that time building your own aircraft, you can do whatever you like with it? Regrettably, that's not the case – we explain the nuts and bolts of it.



21 Five Years Fatal Free

It has been five years since there has been a fatal accident among organisations certificated under Part 135 *Air Operations – Helicopters and Small Aeroplanes*, while on air operations flights.

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Cover: North American P-51D Mustang. Photo: Ian Brodie.

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Additional Briefing for Passengers

Passengers on commercial transport operations require an additional briefing on the specifics of the operation to be conducted. This ensures they are aware of how they can actively contribute to the safety of the flight, and are well prepared in case of an emergency.

Civil Aviation Rule 135.13 states that, in addition to the requirements in rule 91.211 *Passenger briefing,* "Each person performing a commercial transport operation, should ensure that each passenger receives additional briefing or training in safety and emergency procedures appropriate to the characteristics of the flight operation."

Part 1 *Definitions and Abbreviations* defines a commercial transport operation as an operation for the carriage of passengers or goods by air for hire or reward where each passenger is performing, or undergoing training to perform, a task or duty on the operation; or the passengers or goods are carried to or from a remote aerodrome.

Examples of commercial transport operations include, but are not limited to: pipeline inspections, search operations if carrying passengers, casualty evacuation flights, aerial survey/photography, electricity line inspections, forestry inspections, geophysical surveys, etc.

The potential for exposure to increased risks on such flights should be discussed with passengers so that they are aware of them and are then in a position to contribute to the safety of the flight as a direct result of this additional briefing. For example, the additional passenger briefing should include keeping a lookout for wires, other aircraft, etc during any low level operation. The briefing should ideally also include information such as how to look out for structures to indicate the presence of wires (as wires by themselves can be hard to spot) and how to inform the pilot of possible hazards. Passengers should also be made aware when not to interfere with the pilot's flying activities. For example, the passengers should maintain silence when the pilot is communicating on the radio.

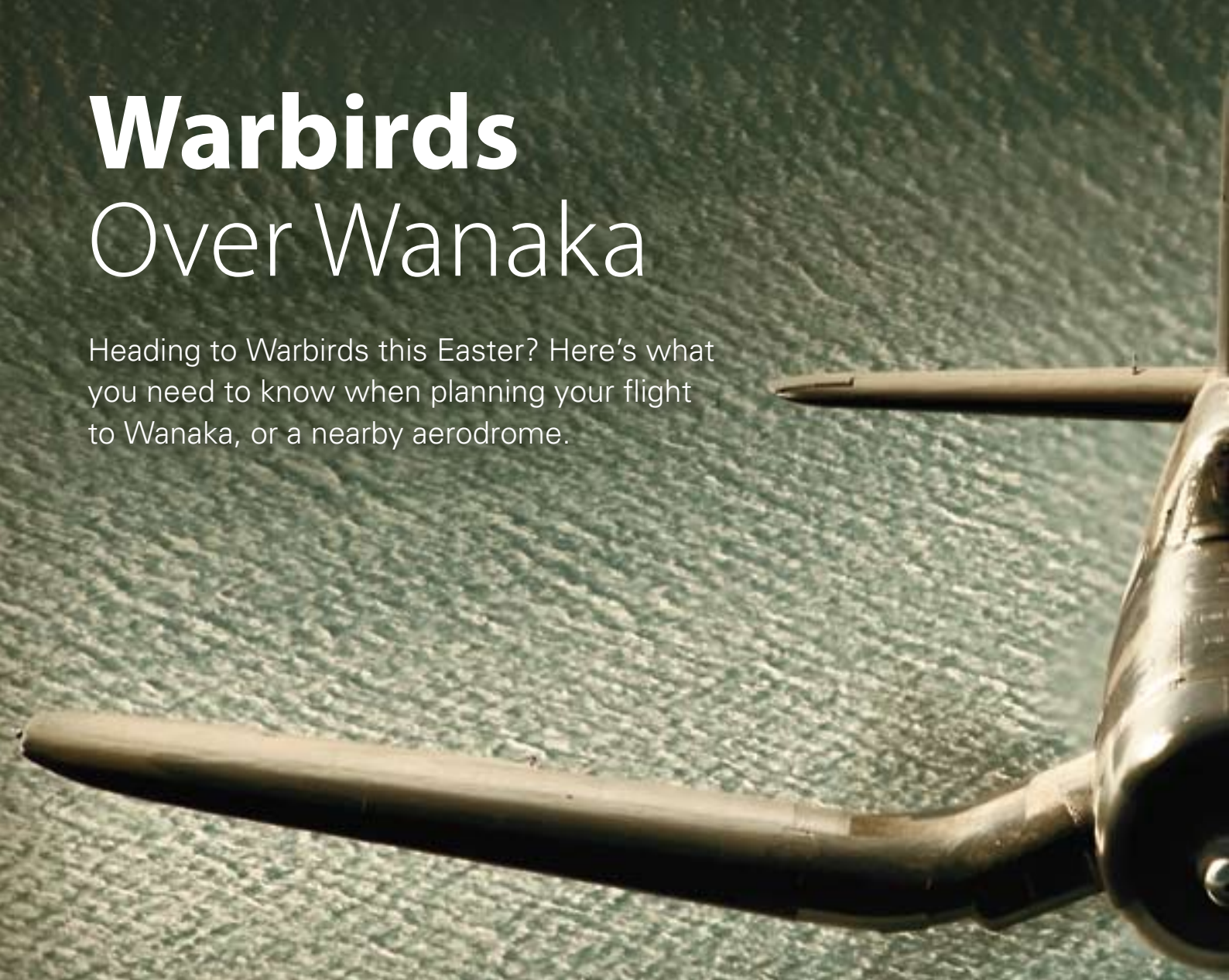
Similarly, during a photographic flight, such as for a media news channel, the additional passenger briefing should include a warning to look out for other aircraft in the vicinity. Photographic flights can be particularly hazardous because of aircraft flight limitations. Camera operators should be briefed that the pilot might not be able to fly as slowly, or to position the aircraft exactly as they wish, due to such limitations.

Advisory Circular AC 119-3 *Air Operator Certification – Part 135 Operations* is being updated and this process is expected to be completed later this year. This AC will spell out the additional information which should be covered in the training and passenger briefing sections of the operator's exposition. ■

Life Flight pilot Harry Stevenson briefs passenger Colin Larsen before commencing an operation in the Westpac Rescue Helicopter, Wellington.

Warbirds Over Wanaka

Heading to Warbirds this Easter? Here's what you need to know when planning your flight to Wanaka, or a nearby aerodrome.



Read the 'SUP' 49/10 and 50/10

The stand-alone *AIP Supplement* for Warbirds Over Wanaka must be read and understood if you plan to land at Wanaka. It is not possible to pick out a few important points to summarise here because it is essential for pilots to know everything contained in the *AIP Supplement*. It covers temporary airspace changes, arrival and departure procedures and time slots, fuel requirements (above normal reserves), fuel availability, emergency procedures, and flight planning and briefing services. The *AIP Supplement* warns that, "Permission to enter and operate within Wanaka CTR/D and NZR998 will be withdrawn for individual pilots who do not comply with instructions and procedures contained within this AIP Supplement." Enough said.

Time

Daylight Saving

Daylight saving ends at 3:00 am on Sunday 4 April 2010. This means the end of New Zealand Daylight Time (NZDT) and the start of New Zealand Standard Time (NZST).

NZDT is 13 hours ahead of UTC; NZST is 12 hours ahead of UTC. If you are planning to travel home on Sunday or Monday, be careful with your conversions to and from UTC when looking at the weather and filing your flight plan – the conversion will be different from when you travelled to Wanaka earlier in the week.

Evening Civil Twilight Considerations

It is important to know the Evening Civil Twilight for your destination aerodrome and plan to land at least 30 minutes before then. Western areas of New Zealand have a later ECT than eastern areas.

If you are flying in the late afternoon, in clear skies, you may not realise how dark it is getting on the ground, as it is lighter at altitude. This difference is exaggerated when flying around mountainous topography, due to alpine shadows.

Something to look out for when flying to Warbirds is a false sense of security when flying southwest along the West Coast of the South Island. As ECT approaches, the sky ahead and to the west is light (assuming limited or nil cloud cover), especially at higher altitudes. This makes you think that lighting won't be a problem. If, however,

Goodyear FG-1D Corsair
Photo: Ian Brodie

your destination is east of the Southern Alps (for example through Haast Pass to Queenstown or Wanaka), the light will be considerably different. It can be dark and intimidating landing on the valley floor. If cloud cover exists, even 30 minutes before ECT can be quite dark in the valleys east of the Southern Alps.

Due to the end of daylight saving, on Sunday 4 April and Monday 5 April, it will effectively get dark an hour earlier than it gets dark on Saturday. The Evening Civil Twilight (ECT) in the daylight tables that is closest to the Easter weekend is 7 April. On 7 April, ECT in Zone 7 (Wanaka) is 0647 UTC, which is 1947 NZDT and 1847 NZST. When planning your flight home for Sunday or Monday, remember that you need to be on the ground an hour earlier than you needed to be on the ground on your way to Wanaka.

Aerodromes Near Wanaka

Here is some useful information about other aerodromes nearby. In the event that a landing in Wanaka is not possible, you may consider diverting to one of these aerodromes. Or you may decide to avoid the complications of flying into Wanaka altogether, and pick another aerodrome as your planned destination.

Queenstown

Prior Permission: Only required for aircraft above 5700 kg MCTOW.

General: On entering Queenstown Information's area of responsibility (as shown on the South Island FISCOM Chart in the *AIP*) contact them on 128.9 MHz and advise your intentions. Queenstown information (QN info) will provide aerodrome information and any anticipated delays due to increased traffic. Note that the QN info frequency has been changed by NOTAM to 128.9 MHz, however, the *AIP New Zealand* still gives the old QN info frequency of 128.0 MHz. Prior to entering Queenstown controlled airspace, contact Queenstown Tower (118.1 MHz) for an entry clearance.

Queenstown aerodrome is a busy environment used by many different types of aircraft. It will be particularly busy over the Easter period. It is important that all aircraft have their transponders on modes A and C at all times, because Queenstown has a new ATC surveillance system called multilateration, which uses transponder signals. Essential information on Queenstown can be found in *AIP New Zealand, Vol 4*, and there is further guidance in the *In, Out, and Around Queenstown* GAP booklet (email: info@caa.govt.nz for a free copy).

Continued over ❯❯

» *Continued from previous page*

All circuits at Queenstown are restricted by terrain. Pilots must ensure they have terrain clearance at all times, particularly on departure from grass Runway 14, where visual illusions may be encountered due to the proximity of The Remarkables mountain range. On departure from grass Runway 32, a right turn is needed after crossing the runway end to ensure obstacle clearance. High terrain, especially to the north and north-west of the aerodrome can be very intimidating.

Do not feel like you have to accept a clearance to land or takeoff on grass Runway 14/32. If you are not comfortable using the grass, it is perfectly acceptable to request sealed Runway 05/23 instead. Be aware that you may have to hold for the sealed runway.

Fees: Queenstown Airport Corporation are changing their GA landing and parking charges, effective 1 April 2010. You can find these on their web site, www.queenstownairport.com. Under the News section of the home page, click on "Changes to Aeronautical Charges – General Aviation", then click on the "Aeronautical Conditions of Use" link at the bottom of the page. You will find the tables of charges on pages 20 and 21 of this PDF document.

Parking Space: Queenstown has plenty of parking space available. Light aircraft and helicopters must park in their respective designated parking areas. These are shown on the Queenstown Ground Movements pages in the *AIP*. General aviation aircraft are not permitted on the main terminal apron.

Fuel: Avgas and Jet A1 available (Air BP).

Cromwell Racecourse

Prior Permission: Not required.

General: Terrain and weather can make this a challenging aerodrome for some pilots. Cromwell has two grass runways (18/36 and 09/27), both have variable surface conditions. Beware of rabbit holes and, if possible, avoid heavy braking.

High terrain 0.5 nm north of the aerodrome means that on takeoff from Runway 36 a right turn of 15 degrees is required as soon as practicable. Takeoff is prohibited on Runway 27, and landing is prohibited on Runway 09. On takeoff from Runway 09, a veer to the right is also necessary due to high terrain beyond the upwind threshold. In strong westerly or north-westerly conditions, the turbulence off the Pisa range can be severe. Any go-around on Runway 27 should be commenced early due to considerable potential for sink.

Fuel: None available.

Alexandra

Prior Permission: Not required.

General: Alexandra has parallel paved and grass runways 14/32, both 1200 metres long, and a much shorter crossing grass runway 01/19. All vectors have good clear approaches and overshoot areas. In westerly and north-westerly conditions there can be considerable turbulence due to wind off the Dunstan range. The grass surfaces are rough, so watch out for rabbit holes.

Fees: Landing fees apply.

Fuel: Avgas and Jet A1 available (Shell).

North American P-51D Mustang
Photo: Ian Brodie

Haast

Prior Permission: Required from the operator.

General: Haast has a gravel runway of variable surface condition. There are good approaches and overshoots for both runways 16 and 34. Stock is occasionally grazed on the field.

Fees: Landing fees apply.

Fuel: Avgas available (Mobil).

Omarama

Prior Permission: Not required.

General: Omarama has a very long grass runway with good approach and overshoot areas. Aim to land on the irrigated grass, but watch out for movable irrigation pipelines and rabbit holes. Intensive gliding activity occurs here daily.

Fees: Landing fees apply.

Fuel: Avgas available (Shell).

Makarora

Prior Permission: Required from the operator.

General: It is unwise to land at Makarora without appropriate training or considerable strip experience. This is a relatively short grass strip with considerable slope and undulations. The approaches to Makarora are often affected by windshear, up and down draughts, turbulence, and crosswinds for landing. Neighbouring trees and bush make this an intimidating aerodrome. Stock, vehicles, and pedestrians may be on the runway at times.

Parking Space: Very limited area to picket aircraft.

Fuel: None available.

Before using any of these aerodromes, seek local knowledge from the operator and other aerodrome users, consider your ability as a pilot, the weather, and the performance capabilities of your aircraft.

Regardless of which aerodrome you decide to fly to, think carefully about what routes you feel comfortable taking, given your flying experience, and what weather conditions those routes will be suitable in. Your preferred route may be safe in north-westerly conditions, for example, but unsafe in south-easterly conditions. One planned route does not fit all. If you are unsure about whether a particular route is suitable – seek some local advice.

Lastly, make sure you have current charts, weather information, and NOTAMs for your flight. ■

Glider Maintenance

A glider is usually a standard category aircraft, and as such must be maintained in accordance with the Civil Aviation Rules. Those gliders that are amateur-built or microlights are considered standard category aircraft, except for some maintenance requirements. See the table on pages 14 and 15 of this issue for some guidance on this.

Gliding New Zealand is the only Part 149 Certificated Organisation with designated responsibilities for gliding in New Zealand. Their Manual of Approved Procedures spells out quite clearly that glider pilots are responsible for ensuring that:

- the aircraft is airworthy before flight;
- any event that renders it unairworthy for further flight is reported to an appropriate person; and
- the appropriate airworthiness documentation is carried in the aircraft.

A glider is required to be maintained in accordance with Part 43 *General Maintenance Rules* and Part 91 *General Operating and Flight Rules*. In addition, Part 104 *Gliders – Operating Rules* details specific variations and exemptions from the requirements of Part 91 applicable to gliders.

Of particular interest here is rule 104.103 *General maintenance requirements*.

Let's examine the rule 104.103 requirements.

(1) the glider is maintained in an airworthy condition;

Glider maintenance can only be carried out by either:

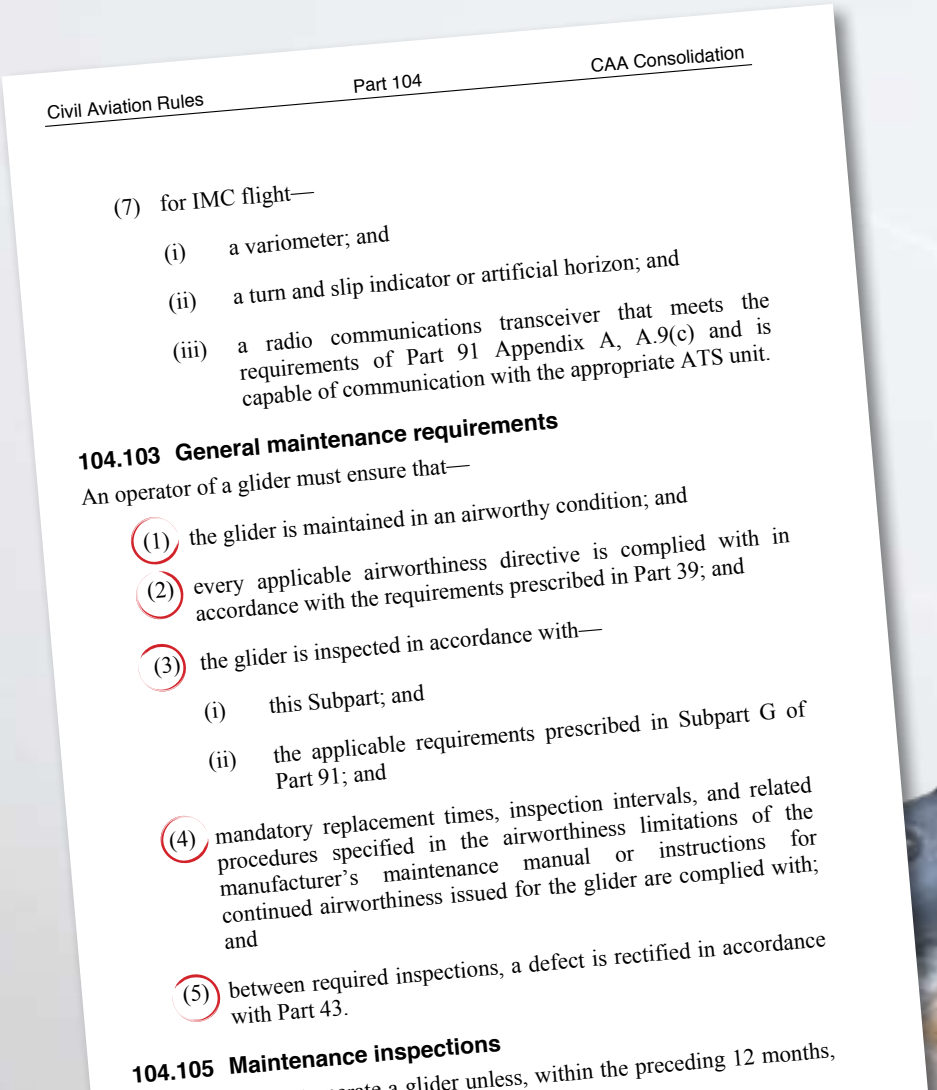
- a person authorised by Gliding NZ; or
- an aircraft maintenance engineer (LAME) who is appropriately rated and current; or
- someone under the direct supervision of one of these people (see *Direct Supervision*, July/August 2009 *Vector*).

Pilot maintenance may also be carried out in accordance with Part 43, Appendix A, if the person carrying out that maintenance is the owner or operator. That person, however, must be trained by a LAME and authorised to carry out the work (see *Pilot Maintenance,* May/June 2009 *Vector*).

Any maintenance performed must be in accordance with rule 43.53 *Performance of maintenance*, and this maintenance must be recorded in accordance with rule 43.69 *Maintenance records*. This rule very clearly spells out the requirement to have technical data recorded, along with a list of fundamental maintenance recording criteria.

(2) every applicable airworthiness directive is complied with in accordance with the requirements prescribed in Part 39;

As an aircraft owner, it is your responsibility to ensure that your aircraft complies with airworthiness directives. If you would like to be notified by email of airworthiness directives when they are issued, you can subscribe to the notification service provided by the CAA. On the CAA web site choose Email Notification Service from the Quick Links column and follow the instructions.



Civil Aviation Rules Part 104 CAA Consolidation

(7) for IMC flight—

(i) a variometer; and

(ii) a turn and slip indicator or artificial horizon; and

(iii) a radio communications transceiver that meets the requirements of Part 91 Appendix A, A.9(c) and is capable of communication with the appropriate ATS unit.

104.103 General maintenance requirements

An operator of a glider must ensure that—

(1) the glider is maintained in an airworthy condition; and

(2) every applicable airworthiness directive is complied with in accordance with the requirements prescribed in Part 39; and

(3) the glider is inspected in accordance with—

(i) this Subpart; and

(ii) the applicable requirements prescribed in Subpart G of Part 91; and

(4) mandatory replacement times, inspection intervals, and related procedures specified in the airworthiness limitations of the manufacturer's maintenance manual or instructions for continued airworthiness issued for the glider are complied with; and

(5) between required inspections, a defect is rectified in accordance with Part 43.

104.105 Maintenance inspections

...rate a glider unless, within the preceding 12 months,

(3) the glider is inspected in accordance with—

(i) this Subpart; and

(ii) the applicable requirements prescribed in Subpart G of Part 91;

The glider must have been inspected in accordance with a maintenance programme required under rule 104.107 and been released-to-service in accordance with Part 43; or passed an inspection for the issue of an airworthiness certificate in accordance with Part 21.

Part 91, Subpart G outlines the inspections required.

(4) mandatory replacement times, inspection intervals, and related procedures specified in the airworthiness limitations of the manufacturer's maintenance manual or instructions for continued airworthiness issued for the glider are complied with;

Wherever the manufacturer sets out a replacement time, or inspection interval, it must be complied with.

The manufacturer's maintenance manual is a critical piece of aircraft equipment. It must be followed when maintaining or repairing a glider. It contains acceptable technical data that must be used when working on the glider.

If any repair work is to be performed on a glider then it must be carried out in accordance with the manufacturer's data by qualified people. If the repair work is major (see Part 1 *Definitions*), then the work must be discussed with, and supervised by, the qualified person making the conformity statement on CAA form 337.

For example, where a glider fuselage is broken in half, the manufacturer's Maintenance Manual, or equivalent, will probably require the manufacturer to be contacted so they can supply the correct repair technical data. Any major repair will require the oversight and certification of the person authorised to certify conformity through the CAA form 337 process.

In the event that the glider manufacturer does not detail the appropriate structural repair criteria, the repairer must obtain and work with approved or acceptable data, as detailed in rule 21.73 *Approval of Design Changes*.

(5) between required inspections, a defect is rectified in accordance with Part 43.

Defects must be recorded and a qualified person (as stated above) must either rectify the defect, or note that it has not been rectified, and sign it off.

Gliding NZ provides access to its Manual of Approved Procedures on its web site, www.gliding.co.nz.

The CAA web site, www.caa.govt.nz, has all the rules, advisory circulars, and the email notification service. If you would like to receive *Vector*, and you belong to a Part 149 organisation, there is a form on the Sport and Recreation page you can fill in and send us, and we will add you as a free subscriber. ■

Be Prepared for an Out Landing

A spate of recent occurrences involving gliders has highlighted some areas of concern that the CAA and Gliding New Zealand are addressing.

"The pilot-in-command shall at all times plan and conduct the flight with safety as the paramount factor and with achievement of sporting goals as a desirable accomplishment," – Gliding New Zealand Manual of Approved Procedures.

Be Prepared

Preparation is the key to a safe out landing. If you are always aware of your height above the ground and the options available below you, you will be one step ahead of the game.

This preparation starts before you leave the ground. Always allow for an out landing – even if you think it is highly unlikely. Get everything prepared for a possible retrieval. Is the trailer roadworthy and ready to go? Is the car fuelled up and ready? Have you left your car keys with the person prepared to come and get you?

Below 2000 Feet

Gliding NZ's instructor's handbook says, "The pilot must have selected a suitable field at any time a landing appears likely – ie, below 2000 feet agl." This doesn't mean you must carry out a landing, but it does mean that you should be thinking about your options whenever you are below 2000 feet. Always have an eye out for suitable landing sites and give yourself time to plan an approach and landing. Don't run out of altitude and ideas all at the same time.

If you leave it too late, it is easy to miss suitable places to land. More than one pilot has been embarrassed by the farmer's son's comment, "Why didn't you land on my Dad's airstrip? It's just over the fence."

Below 500 Feet

Gliders have an exemption from rule 91.311 *Minimum heights for VFR flight*.

Rule 104.59 *Minimum height* allows gliders to operate, "below a height of 500 feet above the surface for ridge soaring, if the flight does not create a hazard to a person or property on the ground; or if a gliding instructor is conducting launch failure training."

Of course you can operate below 500 feet if you are taking off or landing, but in essence, you do not have a blanket clearance to fly below 500 feet.

Stretching the Glide

While it is tempting to think you can squeeze a few more miles out of your current height, do not try to stretch the final glide, hoping for the last tiny bit of lift that will enable you to reach the aerodrome. There have been far too many instances of this turning out badly – and at least one recent fatality in New Zealand.

Relying on hope to keep the variometer beeping its high frequency tune could leave you, at best, very embarrassed.

Plan B

A good pilot always has a plan B. And that plan B is always being updated as circumstances change. They will have a selection of paddocks to choose from, should they need them, they will be watching the weather and the conditions change around them, and making adjustments to their plan A – and their plan B.

What-if?

You should keep running what-if scenarios while you fly. "What would I do now if the lift died completely?", "What will I do if there is no lift off that ridge?", "What will I do if I get stuck in a downdraught?"

PIC Responsibilities

The Manual of Approved Procedures (MOAP) sums-up nicely the pilot-in-command responsibilities from the gliding point of view.

A broad statement at the beginning says, "Responsibility for the safety of the aircraft and for compliance with NZ Civil Aviation Rules, Regulations and associated orders, NOTAMS etc, rests with the pilot-in-command (PIC). The PIC shall be responsible for the aircraft from the time they commence preparation for flight, to the time they secure the aircraft after flight."

Qualifications

All pilots-in-command are responsible for being appropriately qualified and maintaining their currency.

The MOAP states that, "The PIC shall ensure they are appropriately qualified to conduct the operation being undertaken and that they have satisfactorily completed a Biennial Flight Review within the preceding 24 months, and had their log book endorsed to this effect."

Documents

All documents in the aircraft must be current, including the Tech Log.

The MOAP specifically states that, "The PIC is responsible for ensuring that all necessary documents, including current maps relevant to the flight to be undertaken, are available in the aircraft."

Airworthiness

Part 91 requires that before you fly an aircraft, you must be satisfied that it is airworthy and safe for flight. That involves checking the paperwork, and doing a thorough preflight inspection.

Familiarity

The MOAP has conveniently brought together the requirements of Part 91 *General Operating and Flight Rules* and Part 104 *Gliders – Operating Rules* into one location so that glider pilots have all the information they need in one, easy to access, document.

It states, "The PIC shall ensure that, at all times, the aircraft is flown in strict accordance with the established procedures, techniques and rules of Gliding NZ and the affiliate under which the operations are being conducted."

Out Landings

Out landings are specifically mentioned. "The PIC is responsible for the safety and security of an aircraft when operated away from the home base, ie, after an out landing in a glider until it is returned to its usual place of storage."

Competition and Goal Flying

Flying in competitions creates a strong desire to win or finish. This desire can affect your commitment to your safety margins – encouraging you to break them. The same thing can happen with goal flights – at 970 km the temptation to push on and make the magic 1000 km mark can be extreme.

Make sure you keep your plan B updated and don't let yourself fall into the trap of being more committed to the finish than a safe outcome.

Fly to Your Abilities

We can't all be world champions, but we can all be safe pilots. Safe pilots know their limitations and fly to them.

Think about, and commit to, your personal minimums before you go flying. They are your safety margins. At what height do you commit to an out landing? How many out landing options do you need at any one time to feel comfortable? What size field do you need for an out landing?

These are just a few questions you should think about before you fly. ■

If you are always aware of your height above the ground and the options available below you, you will be one step ahead of the game.

Report Your **ELT Defects**

Emergency Location Transmitters (ELTs) are an essential part of your emergency equipment. ELT defects are required to be reported to the Civil Aviation Authority (CAA).

A close-up photo of an antenna defect can help the CAA determine the cause of failure, and initiate corrective action.

Anecdotal evidence suggests that there have been numerous problems with ELTs, especially with broken antennas. However, only 47 ELT defects were reported to the CAA in 2009. This suggests that regular ELT antennae failures are being viewed as routine and are not being reported to the CAA.

According to Civil Aviation Rules, Part 1 *Definitions and Abbreviations,* a defect means a change in the state or quality of an aeronautical product, a product, or a component that makes it unfit for its intended purpose and not in an airworthy condition.

Defects that may be hazardous or prevent emergency systems operating as intended pose a safety risk to your flight. These defects should be reported to the CAA under Part 12.

Rules 12.59(2) and 12.105 deal with the reporting of defects in parts, including emergency equipment defects.

Advisory Circular (AC) 12.1 is currently being revised to specifically highlight/include a section on the reporting of emergency equipment defects. While it was always mandatory for such defects to be reported, the re-write makes this clear.

Defects can be reported on the CA005D form, which is specifically for defects. The form is available on the CAA web site, www.caa.govt.nz, under "Forms".

While reporting ELT antenna defects, you are requested to send a photograph of the fracture surface of the broken antennas. The photograph, where possible, should be a close-up (using the macro function available on many cameras), so that it is clearly visible. This will help the CAA determine the cause of failure.

Defect form submitters are also asked to not dispose of the defective parts (or their remnants) immediately so that they can be examined by the CAA, where this may provide additional information.

For more information, contact Ron Doggett, Airworthiness Engineer, email: doggettr@caa.govt.nz.

Why Report Defects?

Defect reports enable the CAA to monitor trends, identify safety risks early and to initiate corrective action where needed. For example, the problems with the g-switch in a particular brand of ELT, led the CAA to determine that the problem was significant and to initiate corrective action with the manufacturer. When routine or normal failures in emergency systems are not reported, information that could alert other pilots and operators is lost.

Emergency equipment means equipment such as first-aid kits, life jackets, life raft, personal locator beacons, survival equipment, fire detection or suppression systems, emergency exit equipment (including escape slides), or emergency power systems such as ram air turbine, etc. Even if in doubt regarding the seriousness of a defect in any emergency or safety-critical system, please report it to the CAA. ■

Maintenance of Amateur-Built Aircraft

So you think because you spent all that time building your own aircraft, and you know it intimately, you can do whatever you like with it? That's not the case, however. When it comes to maintaining it, only qualified people can do that.

Building an aircraft and maintaining it are two different things. There are a number of differences, for example, wear and tear, ongoing maintenance, fault rectification, worn parts, the effect of vibration on the aircraft, etc. Maintenance requires the knowledge and experience to make a call on whether a part or component is airworthy.

An amateur-built aircraft must be maintained in accordance with a maintenance programme approved under rule 91.607.

It must also be maintained in accordance with Civil Aviation Rules, Part 43 *General Maintenance Rules* and Part 91 *General Operating and Flight Rules* Subpart G *Operator maintenance requirements*.

There are three people who can maintain an amateur-built aircraft:

- Someone who holds a current aircraft maintenance engineer licence (LAME) who is rated on the aircraft type; or
- Someone who holds a current Part 66 Certificate of Maintenance Approval, with appropriate endorsement; or
- Someone under the supervision of the above.

You can get a Part 66 Maintenance Approval from the CAA, but you need training, experience, and once you have those, to have passed an exam.

The Sport Aircraft Association of New Zealand (SAANZ) runs a 3-day course in association with the CAA that covers servicing, maintenance, inspection practices, regulations, and licensing. Once you have attended the course, you can sit the exam. Alistair McLachlan of SAANZ says "we encourage everybody who can qualify for a Maintenance Approval to do so. Achieving a Maintenance Approval improves safety and lifts awareness of correct inspection, maintenance and certification procedures."

Those people interested in attending a Maintenance Approval Course should contact the SAANZ National Administrator, email: afillery@paradise.net.nz, to register.

Your experience needs to include having participated in three 100-hour checks under the direct supervision of a qualified LAME and maintained a Personal Aircraft Maintenance Experience Record. Then you can apply to the CAA for a Part 66 Maintenance Approval. In assessing your application, the CAA will take your experience record into account, so any additional experience you have will be of benefit.

Maintenance requires the knowledge and experience to make a call on whether a part or component is airworthy.

Maintenance Programmes

In March 2007 there were a number of changes to maintenance rules, as well as some numbering changes. If your maintenance programme has not been updated since March 2007, then it is likely to be incorrect, and must be updated and sent to the CAA for approval.

If you have an SAA Maintenance Programme – and you are still a member, then the SAA will have sent you the most up to date version. If you are not a member of the SAA, but do have an SAA Maintenance Programme, then it may not be up to date.

To check if it is the most current version go to the CAA web site, and look up Maintenance Rule Changes from "A to Z Topics".

If you are not qualified to maintain your own aircraft, then you will need to find a LAME that is. They will need to be rated to work on your aircraft, or prepared to get the ratings required, for example, fibreglass or wood and fabric. ■

Aircraft Operator

Certificate of Airworthiness	Standard Category Airworthiness Certificate				
Type of aircraft	**Aeroplane/ Helicopter**	**Glider**	**Balloon**	**Experimental**	**Exhibition**
Description		Including amateur-built and microlight gliders		Aircraft undergoing test flying, flight evaluation, research, etc	Aircraft used mostly for airshows, aerobatic competitions, or the film industry
Pilot requirement – minimum	Part 61 PPL or RPL refer rule 61.357 for limitations	Pilot Certificate**	Nil (CPL required for hire and reward)	Part 61 rule 61.	
Medical requirements	Part 67 – Class 2 or RPL – LTSA	Part 67 – Class 2 or GP declaration	Nil (Class 1 for CPL)	Part 67 – Class 2	
Operating rules	Part 91 Part 119	Part 91 Part 104	Part 91	Refer rule 91.105 for spe Exhibition and Limited categor in accordance	
Types of operations	Day/Night VFR/IFR***	Day only VFR/IMC	Day/Night VFR only	Day only VFR only	Day/Nig VFR/IFR*
Can be used for flight training	Yes			No except rating	No except rating
Maintenance	Rule 91.605 programme	Part 104 programme	Manufacturer's schedule	Requires an approved prog and additional maintenanc Additional maintenance pr or Limited category airc	
Maintenance to be performed by	LAME	LAME or Part 149 Glider Engineer	LAME	LAME	
Modifications and repairs	CAA approval/ acceptance required Part 21 Subpart C	CAA approval/ acceptance required Part 21 Subpart C****	CAA approval/ acceptance required Part 21 Subpart C	CAA approval required – see conditions on Airworthiness Certificate	
Airworthiness Directives	Yes	Yes refer rule 104.103(2)	Yes	Includes ADs for engines, pro	
Logbooks required	Yes refer rule 91.617				
Registration required	Yes				

* Microlight includes single and two-seat powered parachute, gyrocopters, gliders, helicopters and aeroplanes.

** Pilot Certificate issued by the appropriate Part 149 Organisation.

*** Dependent on the configuration of the aircraft – refer Part 91 Subpart F Instrument and Equipment for requirements to operate Day or night, VFR or IFR.

**** See appropriate column if glider is an amateur-built or microlight.

Requirements

Special Category Airworthiness Certificate				Flight Permit (2-seat only)	Nil	
Amateur-built	LSA	Limited	Primary	Microlight*	Parachute	Hang Glider/ Paraglider
Aircraft built by their owners for sport and recreation purposes	Factory manufactured Light Sport Aircraft	Ex-military and vintage aircraft factory-built, – not type-certificated	FAR 21.24 Category originated by FAA – to allow for future imports			
PPL or RPL refer 357 for limitations				Pilot Certificate**	Pilot Certificate**	
Part 67 – Class 2 or RPL – LTSA		Part 67 – Class 2		GP declaration	Tandem Master, Part 67 – Class 2	Nil
Part 91 ecific limitations on each category. ry aircraft require an Operator Statement e with rule 47.55(c) & (d)				Part 91 Part 103	Part 91 Part 105	Part 91 Part 106
ght ***	Day/Night VFR only	Day/Night VFR/IFR***		Day only VFR only refer rule 103.155	Day/Night VFR only refer rule 105.25	Day only VFR only refer rule 106.57
Available to builder/owner	Yes	No except rating		Yes	Yes	
ramme in accordance with rule 91.607 ce requirements of Part 43 Subpart F ogramme requirements for Exhibition raft are contained in rule 91.607(d)				Part 103 Annual Condition Inspection	Part 105 Subpart C	Part 106 Warrant of Fitness
LAME or Part 66 Maintenance Approval holder	LAME			Condition Inspection by LAME or Part 149 authorised person	Part 149 authorised Parachute Technician	Warrant of Fitness by Part 149 authorised person
	Manufacturer's approval	CAA approval required – see conditions on Airworthiness Certificate		CAA or Part 149 Authorised Person refer rule 103.209	Parachute technician refer rule 105.107	Owner
Yes pellers, and components regardless of aircraft type				Yes refer rule 103.217	Yes refer rule 105.103	No
Yes refer rule 91.617				Yes refer rule 91.617	Permanent records refer 105.111	No
Yes				Yes	No	No

CAA
CIVIL AVIATION AUTHORITY OF NEW ZEALAND

Parachute Landing Areas on Aerodromes

There are 30 aerodromes in New Zealand with Parachute Landing Areas (PLAs) on the field. Collecting a parachutist is a real possibility if you bowl into an aerodrome without knowing what to expect, and don't take proactive steps to avoid them.

Firstly, be prepared. For every aerodrome you fly to, check the *AIP New Zealand* aerodrome plate for a parachute symbol, and read the notes below the graphic, as some aerodromes have parachute activity even though they do not have an official PLA designated, for example, Kaikohe.

Joining

At aerodromes where intensive parachuting activity takes place on a daily basis, never carry out an overhead join. Always join either straight-in or downwind. This instruction may be specifically noted on the aerodrome plate in the *AIP New Zealand* and some Automatic Weather Information Broadcasts (AWIB) state this.

At aerodromes with occasional parachute activity, if you hear parachuting taking place or about to take place, it is safest to join straight-in or downwind if you can determine the wind direction, strength, and the runway in use from an AWIB or from other aircraft. If you need to carry out an overhead join to determine this, then hold away from the aerodrome until all canopies are on the ground before joining overhead. If you can confirm there is no parachuting activity at the time of your arrival, however, it is okay to carry out an overhead join.

What to Expect

It can take a jump aircraft anywhere between 15 and 45 minutes to complete a run from takeoff to touchdown (depending on whether it is piston or turbine, and on the height of the jump). Parachutists can be dropped from as high as 15,000 feet agl (for tandem jumps), or as low as 2000 feet agl for sport jumpers, and their chutes can open anywhere between 5000 and 2000 feet agl. It can therefore take as long as six minutes, or as short as three minutes, for a parachutist to land from the time their chute is opened.

Jump aircraft will always make a "two minutes to drop" radio call which states the number of canopies, and where they will be dropped – usually on the non-traffic side of the active runway. Another radio call will be made when the parachutists exit the aircraft, saying "jumpers away".

Where parachutists are dropped depends on the wind strength and direction. Dropping can take place up to 3 NM upwind of a PLA. The wind direction on the ground is not always the same as the wind at altitude, so the winds aloft will influence the direction of drop run. After the drop, the jump aircraft will then descend to land at up to 5000 feet per minute.

Hamish Brown is a jump pilot for Skydive Lake Wanaka. Hamish says that a lot of pilots are unaware how far away parachutists are dropped from where they will eventually land.

"At Wanaka, in a 30 knot westerly, we will be dropping parachutists 2 NM to the west of the landing area. Imagine a box extending 2 NM west, 2 NM east, and 1 NM south of the landing area. Pilots can expect to see canopies anywhere in this area, and should avoid flying through it.

"If you don't understand a radio call from a jump pilot, don't be afraid to ask for clarification, or if you think you may have missed a call, feel free to ask if there is any skydiving traffic in the area. We are happy to help," Hamish says.

"It is really important that pilots do not join overhead if they hear us dropping. A few pilots don't seem to register what we are saying, or understand the implications, and continue to join overhead, oblivious to the danger they are putting everyone in. Pilots need to

Photo courtesy of Skydive Lake Wanaka

take action to avoid the area we are dropping in by joining straight-in or downwind," says Hamish.

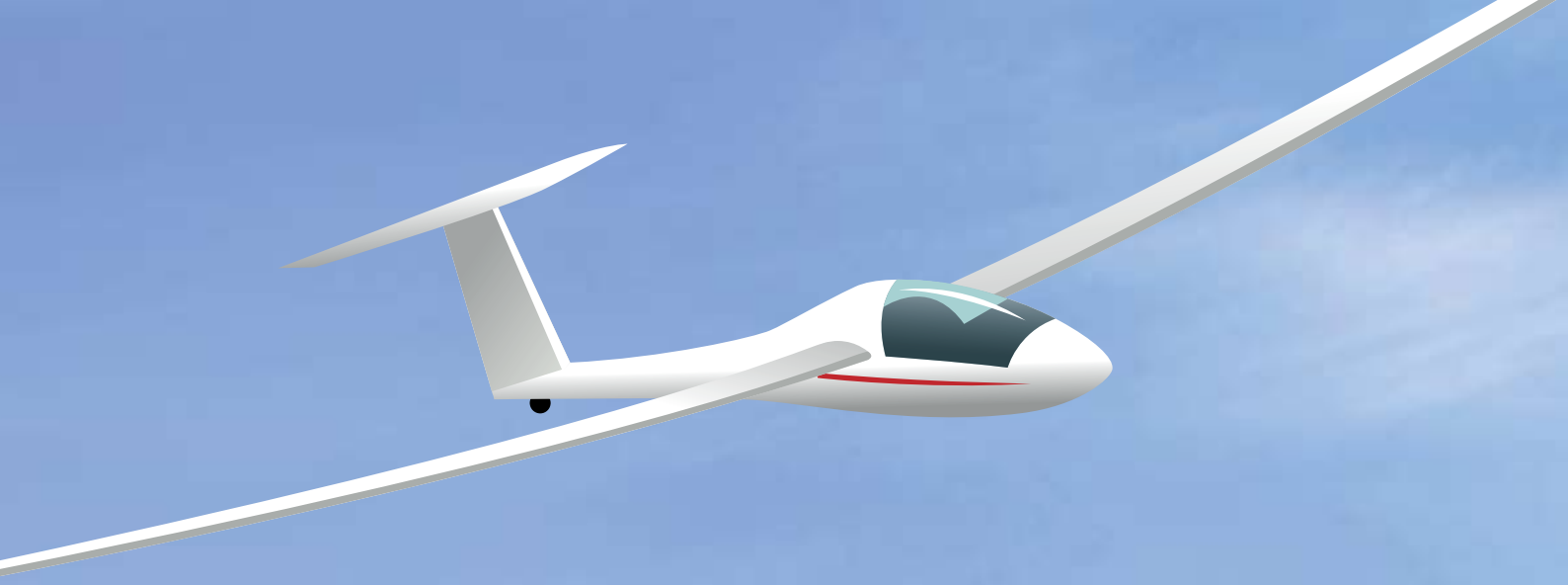
If you are NORDO, and cannot hear a jump pilot's radio calls, never join overhead at an aerodrome where parachuting may be taking place.

Be aware that things do not always go to plan – parachutists do not always land on the spot, and malfunctions do happen. With this in mind, if you have your prop turning on the ground operate with extreme caution within 100 metres of an active PLA. When a main parachute malfunctions on opening, and is disconnected by the parachutist, this is called a cutaway. If crew on the ground or the jump pilot see it, they will make a radio call giving the direction the canopy is drifting in, and another call when the canopy is on the ground. If you are transiting past an aerodrome with parachuting activity, stay at least 3 NM away from a PLA.

On departure, ascertain if there are any canopies in the air before starting your engine. If there are, it is safest to delay starting until they are all on the ground. If you have already taxied and/or lined-up when you hear that parachutists are about to be dropped, then it is safest to climb straight ahead for at least 3 NM before turning 90 degrees and flying parallel to an active parachuting area.

Operating safely around parachuting activity requires:

- Planning – read the *AIP New Zealand* and phone the parachuting operator if you need more information.
- Communication – listen to the jump pilot, take note of how many canopies and where they are dropping, ask questions, and clearly state your intentions.
- A good lookout for canopies. It is important to actively look up above you as part of your scan.
- If you can determine the wind direction, strength and the runway in use, join straight-in or downwind, not overhead. ■



Safety Targets Update

In 2005, the CAA set safety targets for each sector of the aviation industry to reach by 2010. The targets measure the social cost of aviation – not just numbers of accidents.

They incorporate statistical values for fatalities ($3.5228 million per injury), serious injuries ($368,100), and minor injuries ($15,600), as well as the value of the aircraft destroyed.

The unit of exposure for the targets is one seat hour, except for those sectors that are not passenger carrying. In these sectors a surrogate of 500 kg of aircraft weight is used instead of seat hours.

All graphs are shown as three-year averages.

Industry Change

In 2009 a further 39 sport aircraft, 13 helicopters and 11 small aeroplanes were added to the New Zealand register.

However, in 2009 there were 7.6 percent fewer aircraft movements at certificated aerodromes than in 2008 (where data is collected).

Safety Target Structure

Total Safety Cost

Public Air Transport

Any passenger or freight operation where a member of the public can buy the service "over the counter".

- **Airline Operations — Large Aeroplanes**
  All operations (other than Part 137 agricultural) using aeroplanes that must be operated under Part 121 when used for air transport.
- **Airline Operations — Medium Aeroplanes**
  All operations (other than Part 137 agricultural) using aeroplanes that must be operated under Part 125 when used for air transport and aeroplanes conducting SEIFR passenger ops.
- **Airline Operations — Small Aeroplanes**
  Transport and transport support (training, ferry, etc) operations using aeroplanes that must be operated under Part 135. Also includes ambulance/EMS.
- **Airline Operations — Helicopters**
  Transport and transport support (training, ferry, etc) operations using helicopters that must be operated under Part 135. Also includes ambulance/EMS.
- **Sport Transport**
  Transport and transport support (training, ferry, etc) operations using sport aircraft (including microlights, balloons, parachutes, gliders, etc.)

Other Commercial Operations

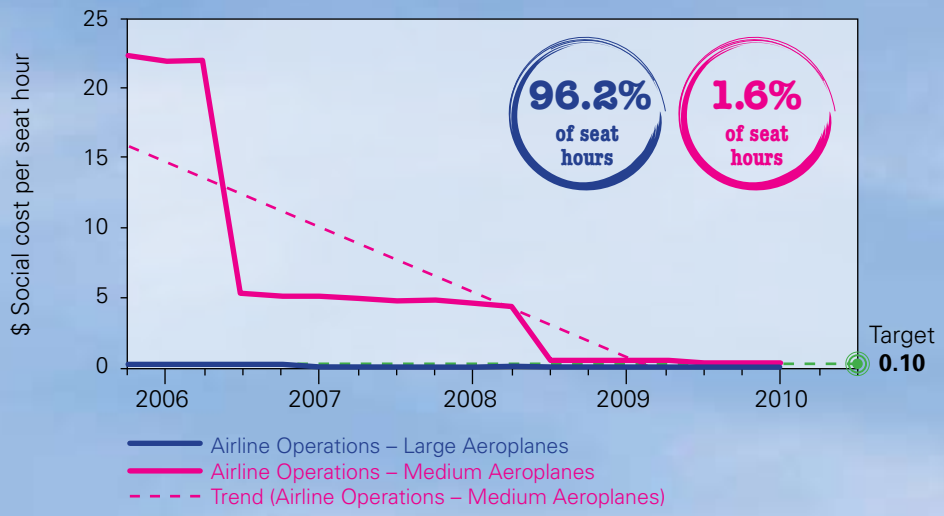
- **Commercial Operations — Aeroplanes**
  All non-public transport ops for hire or reward or as part of any commercial activity.
- **Commercial Operations — Helicopters**
  All non-public transport ops for hire or reward or as part of any commercial activity.
- **Agricultural Operations — Aeroplanes**
  Agricultural ops, ferry and training for Ag ops.
- **Agricultural Operations — Helicopters**
  Agricultural ops, ferry and training for Ag ops.
- **Agricultural Operations — Sport**
  Agricultural ops, ferry and training for Ag ops.

Non-Commercial Operations

- **Private Operations — Aeroplanes**
  Aircraft owned or hired for private or cost sharing use, including glider towing.
- **Private Operations — Helicopters**
  Aircraft owned or hired for private or cost sharing use.
- **Private Operations — Sport**
  Sport aircraft (including microlights, balloons, parachutes, gliders, etc.) owned or hired for private or cost sharing use.

The following graphs show moving averages for each sector to the end of December 2009.

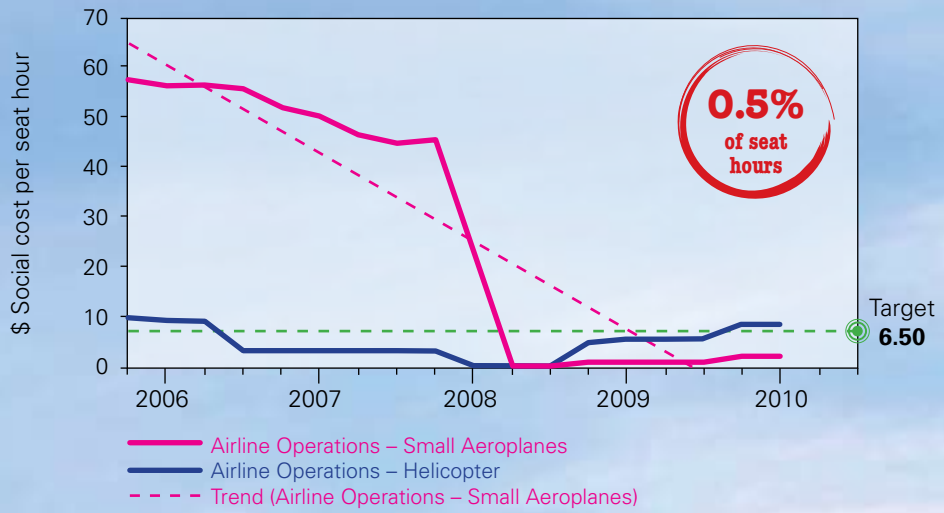
Social Cost
Airline Operations – Large and Medium Aeroplanes



Large aeroplanes have been below the required target since late 2006.

The medium aeroplane sector has been below the required target since June 2009 (the data point at December 2009 is $0.02 per hour of exposure). There were no fatal or serious injuries in this sector in the three years to December 2009.

Social Cost
Airline Operations – Small Aeroplanes and Helicopters



Small aeroplanes used in airline operations have achieved a significant long-term downward trend from the high starting point caused by six fatal and two serious injuries, and one minor injury in the three years to September 2005. There has been one serious injury and three minor injuries in this sector in the three years to December 2009. This sector has been below its target since March 2008.

The sector for helicopters used in airline operations is now above the required target. There have been two serious and four minor injuries in this sector in the three years to December 2009.

There have been no fatal accidents in either small aeroplane or helicopter airline operations in the past five years.

Social Cost
Sport Transport

Three fatal accidents in the sport transport sector in early 2009 have resulted in the highest outcomes since the targets using social cost were established in 2005. There have been five fatal, 10 serious and eight minor injuries in the three years to December 2009.

Note that this group includes hang gliders and parachutes used on transport operations.

The expressions "Non-Commercial Operations", "Other Commercial Operations", and "Public Air Transport" are used to explain in a simple way the groupings that are used in the analysis of data. These expressions do not reflect the legal definitions in the Civil Aviation Rules or the Civil Aviation Act 1990.

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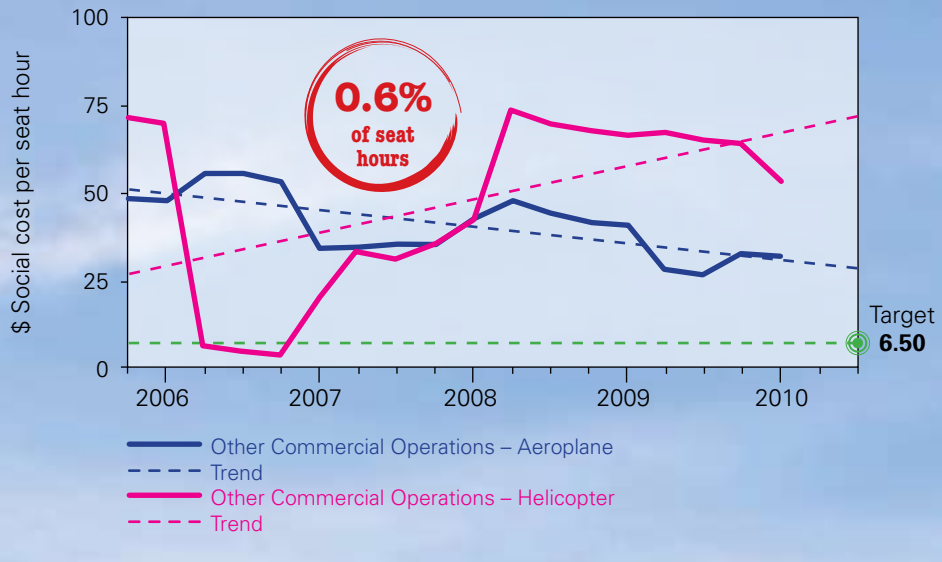
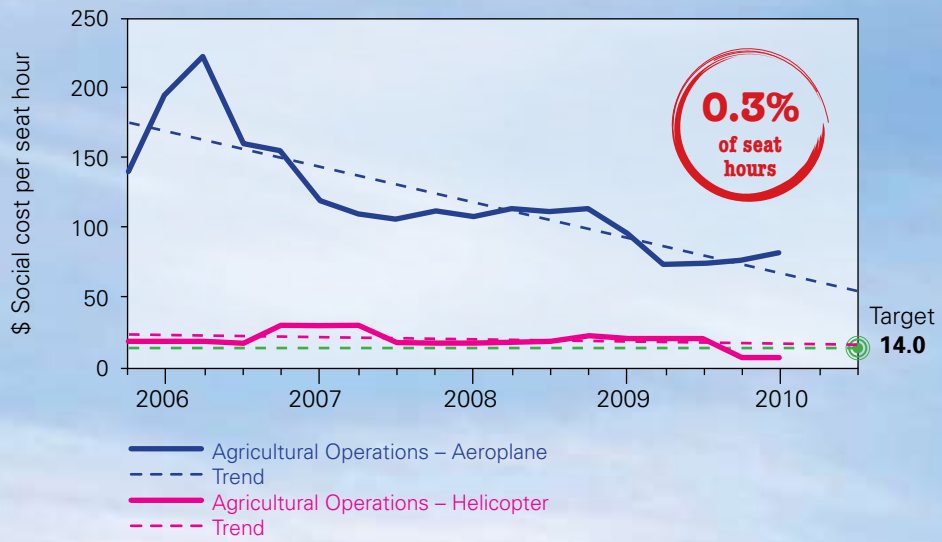
Social Cost
Other Commercial Operations – Aeroplanes and Helicopters



Aeroplanes used in commercial operations (other than airlines) are well above their target. In the three years to December 2009 there have been five fatal, three serious and two minor injuries in this sector.

Helicopters used in commercial operations (other than airlines) are also well above the target. There have been two fatal, one serious and four minor injuries in this sector in the three years to December 2009.

Social Cost
Agricultural Operations – Aeroplanes and Helicopters



Aeroplanes used in agricultural operations are well above their target. During the three years to December 2009 there have been two fatal injuries, one serious and one minor injury in this sector.

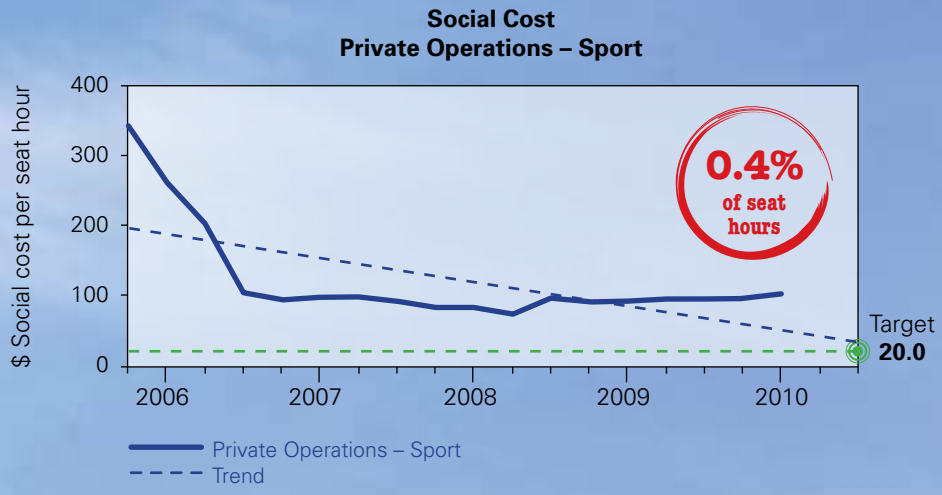
Helicopters used in agricultural operations are now below their target. There have been one serious and two minor injuries in the three years to December 2009.

Social Cost
Private Operations – Aeroplanes and Helicopters

Aeroplanes used in private operations have been trending down since late 2005. There have been one fatal, three serious and four minor injuries in the three years to December 2009.

Helicopters used in private operations have been trending down since early 2006. There have been one fatal and seven minor injuries in the three years to December 2009.

The expressions "Non-Commercial Operations", "Other Commercial Operations", and "Public Air Transport" are used to explain in a simple way the groupings that are used in the analysis of data. These expressions do not reflect the legal definitions in the Civil Aviation Rules or the Civil Aviation Act 1990.



Sport aircraft used in private operations are well above their target. There were 15 fatal, 23 serious and 19 minor injuries in the three years to December 2009.

Note that this group includes hang gliders and parachutes used on private operations.

Five Years **Fatal Free**

It has been five years since there has been a fatal accident among organisations certificated under Part 135 *Air Operations – Helicopters and Small Aeroplanes*, while on air operations flights.

The first of February 2010 marked five years fatal-free for Part 135 fixed-wing organisations on air operations flights. Helicopter air operations under Part 135 have been fatal-free since the end of 2001. Air operations flights are those recorded against the safety target group *Airline Operations – Small Aeroplanes and Helicopters*. They are flights in which passengers or goods are carried for hire or reward (air transport operations and commercial transport operations), in aircraft of up to nine seats.

Director of Civil Aviation, Steve Douglas, says this is a significant milestone in the safety record of general aviation aircraft flown on certificated air operations.

"I would like to acknowledge this achievement, believed to be the longest period free of fatal accidents. Members of the aviation community understand that risks are always present when conducting air operations in small aircraft, and they work every day to manage and mitigate them," Mr Douglas said.

"I also encourage and motivate renewed efforts by all concerned to continue to seek improvements in the safety of air transport operations."

Manager Fixed Wing, Merv Falconer, says the 65 fixed-wing operators currently certificated under Part 135 are to be congratulated.

"There has been a big culture swing in the general aviation area of the industry over the past few years. Being certificated under the Civil Aviation Rules from 2000 onward saw operators taking increased responsibility for safety, adopting quality assurance programmes, and risk mitigation strategies to address problems before they turned into fatal accidents.

"It's a very difficult thing to quantify, but I also think the younger generation of pilots have come up through the ranks in this new environment, and so they are more risk aware," Mr Falconer said.

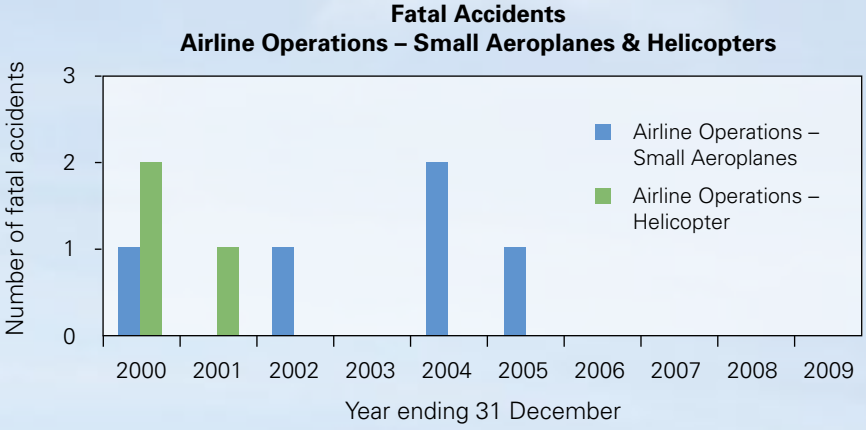
"I am elated by this result. Every time I speak to a Part 135 operator, I congratulate them for their efforts on air operations flights."

Manager Rotary Wing and Agricultural Operations, John Fogden, says certificating under the Rules has meant developing a better understanding of their own businesses for the 110 Part 135 helicopter operators.

"The new structure put the onus for safety onto the operator. They have since become accustomed to thinking about every flight, the absolute need for it, and the risks that might be associated with it.

"In 2003 the helicopter industry itself identified pilot decision making and sole operators as two areas of concern, and that work also helped focus the CAA's safety efforts," Mr Fogden says.

"The industry has achieved a safety result to be proud of. Nobody wants to see it shattered." ■



The last fatal accident involving small aeroplanes in the Airline Operations – Small Aeroplanes and Helicopters safety target group was in 2005 (1 February, causing three fatalities). In 2004, there were two fatal accidents (29 November, causing two fatalities, and 15 December, causing one fatality). There has been no fatal accident among these helicopters since the end of 2001.

The **Ageing Pilot**

The pilot population is getting older as we live longer. There is no age limit for holding a medical certificate in New Zealand, and pilots here have continued to fly successfully into their 80s. If you are getting on in years, here are some issues to understand and compensate for when you fly.

Vision

The average person has a field of vision of around 190 degrees. After age 35 your field of vision begins to contract, and in males, this reduction accelerates after 55. By 65, your field of vision can be as little as 140 degrees. So as you get older, you will need to turn your head to see things that would have been picked up by your peripheral vision when you were younger.

There is a gradual decrease in visual acuity (sharpness of vision), and dynamic visual acuity (the ability to detect and focus on moving objects), as we get older. Using an effective scanning technique will help you to overcome this when looking for traffic.

With age, we need more light to be able to see effectively, so your vision will be worse in low illumination compared to when you were younger. Flying at dawn, dusk, and at night, therefore, becomes more challenging. Increased susceptibility to glare, and longer dark adaptation times, make flying at these times even more difficult.

Age also affects contrast sensitivity and depth perception. For example, in 'whiteout' conditions, recognising where the terrain ahead finishes and the sky begins will get harder with age.

Hearing

We start out in life being able to hear frequencies up to 16,000 Hz. As we age, we progressively lose the ability to hear higher frequencies. By age 60, there can be a hearing loss of over 40 decibels at 8000 Hz.

Voices are between 500 and 3000 Hz. Noise induced hearing loss suffered over time can compound age-related hearing loss enough to affect your ability to hear voices. It may become more difficult to pick out one voice or sound in a noisy environment. This can affect how verbal instructions are heard. Wearing a good quality headset will help.

Strength and Movement

Older pilots are capable of doing the same tasks as younger pilots, but they may be working closer to their body's maximum ability.

Often, flexibility is lost with age, making it more difficult to carry out normal tasks such as using overhead controls, and opening canopy doors. It is important for older pilots to test they still have the strength and movement to deal with emergency situations like a hydraulic failure, carrying out a manual gear extension, or controlling the aircraft with a trim malfunction.

Reduced neck movement will further limit your field of view during a lookout.

Sleep Regulation

Age affects both the length and quality of your sleep. Many people find it harder to get back to sleep after a disruption, and are more affected by light and noise, as they get older. Sleep can also be disturbed by aches and pains, and in men, bladder or prostate problems.

To combat this, older pilots require more time between extended shifts than they used to. Their body will not recover as quickly as a younger pilot's. They also need to be aware of the effects of fatigue. If you make sure the cockpit is not too warm, this will help.

Brain Function

With age, your memory declines, retrieval of information may be slower, and your reaction time will be longer. It also takes more time to learn and acquire new skills.

Fluid intelligence is the ability to think and reason abstractly and solve problems. This declines with age, whereas crystallised intelligence (learning from past experiences) is maintained as we age and accumulate new knowledge and understanding.

To stay on top of your game, currency is important. If you don't fly often, it is important to fly dual with an instructor more frequently. Thinking ahead and anticipating will minimise reactive situations, and using a check-list and writing down clearances will overcome any memory issues. As we get older it is more important to plan ahead and be organised on the ground.

When to Stop Flying as Pilot-in-Command

Age related impairments happen gradually, and pilots learn to adapt and compensate for these over time. Each one in itself can be worked around. You can continue to fly safely and enjoyably if you are aware of how ageing will affect your abilities, and take steps to minimise this. There comes a point, however, where all of these minor impairments add up to cause a significant decrease in your performance as a pilot.

It is important to stop flying as PIC when:

» You are unable to stay competently current (as opposed to legally current).

» You are aware of deficiencies in your performance and find it difficult to compensate for these despite retraining.

» If passengers who were previously comfortable flying with you, become worried about your abilities, then ask yourself why.

This doesn't mean you have to give up flying altogether – just stick to dual flight with an instructor from then on. ■

Letter to the **Editor**

Unsafe Undercarriage – November/December 2009

Your story on "Unsafe Undercarriage" in the Nov/Dec issue of Vector *gives one piece of bad advice in my opinion. I refer to the recommendation to land on a sealed runway.*

Our company operates nine light multi-engine airplanes on scheduled air transport operations. Over 60,000 hrs of operation we have had one NLG failure (due to a hydraulic system malfunction) resulting in a gear up landing. It is a company recommendation to our flight crew to land on a grass runway providing the surface is firm should a landing gear failure be a possibility.

There are three reasons for this recommendation:

1. *A belly landing on seal increases the chances of a fire, created by abrasion. This is particularly relevant to piston powered airplanes using the more volatile avgas for fuel.*
2. *The airplane will sustain less damage from abrasion on a grass runway.*
3. *Having an airplane on its belly on the main runway of an international airport or busy domestic airport can cause havoc for other carriers and disruption for many travellers whilst the runway is closed.*

The idea of the airplane digging in and overturning on a grass runway is without foundation. I'm not aware of such an event having ever been recorded.

Regards
Dan Power
Chief Executive
Sunair Aviation Ltd

Whether to carry out a wheels-up landing on a grass or sealed runway is an area of debate. The pilot-in-command has the responsibility to decide the best course of action for the situation they are in, after considering the aircraft type they are flying, what runway options are available at their destination aerodrome, and whether a diversion to another aerodrome is even possible given their fuel state. So there is no black and white answer to this question.

A wheels-up landing should be made on the longest, firm, flat, surface available, which is why we referred to using the seal. The problem with grass runways in New Zealand is that most are not long, many are undulating, and a huge number are only firm for a few months of the year.

There is an increased risk of fire on the seal, but our research suggests that landing on seal may not cause more damage to the aircraft. Another consideration we didn't mention in the article would be to land at an aerodrome with a rescue fire service in attendance, if possible.

In 1983 there was an instance of an aeroplane digging-in in the Cook Islands. Editor

Correction

The caption for the cover photo in the January/February *Vector* had two errors: the RV Series are *Vans* aircraft, and there are a total of *48* on the aircraft register. My apologies to Richard VanGrunsven and all the RV enthusiasts. Editor

HSE Document Audit **Standards Change**

New health and safety document audit standards, affecting operators performing commercial activities, are now in place.

The changes, which took effect from January 2010, will affect you if you are a commercial operator in the aviation industry and you:

- are self-employed; or
- have employees; or
- are acting as a contractor; or
- are a principal (the one who engages a contractor for completing a contract).

What's Different?

HSE audits are conducted to evaluate operators' compliance with the provisions of the Health and Safety in Employment Act 1992 and the Health and Safety in Employment Regulations 1995.

CAA Manager Health and Safety, and Lead Auditor, Ed Randell, says the new standards are aligned with the Australia/New Zealand Standard for Occupational Health and Safety Management Systems (AS:NZ 4801:2001), and also with the ACC programme Workplace Safety Management Practices. These standards will be used by the HSE Unit when performing the audits.

To demonstrate compliance under the new standards, operators now:

- need to have more in-depth documentation, such as policies, procedures and objectives, in place and ready for the auditor on the day of the audit;
- need to have the person responsible for health and safety in the company to be present in the entry meeting, during the audit, and at the exit meeting to answer the auditor's queries, and to provide written information as required.

The Process

The CAA's HSE unit sends out a letter and guidance information to operators well before their audit, explaining the documentation the auditor will review. This enables operators to familiarise themselves with the new audit standards and to know what information they should have ready for the auditor. Further information is available from the CAA web site, www.caa.govt.nz, see "Health and Safety".

SPAR Withdrawal

From 6 May 2010 Special Aerodrome Reports (SPARs) will no longer be produced by Airways New Zealand. The information that was contained in the SPAR is available from METAR and ATIS reports.

METARs are available from the MetFlight GA web site and ATIS is available from the IFIS web site. Weather information is also available during flight from air traffic services. For more information refer to AIC 7/09, effective 24 September 09.

MetFlight GA web site, metflight.metra.co.nz

IFIS web site, www.ifis.airways.co.nz

New CAA
Personnel Licences

The CAA is all set to roll out new-look licences this year. CAA Manager Personnel Licensing, John McKinlay, says the new, credit card-sized licences will be issued to applicants applying for an aviation document from June 2010 onwards.

The new licences will have a 3-D hologram overlay as well as other tamper-resistant features. They will have the same personnel information that is on the current licences.

The card design is aligned with other major ICAO contracting states, meeting ICAO Annex 1 requirements.

The new-look licences will be introduced in stages, beginning with Part 66 aircraft maintenance engineer licences. This will be followed by the introduction of Part 65 air traffic services licences, and then the various Part 61 pilot licences.

Existing licence holders are not required to change over to the new licences, unless they wish to do so. The fee will be $50, the same as the current fee for a replacement licence.

All licence issues or amendment applications after the various implementation dates will be to the new-look licence.

For more information on the new-look licences, refer to the CAA web site, www.caa.govt.nz, "Pilots" or "Maintenance Engineers".

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

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***
19 Apr 2010	26 Apr 2010	1 Jul 2010
17 May 2010	24 May 2010	29 Jul 2010
14 Jun 2010	21 Jun 2010	26 Aug 2010

Aviation Safety Advisers

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

Don Waters
(North Island)
Tel: 0–7–376 9342 Fax: 0–7–376 9350
Mobile: 027–485 2096
Email: watersd@caa.govt.nz

Murray Fowler
(South Island)
Tel: 0–3–349 8687 Fax: 0–3–349 5851
Mobile: 027–485 2098
Email: fowlerm@caa.govt.nz

John Keyzer
(Maintenance, North Island)
Tel: 0–9–267 8063 Fax: 0–9–267 8063
Mobile: 027–213 0507
Email: keyzerj@caa.govt.nz

Bob Jelley
(Maintenance, South Island)
Tel: 0–3–322 6388 Fax: 0–3–322 6379
Mobile: 027–285 2022
Email: jelleyb@caa.govt.nz

Aviation Safety & Security Concerns

Available office hours (voicemail after hours).

0508 4 SAFETY
(0508 472 338)
info@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)

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

ZK-CAN Cessna 185

Date and Time:	27-Oct-07 at 11:55
Location:	Tangahoe
POB:	4
Injuries (Minor):	1
Damage:	Substantial
Nature of flight:	Private Other
Pilot Licence:	CPL (Aeroplane)
Age:	56 yrs
Flying Hours (Total):	7000
Flying Hours (on Type):	2000
Last 90 Days:	133

The aircraft was landing on a sloping airstrip at Tangahoe, with a quartering tailwind prevailing. During touchdown the wind increased considerably, causing the aircraft to veer left off the airstrip. The aircraft sustained damage to the left wingtip, fuselage and left undercarriage. One passenger suffered minor injury.

CAA Occurrence Ref 07/3841

ZK-HIM Hughes 269C

Date and Time:	09-May-08 at 10:00
Location:	Kokatahi
POB:	1
Injuries:	0
Damage:	Substantial
Nature of flight:	Transport Passenger A to B
Pilot Licence:	CPL (Helicopter)
Age:	57 yrs
Flying Hours (Total):	9995
Flying Hours (on Type):	9200
Last 90 Days:	110

A helicopter landed in a remote area to drop off passengers and was struck by a campervan as it drove through the area. The helicopter suffered substantial damage.

CAA Occurrence Ref 08/1971

ZK-ARR Auster Mk 5

Date and Time:	19-May-08 at 12:00
Location:	Ashburton
POB:	2
Injuries:	0
Damage:	Minor
Nature of flight:	Private Other
Pilot Licence:	PPL (Aeroplane)
Age:	30 yrs
Flying Hours (Total):	142
Flying Hours (on Type):	26
Last 90 Days:	11

During the landing flare, the aircraft floated a little more than anticipated. After touchdown, there was insufficient braking available due to the wet grass surface to stop the aircraft in the distance remaining. The aircraft collided with the end fence at low speed, causing minor damage to the tailplane.

CAA Occurrence Ref 08/2150

ZK-PVC Cessna 402B

Date and Time:	20-Oct-08 at 15:30
Location:	Hastings Ad
POB:	2
Injuries:	0
Damage:	Substantial
Nature of flight:	Training Dual
Pilot Licence:	CPL (Aeroplane)
Age:	59 yrs
Flying Hours (Total):	20050
Flying Hours (on Type):	5000
Last 90 Days:	200

The aircraft landed normally, and on roll-out the student selected landing gear up instead of the flap; remedial action was taken, but the lefthand undercarriage collapsed. Because of the cross-wind landing, and light aircraft weight, the lefthand squat switch did not isolate the landing gear up circuit. The squat switch had been recently checked on previous maintenance and was found to be functioning correctly.

CAA Occurrence Ref 08/4438

ZK-SWY Alpha R2160

Date and Time:	11-Nov-08 at 11:25
Location:	Queenstown Ad
POB:	1
Injuries:	0
Damage:	Substantial
Nature of flight:	Training Solo
Pilot Licence:	Nil
Age:	18 yrs
Flying Hours (Total):	43
Flying Hours (on Type):	43
Last 90 Days:	12

The pilot was on a solo cross-country training flight, and was to perform a touch and go on Runway 23 in Queenstown. There was an estimated cross-wind component of 12 knots from the left on Runway 23. As the pilot flared the aircraft, it drifted to the right. On touch down the aircraft veered left. The aircraft continued left across the runway and onto the grass. The left wing tip struck a runway marker board rotating the aircraft to the left resulting in the aircraft coming to rest in a ditch that runs parallel to the runway.

CAA Occurrence Ref 08/4740

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.

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

Akrotech G200

Canopy latch

Part Manufacturer:	Akrotech Aviation/Lennart Wahl
ATA Chapter:	5610
TTIS cycles	19

While conducting a flight test for establishing oil pressure in attitudes close to vertical up, the canopy latch failed and the canopy swung open. The barrel sleeve on the canopy frame (for the latch pin) had de-bonded. As the canopy swung fully open to the right, it broke it's tether rope and impacted the right aileron, but the canopy remained attached at both forward and aft hinges. The aileron control horn was bent, affecting roll control. The pilot diverted to a local aerodrome and landed safely. Engineering investigation revealed that the barrel surface was smooth instead of textured as required to provide adhesion to the composite structure.

CAA Occurrence Ref 10/126

Gippsland GA200

Exhaust valve cam follower

Part Model:	0-520A1D5
Part Manufacturer:	Lycoming
ATA Chapter:	8500
TSI hours	87.8
TSO hours:	2009.98
TTIS hours	2997.85

The aircraft was reported to have an oil leak from the engine. Maintenance investigation found that the exhaust valve cam follower for the number five cylinder had broken in half. This caused the section inside the engine to push the push-rod tube shroud retainer out of the crankcase, dislodging the push-rod tube seal, and causing the oil leak. The engine was due for an overhaul and was just entering "on condition" phase. An engine overhaul was carried out.

CAA Occurrence Ref 09/4518

Piper PA-23-250

Door

ATA Chapter:	5210

The door latch striker was out of alignment with the door pin, allowing the door to open in flight. The aircraft returned to departure aerodrome.

CAA Occurrence Ref 09/1066

Piper PA-31

Terminal

ATA Chapter:	2400

The aircraft disappeared from radar and lost radio contact. Attempts to contact pilot via mobile phone were unsuccessful. The pilot later phoned ATC by mobile phone and advised that he was overhead Te Awamutu at 7500 ft and descending into Hamilton where the aircraft landed safely. Maintenance investigation found that the main output wire had broken at the righthand alternator. The alternator "out" light would not have illuminated as there would still be AC voltage at the Aux terminal preventing illumination of the light. There was a loose crimped terminal on the lefthand alternator field wire. This was probably a pre-existing defect, causing intermittent charging. The poor connection would not have supported a full electrical load. The righthand alternator output wire and the lefthand alternator ground wire connectors were re-terminated. A full ground run and electrical system test was carried out. Staff have been instructed to pull back the insulation boots during inspection to check wire and terminal security.

CAA Occurrence Ref 09/1549

Schweizer 269C-1

Piston rings

Part Manufacturer:	Lycoming
ATA Chapter:	7100
TSI hours	36.6
TSO hours:	1034.9
TTIS hours	3041.9

The pilot experienced a rough running engine so conducted a precautionary landing. Broken compression rings were discovered in the No 4 cylinder. The cylinder and piston were replaced.

CAA Occurrence Ref 09/1691

Tecnam P2002-JF

Saddle bolts

Part Number:	UNI 5931 M9X70
ATA Chapter:	3210
TTIS hours	898

During taxi the pilot heard an unusual noise coming from the left hand main landing gear. On removing the fairing, he discovered a broken bolt and very loose landing gear attachment saddle. Maintenance investigation found the rear main landing gear saddle bolt was broken and the front bolt bent. The cause could not be determined, no prior reports of heavy landings. All MLG bolts were replaced. The operator suspects that the rough surface condition of the grass vector at the home aerodrome could be a causal factor.

CAA Occurrence Ref 09/4478

Mountain Flying

AV KIWI SAFETY SEMINARS

You are never far away from a mountain, or from being affected by one, in New Zealand – they're unavoidable. Many pilots avoid flying in the mountains, while some underestimate the dangers and give themselves a scare.

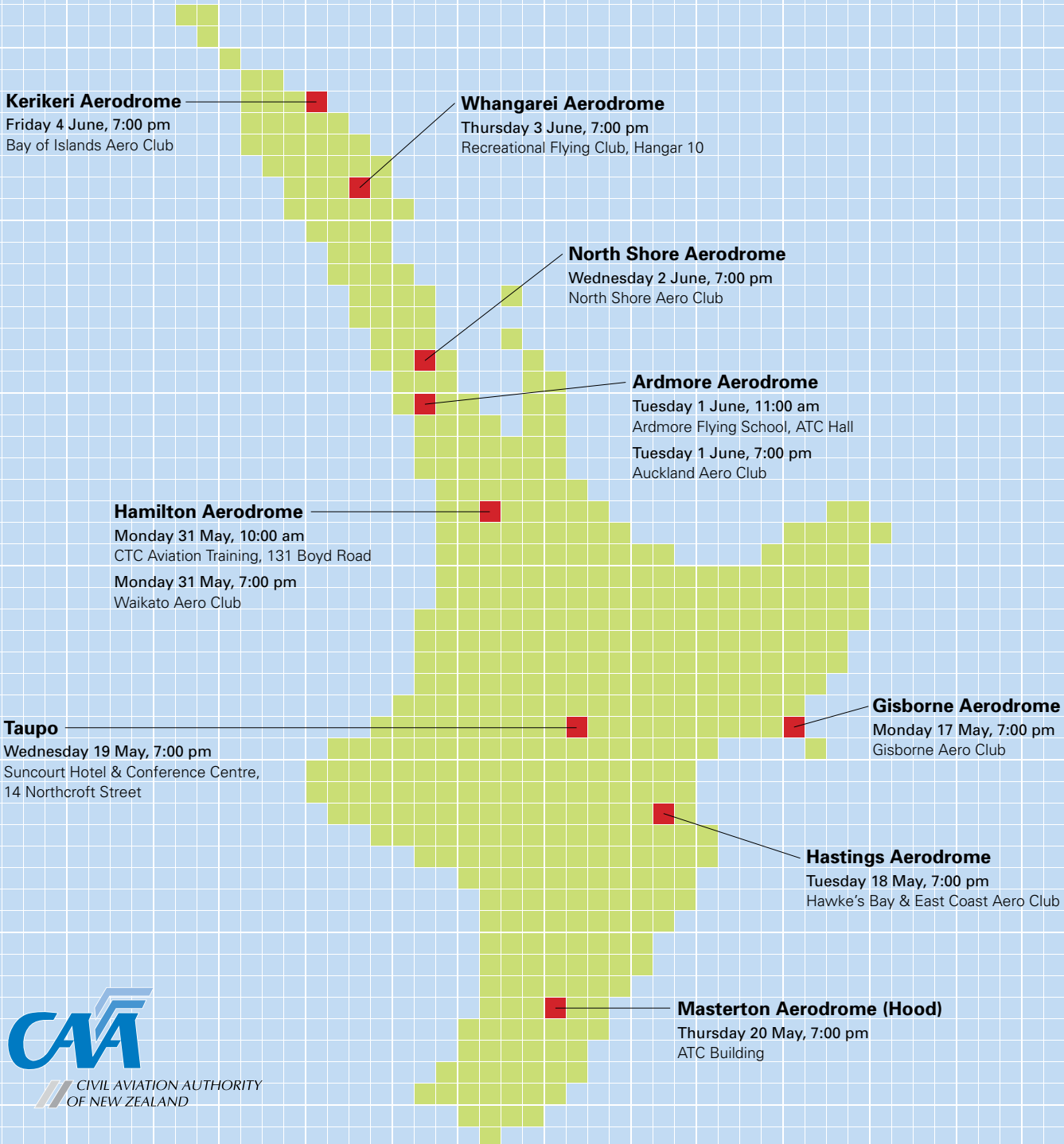
You need a complete set of skills (ideally specialised training) to fly safely in the mountains, and once you learn those skills, you and your passengers will have the opportunity to enjoy those flights. Those skills will also help you out when operating low level, or any time you can't see a clearly defined horizon.

Because of New Zealand's challenging terrain, mountain flying will be part of the pilot syllabus from 2011.

This year's AvKiwi Safety Seminars will give you a head start, along with some tips to help you fly safely and comfortably in the mountains. When you attend you will receive a brand new CAA-produced DVD on mountain flying, completely free and before general release.

This year our presenters are Jim Rankin, RNZAF Instructor, and Carlton Campbell, CAA Training Standards Development Officer – both have spent years flying in the mountainous terrain of New Zealand.

Here is the second set of seminars. A complete list of seminars is on the CAA web site, www.caa.govt.nz, see "Seminars and Courses" and it is updated as venues are finalised. More venues and dates will be published in the May/June *Vector* – so keep an eye out.



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OF NEW ZEALAND