

VECTOR

POINTING TO SAFER AVIATION

Focus on Flight Planning

Stay Informed

Exploring
Mount Cook

Should I Stay or
Should I Go Now?





Focus on Flight Planning

An important aspect of any flight away from home base is thorough flight planning. Having a well thought-out plan before you get airborne will help you enjoy the flight, arrive refreshed, and return alive.



Stay Informed

Airways' Flight Information provides a comprehensive range of services – all you have to do is ask. We remind you of the services available, when to use Flight Information, and tips for good communication.



Exploring Mount Cook

The Southern Alps are breathtaking from the air, but a busy and challenging environment to fly in. We give you some tips for a safe and enjoyable flight around Mount Cook this summer.



Should I Stay or Should I Go Now?

The Rescue Coordination Centre New Zealand (RCCNZ) gives advice on what to do following an aircraft accident.

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Cover: While the shortest distance between two points is a straight line, this may not be the safest, or the wisest, route when flying. See *Focus on Flight Planning*, page 3.

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Focus on Flight Planning

An important aspect of any flight away from home base is thorough flight planning. Having a well thought-out plan before you get airborne will help you enjoy the flight, arrive refreshed, and return alive.

Even if you are going somewhere familiar, having some key details worked out beforehand, and then getting the most up-to-date weather and NOTAMs, is a must.

Before the flight

When you can, begin pre-flight planning several days in advance.

- » Study the applicable charts and plan the route. Then plan for alternatives.
- » Refamiliarise yourself with the AIP and your legal requirements.
- » Check the weather forecasts.
- » Seek out some local knowledge on the routes and destination.
- » Ask yourself whether the proposed flight is within your capabilities? Update your personal minimums to reflect your currency levels.
- » Brief your passengers about the realities of flying in light aircraft.
- » If you are taking the aircraft away from home base, check if there are enough hours left on it to complete your flights.

Planning the Route

While the shortest distance between two points is a straight line, this may not be the safest, or the wisest, route when flying. By all means draw the straight line on the chart, but then think about:

- » what terrain you are flying over;
- » airspace you are flying through;
- » aerodromes you are in the vicinity of;
- » the weather that will affect your flight – especially cloud;
- » and likely traffic.

Continued over >>



Then consider a practical route that takes into account these factors.

Think about the best way to depart the airfield and arrive at your destination. It may be that you can't go straight there – you may need to go via reporting points (VRP), for example. Plugging the VRPs straight into your GPS has advantages, but consider how many other people are doing exactly the same thing. Be particularly careful when arriving exactly overhead VRPs for this very reason.

Will you need a refuelling stop on the way? If you do, allow plenty of time for this, as invariably it will take far longer than you think to refuel, let the passengers out for a toilet break, and then get them back into the aircraft.

Alternative Route

While in this preliminary flight-planning phase, it is worthwhile making provision for at least one other safe alternative route – a plan 'B'. In planning this alternative route, take the same level of care as you do with your primary route. Having a well-researched plan B takes a lot of pressure off if the weather deteriorates and you have to use it.

Flight Log

Prepare a flight log with as much pertinent information as you can: legs, distances, tracks, airspeed, cruising altitudes, radio frequencies, fuel, and so on. You can fill in a lot of information beforehand, and then finish the calculations, once you have the up to date weather on the day.

Study

Now turn your attention to studying the *AIP New Zealand*. It is important that you check the *AIP New Zealand Supplement* and the applicable sections of *AIP New Zealand, Vol 1* to determine if there is any information that might affect your flight. Don't just rely on getting the area NOTAMs on the day, as they are not the sole source of all temporary aerodrome and airspace information.

Legal Requirements

Rule 91.217 essentially says that, before a flight, the pilot-in-command must obtain and become familiar with, all information concerning that flight, including:

- » current meteorological information;
- » fuel requirements;
- » alternatives available;
- » NOTAMS and Supplements;
- » aerodrome conditions;
- » aircraft performance data;
- » and in the case of twin-engine aircraft –
 - engine inoperative procedures; and
 - one engine inoperative performance data.

Brief yourself on your other requirements, for example: fuel reserves, cruising altitudes, and VFR met minima.

Check the Weather

Take a look at the long-range forecast to get an idea of whether the flight is feasible.

Talk to a Local

It can be worth getting some local knowledge on the area or your route (including aerodrome information) well before the trip. Most local operators are very happy to provide information and will probably offer you plenty of other advice and tips.

Good Tips

- » Draw 10 NM rings around airfields you will pass nearby, so you will know whether your track takes you into their area, and you need to speak to them on the radio.
- » Avoid flying close to aerodromes unless you need to, as they tend to be the busier airspace.
- » Use a highlighter pen to mark relevant weather and NOTAMs.
- » Put 10 NM distance markers along the track line to help you keep track of time and distance travelled, distance from/to features, and drift.
- » Draw wind vectors on your chart to remind yourself of the general flow.
- » Pre-prepare groundspeed checks along your track. By choosing easily identifiable features there is more chance you will remember to do them, and they will be more accurate.
- » Mentally note a reciprocal compass heading just in case you need to turn back.
- » Always have an alternate aerodrome in mind – and sufficient fuel to get there.

Personal Minimums

Think about visibility restrictions, terrain, possible turbulence, and the effects of these on your workload, and handling of the aircraft – and you will realise why it is important to set personal minimums.

Personal minimums take into account a wide range of criteria, particularly pilot, aircraft, environment, and external pressures. They are an invaluable tool in assisting you to decide if a particular situation (route, weather, aircraft type, etc), is within your personal limits.

When you are working out how long it will take you to get ready and airborne on this flight, allow some time to go through the “I’M SAFE” checklist.

Brief your Passengers

Discuss the vagaries of light aircraft trips with your passengers, in particular:

- » Departure and arrival times cannot be guaranteed – the weather may have other plans.
- » The weight of baggage they can bring is limited – anything over their limit will be left behind.

- » Turning back, taking an alternative route, or diverting, is always a possibility.
- » What your contingency plans will be if you are delayed, diverted, or have to cancel.

On the Day

Allow plenty of time on the day to be sure that final pre-flight preparation is not rushed, and be realistic about the time you need to plan, get your passengers ready, and make any intermediate stops enroute.

- » Obtain the most recent weather and NOTAMs and check them carefully. If in doubt, discuss the conditions with a more experienced pilot.
- » File a flight plan.
- » Make sure the aircraft has all the equipment you will need for the whole time you are away:
 - tie-downs;
 - fuel card;
 - control locks;
 - spare oil;
 - lifejackets and survival equipment;
 - something to clean the screen with.

Continued over >>

There is a real danger in focussing on the *gain* of reaching your destination compared with the *losses* associated with not going, or turning back. For example, extra costs, missed appointments, disappointed passengers, etc. Don't fall into this trap – look for the *gains* from the alternative action – being alive and safe with an intact aircraft (with probably very relieved passengers), having avoided the potential major *loss* (and cost) of bent metal, injuries, or worse.

Weather

The most up-to-date weather must be obtained before flight. Weather issued on the morning of an afternoon flight is good for assessing the trends but should be updated. It is equally important to devote a generous amount of time to weather interpretation – especially when conditions are borderline – so that you can have a good think about how the conditions might affect your flight. Using a highlighter pen to mark the key points as you read the forecast is useful.

There are two distinct steps you need to follow when looking at the weather and deciding if it is good enough for your flight.

Firstly decode the weather briefings, making sure you look up any codes you don't recognise (the GEN section of the *AIP New Zealand Vol 1*, the CAA web site, and the weather interpretation card, all have information to help decode aviation weather forecasts).

Secondly, build a mental picture of what the weather forecasts and reports are saying, and how that will affect your flight. Be honest with yourself when trying to form a picture of what is happening. If you're not sure, ask someone who has more experience to help you.

If you decide to proceed with the flight – with the intention of seeing what the conditions are like – do it only on the basis that you will divert or turn back when they surpass a specified value (eg, "I will divert or turn back if the visibility and cloud base deteriorates below X").

If you do not feel comfortable with the conditions, it's time to tell your passengers the flight is off.

Making such a decision requires a fair amount of personal discipline, but this can be made considerably easier by having a robust set of personal minimums to guide you.

NOTAMs

Having the latest NOTAMs is very important.

Read the NOTAMs carefully – highlighting the ones that will affect your flight.

Talk to a Local

If the weather conditions on the day are approaching your personal minimums, call the local operator(s) again, to gauge their assessment of the conditions enroute and at the destination.

File a Flight Plan

We highly recommended you file a flight plan, or at a minimum organise your own flight following service. Tell someone where you are going and when you are planning to get there. Provide written instructions on what, specifically, to do if you don't check in with them by a certain time. If you are asking a family member to complete this task, be aware that the stress of you not checking-in could make this very difficult for them.

Filing a flight plan will ensure that someone will miss you if you don't arrive, and search and rescue operations can start immediately. Equally, when you have filed a flight plan, remember to amend the SARTIME or terminate the flight plan when you do arrive safely. *See our article, page 9, about SARTIME etiquette.*

In the Aircraft

Gather together your kneeboard with the completed flight log, your pre-folded charts, any aerodrome pages you could need, and any other useful information. Arrange them so that you have them nearby, and in the order you will need them.

An important part of in-flight management is to continually review the situation and update alternatives during the flight. For example, reviewing the cloud base in relation to enroute terrain, or reviewing surface wind conditions at the destination. Even if the weather ahead seems fine, you must always maintain an awareness of what the weather is doing behind you, and be able to recognise when the conditions are about to fall below the limits you've set. ■

Information Sources

Met information:

New Zealand AIP (www.aip.net.nz),
Civil Aviation Authority web site
(www.caa.govt.nz).

Met reports and forecasts:

MetFlight GA
(<http://metflight.metra.co.nz>),
IFIS (www.ifis.airways.co.nz),
MetService (www.metservice.co.nz).



TAWS

for Part 135 Operators

In the future, Terrain Awareness and Warning Systems (TAWS) will be required to be fitted to aeroplanes operating IFR under Part 135.

The date by which TAWS must be installed depends on two factors. Firstly on the date the rule comes into force, and secondly on the seating capacity of the aeroplane.

The rule will not be signed by the Minister until after the General Election. Once signed, a notice of rule amendment is placed in the Gazette, and 28 days after this notification the rule comes into force.

Implementation Schedule

For aeroplanes already registered in New Zealand on the date the rule comes into force:

With a passenger seating of 5 or less –

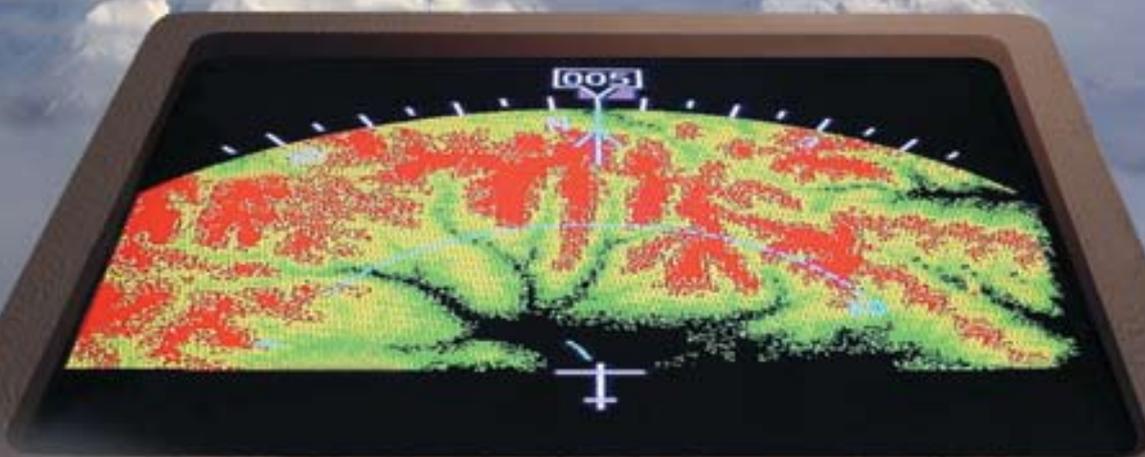
TAWS must be fitted within 36 months of the rule coming into force.

With a passenger seating of 6 or more –

TAWS must be fitted within 24 months of the date of the rule coming into force.

For aeroplanes first registered in New Zealand after the date the rule comes into force, there is a 12-month transition period. TAWS must be installed in these aeroplanes within 12 months of the rule coming into force.

Turbine-powered aeroplanes must have Class A or Class B TAWS installed, and piston-powered aeroplanes must have Class C TAWS installed. In addition, the operator of a TAWS equipped aeroplane must ensure that the TAWS database is updated at least every six months. ■





Stay Informed

Airways' Flight Information provides a comprehensive range of services – all you have to do is ask.

Flight Information will:

- » Amend or terminate a flight plan for you.
- » Update your SARTIME.
- » Record your position reports.
- » Provide weather information on request.
- » Make a HAZMET broadcast on the hour, giving SPECIs, SPARs, SIGMETs and amended TAFs issued in the previous 90 minutes. A summary of NOTAM relevant to VFR operations is also given, plus new met reports or NOTAM are broadcast on receipt.
- » Deliver IFR clearances to aircraft at uncontrolled aerodromes, provide IFR traffic information to IFR aircraft (throughout most of the South Island and north of Auckland), and pass on IFR-related NOTAM.

When to Be on a Flight Information Frequency

Listen to Flight Information anytime you are in uncontrolled airspace, except while in a Mandatory Broadcast Zone, Common Frequency Zone, or within 10 NM of an aerodrome. In these instances, change to the local frequency.

If you listen out on the Flight Information frequency, and make regular position reports, you will not only be easier to find

if something goes wrong, but you will also alert other aircraft in the area to your presence. If you have a problem and make a MAYDAY or PAN call, this will be heard and responded to (subject to VHF coverage), unlike broadcasting a distress call on an unattended frequency.

You will find the frequencies for contacting Flight Information on the FIS COM chart in *AIP New Zealand, Vol 4, GEN 3.4-17 and 18*.

Tips When Talking to Flight Information

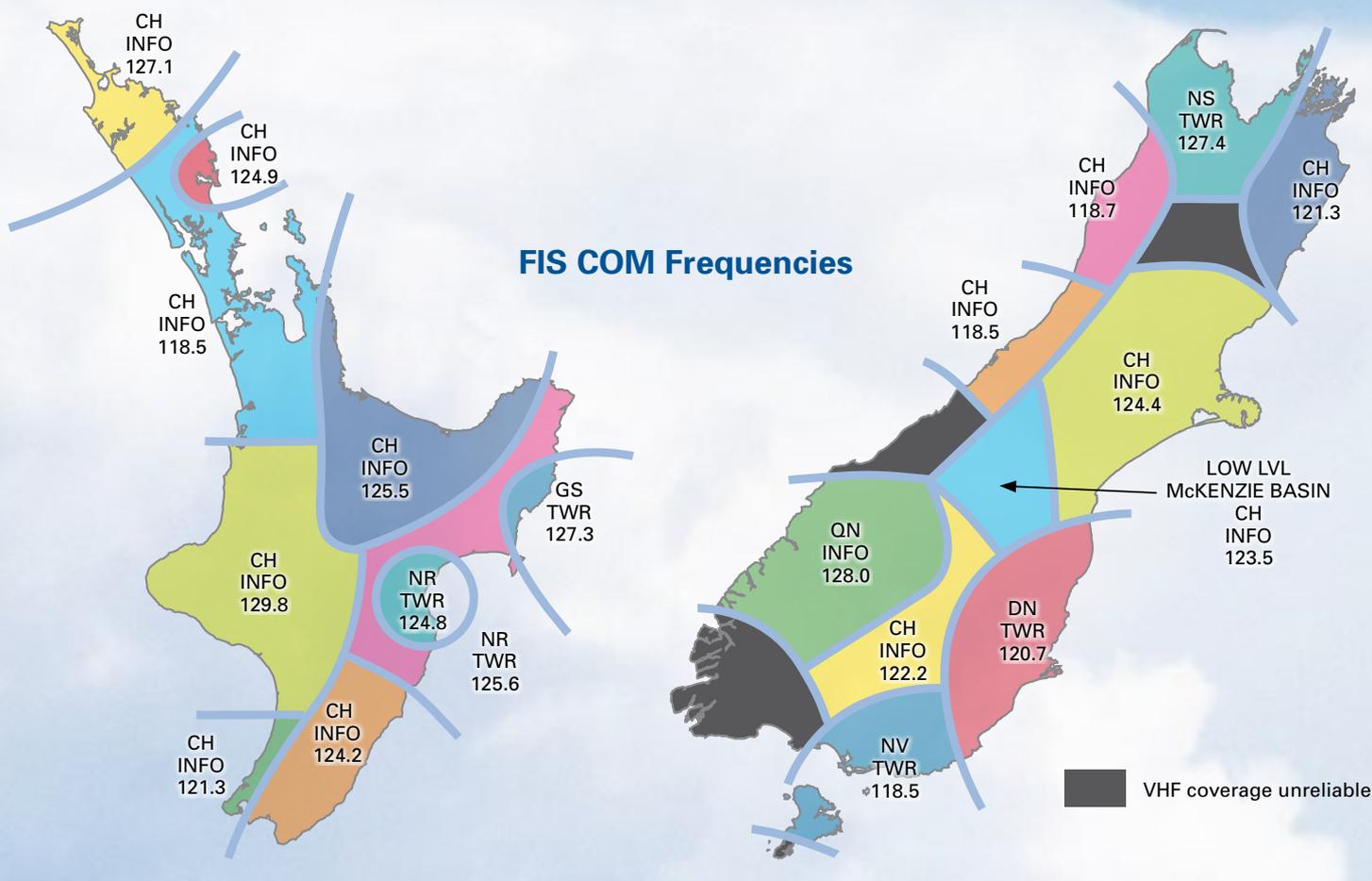
On average, between 50 and 60 aircraft are on a VFR flight plan at any one time, making the Flight Information Officers very busy.

Be patient when trying to get hold of Christchurch Information. They monitor 14 different frequencies at once, spread from one end of the country to the other.

You will hear Christchurch Information whenever they transmit, as they broadcast on all 14 frequencies. You will only hear other aircraft, however, if they are on the same frequency as you.

- » Listen carefully and wait for a gap before transmitting.

- » Always establish two way communications first, before launching into the purpose of your transmission.
- » If you are told to 'standby', rest assured that Information will come back to you.
- » Make a position report only when your location has significantly changed from your last position report. Reporting every three or four minutes is not necessary. As a general rule, 30-minute position reporting is a good guide to follow.
- » Enunciate place names carefully. Pilots are often asked to repeat a place name several times if it is not said clearly enough, or spoken too fast.
- » When reporting, reference your position to commonly known places (if possible), rather than obscure places.
- » If you are making changes to a flight plan, please give all the changes at the same time, to prevent the Flight Information Officer from closing your flight plan details prematurely and having to reopen it.
- » You only need to read back the QNH, rather than all your flight plan changes the Flight Information Officer has read back to you.



When filing a VFR flight plan, make sure you use the official ICAO designator for your aircraft type, and the correct two letter designator for aerodromes. It will not help to find you if you have made up your own combination of letters. Ideally use the IFIS web site, www.ifis.airways.co.nz, to file a plan.

Who is Watching Out for Me?

Be aware that Christchurch Information do not monitor VFR or IFR flights on a radar screen. They are totally dependant

on your position reports. If search and rescue action is required, your last position report is provided to RCCNZ.

If you are within radar coverage, and on a discrete code, your transponder transmissions will be made into a radar track plot to see your movements. Many parts of New Zealand have no radar coverage below 9500 feet, so you may not be 'seen' by radar on many of your flights whether you have a discrete code, or not. If you are seen, but squawking 1200, there could be dozens of other aircraft using the same code – making

it very difficult to figure out which one you are.

Remember that radar is line of sight, so if you fly down a valley or behind a hill, radar will lose sight of you. The only way to guarantee that someone knows where you are is to use a satellite tracking system.

Feedback Invited

If you have any feedback on the service you receive from Christchurch Information, email Karen Smith, karen.smith@airways.co.nz ■

Amend SARTIME or Terminate Flight Plan



Eight to ten percent of all flight plans go overdue every month (about 230 flights each month), and it is not uncommon for some pilots to go overdue three times in the same flight. The number of false alarms generated by pilots forgetting to amend or terminate their flight plan occupies resources that should be ready and waiting to help those in genuine need.

The minute a SARTIME goes overdue, Flight Information attempt to contact the aircraft by radio. They check their records to make sure an update to the SARTIME

hasn't been misheard or not acted on, and if the flight plan includes a cellphone number this may be called in an attempt to track down the pilot. If contact cannot be made, the situation is handed over to RCCNZ to begin search and rescue action within 15 minutes of the aircraft going overdue.

If you are filing a flight plan for a multi-leg flight, nominate a SARTIME for your first point of intended landing, then on arrival at each intermediate point, amend it for the next stop. This way, if something

goes wrong on your first sector, action will be initiated immediately. If you nominate a SARTIME for your final destination, you will not be missed until the end of the day.

Don't leave your SARTIME update until the last minute, allow time for it to be processed after the Flight Information Officer has received it.

The CAA have produced a colourful keyring to help remind pilots to amend their SARTIME or terminate their flight plan. To obtain one, email: info@caa.govt.nz ■

Exploring Mount Cook

The Southern Alps are breathtaking from the air, but a busy and challenging environment to fly in.

Here are some tips for a safe and enjoyable flight around Mount Cook this summer.

Firstly, you must have adequate mountain flying training before venturing into the Mount Cook area. The *Mountain Flying* GAP booklet is a good introduction, but there is no substitute for training with an experienced instructor.

Next, pick the right day.

Ideally, a flight into the Southern Alps will be in anticyclonic conditions (more common in late summer and autumn), as this generally results in clear skies and light wind. In spring and early summer there is more frontal activity and conditions are more likely to be unstable. Early morning and late afternoon are the best times, as there is less wind and cloud (however early morning valley fog may exist).

The most important factor in deciding whether to go or not, and what route to take, should be wind. Study the weather forecast carefully – paying particular attention to the wind strength

and direction in the Area Forecast. From this, you can work out where to expect turbulence and cloud.

If the wind is less than 15 knots, conditions should be predictable and comfortable. As the wind strength increases; predicting wind patterns, turbulence, lift, sink, and windshear becomes more difficult.

The *In, Out and Around Mount Cook* GAP booklet gives detailed information on the conditions you can expect for each different wind direction (with charts showing areas of smooth versus turbulent flight). For example:

Prevailing west and northwesterly winds generally produce smooth conditions in the west and turbulence in the east (with rotors and mountain waves). Southwesterlies provide the most unpleasant flying conditions. Extensive windshear occurs at all levels, and conditions will be turbulent both east and west of the Main Divide.

Take cloud into account when picking your day. Typically, one side of the Southern Alps will be clear, while the other is cloudy, so caution is required when crossing the Main Divide. In easterly conditions, the West Coast is generally clear. In westerly conditions, the opposite is true. Always remain high enough to glide clear of cloud in the event of an engine failure.

In addition to studying the forecast, local operators are happy to give you advice on the weather and confirm the actual conditions in the area.

Finally, prepare thoroughly. Plan your flight on the Visual Navigation Chart (VNC), and familiarise yourself with the Visual Reporting Points along the route. If you stay high (10,000 feet or above), and clear of the Main Divide, you will avoid most local traffic.

November to April is peak tourist season. During this period, there can be 30 or more local aircraft operating



in the area. Avoid the peak times for tourist flights – on the eastern side this is between 10 am and 3 pm, and on the West Coast most are early morning or late afternoon.

Frequency Jamming

The Mount Cook and Westland National Parks are within the Southern Alps Mandatory Broadcast Zone. At peak times, simultaneous radio calls on 118.6 MHz result in high-pitched radio interference.

When flying near the Main Divide, local operators recommend that radio calls be made at 3 to 5 minute intervals, but keep transmissions brief.

State position, aircraft type (in your first transmission), altitude, direction of travel to the next reporting point, and whether you are climbing or descending. For example, “Alpha Bravo Charlie, upper Tasman glacier, 10,200 feet, climbing west”.

If a local aircraft calls you – please answer. If they can establish your position and intentions, they will keep out of your way. 118.6 MHz is a collision avoidance frequency, so communication between pilots is encouraged. Remember to keep your joining and circuit calls brief too.

In-flight Tips

A constant lookout is essential for judging distance from terrain and spotting traffic. Keep your eyes outside.

When valley flying in high-density traffic areas, keep right. If turbulence or downdraughts make it necessary to fly on the left, say so in your position reports.

Monitor changes in wind direction – you may need to change your planned route as areas of turbulence change. This can also lead to the formation of low cloud, cutting off access to aerodromes in the area.

QNH

Use of the Ohau QNH on both sides of the Divide ensures common altitudes in position reports, even though the QNH can be several hectopascals different on the West Coast side.

On some days this could result in a difference of up to 300 feet on the altimeter. If you plan to land on the West Coast, be aware that your height above terrain could be incorrect. ■

The *In, Out and Around Mount Cook* GAP booklet gives detailed information on weather, operating in the MBZ, Visual Reporting Points, suggested scenic flight routes, and local aerodrome procedures. For a copy, email: info@caa.govt.nz.

Should I Stay or Should I Go Now?

The question has often been asked – should I stay with the aircraft or should I leave with the ELT following an accident?

Rescue Coordination Centre New Zealand (RCCNZ) Group Manager, Nigel Clifford gives advice on what to do following an aircraft accident.

“Every aircraft accident is different and a site assessment needs to be conducted before any decision is made on whether to stay with the aircraft or to leave it.”

To help make your decision, the RCCNZ gives the following points for consideration:

You will need to move if you are in imminent danger from the accident site. Fire would be a good example of this.

You may want to move if:

- » you can get to help or a communications point easily, or
- » if you suspect that the ELT signal is being blocked, such as in a tight gully, or heavily wooded area, and you have a removable or Personal Locator Beacon.

“In all other situations you should stay with the aircraft, as it is easier to see from the air,” says Nigel.

The RCCNZ receives an average of 114 ELT activations per year. 104 of these activations are false.

The RCCNZ advises pilots to activate their ELT beacon at any time when the aircraft is in imminent danger, as there is more chance of the signal being received while the aircraft is in the air.

They also advise leaving the beacon on, even if the threat is removed, as they have no way of knowing if you are safe, or in need of help, once the signal is lost.

“If the threat has gone, then establish communications with ATC to advise them of your situation before turning the beacon off.

“If we receive an ELT activation and then lose the signal, we will assume that the aircraft has had an accident, and start search and rescue procedures,” says Nigel.

If you are on the ground and accidentally activate an ELT, or you hear an ELT transmitting on 121.5 MHz, then call the RCCNZ on 0508-472-269. ■

Very few 406 MHz beacons are removable. Those that are removable require a portable aerial that may not necessarily be supplied with the beacon.

Pilots should know what type of beacon their aircraft is fitted with, so that in the event of an emergency they can confirm it is working correctly.

Do you know:

- » If your ELT is portable?
- » Does it have a portable aerial?
- » What do the lights on the beacon represent?
- » How do you turn it on?
- » How do you turn it off?
- » How long will it transmit for?



Own Your Own Aircraft



For anyone into flying, owning your own aircraft seems like the ultimate dream.

This is important because the “person entitled to the possession of the aircraft for 28 days or longer” has a number of responsibilities under the Act. We will use the same wording as the Act.

Change of Owner

An aircraft must have a Certificate of Registration issued to the owner. When an aircraft changes owner, you have 14 days to notify the CAA. This is done by completing the form on the reverse of the certificate, or CAA Form 24047/03 *Change of Possession of Aircraft*. Both the person relinquishing possession of the aircraft, and the person taking possession of the aircraft need to complete this form (there is a different form if the person relinquishing is not available).

It is important to remember this process must be carried out whenever the “person entitled to the possession of the aircraft for 28 days or longer” changes (even though the person with legal title to the aircraft may not).

If the person taking possession is new to the aviation system, they will need to complete the Fit and Proper Person process (CAA Form 24047/02). It is a requirement of the Civil Aviation Act that anyone who has “control over the exercise of the privileges” of an aviation document (eg, Certificate of Registration) must satisfy the Director of Civil Aviation that they are a fit and proper person to do so.

It is also a requirement that holders of an aviation document supply the Director with an address for service (ie, a physical address), and to promptly notify the Director of changes to their address.

Most aircraft are fitted with an emergency locator beacon. It is important to inform the Rescue Coordination Centre New Zealand of a change of owner, and changes in contact information at any time. Email: 406registry@maritimenz.govt.nz.

Many people, companies, and organisations consider aircraft ownership for convenience and economy. And some buy an aircraft to lease as an investment. In all these situations, there are legal obligations to be met, and it is a good idea to know them beforehand.

Who is the ‘Owner’?

There can be some confusion over the terms ‘owner’ and ‘operator’. For example, an aircraft may be financially owned by one person or group (ie, they have legal title to it), but leased to another person or group, such as a club or training organisation, that has the aircraft in their possession and operates it.

The CAA is interested in safe aviation operations, so the focus is on the operator. The Civil Aviation Act, however, says, “owner, in relation to any aircraft, includes any person lawfully entitled to the possession of the aircraft for 28 days or longer”. So to put it simply, the Act calls the “operator” the “owner”.



The owner of an aircraft can be an individual, partnership, syndicate, organisation, or company. When more than one person is involved, for example a partnership or syndicate, all the individuals must complete the Fit and Proper Person (Aircraft Registration) Questionnaire unless they already hold an aviation document, such as a Part 61 licence. An individual must be nominated to take responsibility for the obligations of an aircraft owner.

Airworthiness

There are a number of maintenance aspects that are the legal responsibility of the owner, not the aircraft engineer you employ. In other words, you can contract your maintenance provider to do the work, but the legal responsibility is still yours. In many organisations, a Maintenance Controller will see to these obligations, but if you own your own aircraft, you need to be your own Maintenance Controller.

The aircraft must have a valid Airworthiness Certificate, and this must be carried in the aircraft.

There are a number of options in choosing a maintenance programme, depending on the level of operation. For example, many owners will probably use the maintenance programme recommended by the aircraft manufacturer. Discuss this with your maintenance provider.

There are separate maintenance logbooks for the Aircraft; Engine; Propeller (if applicable); and Airworthiness Directives and Modifications. The aircraft Technical Log (CAA Form CA006) reflects the current maintenance status of the aircraft at any time. It is helpful because it shows when the next 100-hour and Annual Review of Airworthiness (ARA) checks are due. You need to make sure these are all kept up to date.

A 100-hour inspection is required annually, or every 100 hours, whichever comes sooner. The ARA is just that – an annual review. It could be carried out at the same time as the 100-hour check, but this will depend on the hours the aircraft is flying. You could compare this to maintaining your car. For example, a Warrant of Fitness is required every year, but you will have it serviced according to mileage, say every 10,000 km.

Airworthiness Directives must be complied with. Manufacturers (of your aircraft, engine, propeller, etc) also issue

maintenance advice in a number of other formats, eg bulletins, letters, etc. You should assess these regularly with your maintenance provider, and incorporate as appropriate.

The maintenance aspects could be the most complicated part of operating an aircraft for you. It is important to understand your responsibilities, and keep tabs on the requirements in conjunction with your maintenance provider.

Sport and Recreation Aircraft

Put simply, the registration requirements apply to all aircraft, except hang gliders, paragliders, and parachutes. Gliders, microlight aircraft, and manned balloons must be registered.

There are, however, different airworthiness requirements for most sport and recreation aircraft. You should study the rules for the particular group you are active in, for example Part 103 for microlight aircraft.

Other Requirements

There is a participation levy to pay each year. It is based on the weight and use of your aircraft, and contributes to some of the CAA's functions, for example: continuing airworthiness, safety investigation, safety education, and safety checks.

Owners of most registered aircraft are required to provide statistical information on the hours flown for the aircraft. This gives the CAA the ability to analyse occurrence data in relation to hours flown.

If the aircraft is involved in an accident, and the pilot-in-command is incapacitated, responsibility to report the occurrence is the owner's.

Further Information

This isn't a complete guide to operating an aircraft. It is an overview of what is involved for those thinking about buying their own aircraft, and a memory jog for existing owners of their responsibilities.

The CAA web site "Aircraft" section has more information about aircraft ownership. See also Advisory Circular AC47-1 *Aircraft Registration and Marking*.

Biennial Flight Review

The BFR does exactly what it says on the tin – it is a flight *review* every two years – and you must complete the review before you can continue to use the privileges of your licence (unless exempted by one of the conditions in rule 61.39(b)).

The instructor doing your review will be making sure that your skill level and decision-making standards are at least as high as they were at the initial issue of your licence.

Ideally, you should get some practice in beforehand. If your BFR has expired, it is still possible to fly, but only as a student pilot (solo and under supervision).

Because this is a review, you should not expect that it will necessarily be completed in just one flight. It is more likely that the BFR process will take a number of flights – it depends on your currency, competency, and the conditions.

The BFR is your chance to maintain and improve your skills. It is not a flight test with only one chance of getting

it right – it is a process where all of the elements are reviewed, giving you a chance to show your proficiency. If you are not quite as proficient as you should be, you will get the opportunity to practice until you are.

It is also an opportunity for your instructor to confirm you are remaining up to date with any changes (eg, airspace, rules, documents, etc) that have occurred since your last BFR.

Since the review can take a number of flights, you may start your BFR 60 days before it expires, and it will still keep its original expiry date (in other words, your two years renewal will start from that date).

The BFR includes all of the elements from your RPL/PPL/CPL flight test – and you must do all of them – crosswind takeoffs and landings are not optional.

For CPLs and ATPLs, while you hold a current competency check or instructor rating, you do not require a BFR, see rule 61.39(b). ■





Engine Escalation Deadline Approaches

In March of last year, rule changes amended the requirements for running piston engines, and their components, beyond their time before overhaul (TBO). There was a two year provision made for operators to change to the new procedures. There are two groups of

operators affected by these changes – Part 91 operators (hire or reward), and Part 119/135 operators. Engine escalation procedures allow the running of a piston engine and its components beyond the manufacturer's recommended TBO – subject to approved procedures.

	Before 1 March 07	1 March 07 to 1 March 09	After 1 March 09
Part 91 Non-hire or reward (normally called 'private')	Engines could run beyond hour and calendar TBOs – 'on condition'.	Engines can run beyond hour and calendar TBOs – 'on condition', in accordance with AC43-5 <i>Engine and propellor overhaul and testing</i> .	
Part 91 Hire or reward		Engines can continue to run beyond time and calendar TBO until the end of this period.	For engines to run beyond hour TBO the operator must have an engine escalation procedure included in a maintenance programme under rule 91.607(7), approved by the CAA. Engines now cannot run beyond calendar TBO.
Part 119/135	Engines could not run beyond time or calendar TBO.	For engines to run beyond hour TBO the operator must have an engine escalation procedure included in a maintenance programme under Part 119, approved by the CAA. Fleet specific operator TBOs will be approved in increments. Engines cannot run beyond calendar TBO.	

In the table above where the term 'engines' is used, it refers to piston engines and their components.

Air Cargo Security

The CAA has completed rule development aimed at preventing weapons or explosives from being loaded onto international passenger aircraft as cargo or mail.

An amendment to Part 108 – *Air Operator Security Programme* means that, from 9 April 2009, an air operator must not allow cargo or mail to be loaded onto an international passenger aircraft unless:

- » the cargo or mail is received from a Regulated Air Cargo Agent (RACA), the consignment is accompanied by a declaration of security issued by the RACA, and it is checked by the air operator to ensure that it has not been tampered with, or
- » if the air operator accepts the cargo or mail from a person who is not a RACA, it must be subjected to security controls equivalent to those that would be applied by a RACA.

New Civil Aviation Rule Part 109 – *Regulated Air Cargo Agent – Certification*, establishes the certification and operational requirements for Regulated Air Cargo Agents. Part 109 and consequential amendments to Parts 1, 12, 19, and 108 became effective on 9 October 2008.

These rules will protect passengers and crew on international flights, preserve New Zealand's reputation as a safe point of origin for cargo, and meet New Zealand's ICAO responsibilities. ■



Abbreviation Changes

To bring New Zealand into line with ICAO:

The abbreviation for localiser has changed from LLZ to LOC.

The abbreviation for local, locally, location or located is now LCA.



Two New Rules

Part 173 – Instrument Flight Procedure Service Organisations – Certification and Operation

Part 95 – Instrument Flight Procedures – Registration

Until recently, the design and certification of instrument flight procedures has been carried out by Airways New Zealand under delegation from the Director of Civil Aviation.

The Civil Aviation Act 1990 requires that service provider functions in the civil aviation system be separated from the regulatory authority. These new rules enable procedure design and certification to be separated from the Director's regulatory functions, allowing the CAA to purely provide regulation and safety oversight.

Part 173 provides for the certification of those undertaking the design, maintenance, and promulgation of instrument flight procedures, and requires that procedure design and maintenance be carried out in accordance with ICAO standards and recommended practices.

Parts 173 and 95 and consequential amendments to Parts 1, 12, 71, 91, 93, 121, 125, 135, and 172, came into force on 23 October 2008. Consequential amendments to Part 19 will come into force on 23 October 2009. ■

Certification for Flight Training

A proposed rule change will require all flight training in New Zealand to be carried out by an organisation certificated by the CAA.

The change is the main element of a Notice of Proposed Rule Making (NPRM) to Part 141 *Aviation Training Organisations – Certification*, due to be published by the CAA next month. It affects all flight training and competency checks currently carried out under Part 61 *Pilot Licences and Ratings*, such as private, recreational, commercial and airline transport pilot licences, and some ground training.

Training for certain specialist ratings and airline competency checks would continue to be carried out by organisations certificated under Part 119 *Air Operator – Certification*, Part 137 *Agricultural Aircraft Operations*, or Part 149 *Aviation Recreation Organisation – Certification*.

The proposal brings New Zealand into line with international best practice and the standards prescribed by the International Civil Aviation Organization (ICAO).

Forty-nine New Zealand flight training organisations are already certificated under Part 141, and the proposal would require only minor modifications to their expositions. However, it is estimated a further 85 flying schools and aero clubs would need to go through the certification process from scratch. Currently about 4340 commercial pilots hold instructor ratings, although it is not known how many of these are current. Under the proposal, flight instructors would have to operate under a certificated organisation to provide training toward licences, or to issue ratings and Biennial Flight Reviews.

The proposal has been under consideration for about ten years. Over that time, the CAA has noticed increasing inconsistency in flight training standards, and this has been identified as one factor in several accidents. The lack of certification has limited the CAA's ability to monitor organisations providing training and assessment. Under the proposed changes, the CAA would be better able to address unsatisfactory performance, and to identify areas where training standards need to be improved.

A transition period is proposed that would mean the requirements would not come into full effect until late 2010.

Once published, the NPRM will be available on the CAA web site under "Rules Development". Submissions are invited and will close early next year. ■





SAFETY SEMINARS

Weather to Fly

The highly successful AvKiwi Safety Seminars are back next year and will be dealing with weather and weather decision making.

There will be 25 seminars this summer from February onwards, starting with the Great Plains Fly-in at Ashburton, 6 to 8 February 2009.

Look out for the AvKiwi coming to a town near you.

For more information as dates are confirmed, see the CAA web site, "Seminars and Courses" page.

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Clarifications

Jack Stall

July/August 2008

This article was intended to raise awareness of the Jack Stall phenomenon, and appropriate action to take when it happens. The Jack Stall can happen to many types of helicopter, and we did not intend to infer that a particular helicopter is prone to it. In the example used, the occurrence was a malfunction that resulted in a Jack Stall – the Jack Stall was not the cause of the occurrence. This occurrence is being investigated by the Transport Accident Investigation Commission (TAIC), www.taic.org.nz.

Circling Approaches

September/October 2008

The two height references given as "amsl" on page six should be **agl**, and we apologise for the error.

Charting New Airspace

September/October 2008

In the 3D diagram (page 14), there was an error in one of the heights for G253 Maramarua. It should read **5500** ft to 4500 ft.

Aviation Skills Strategy



The Aviation, Tourism and Travel Training Organisation (ATTTO) is currently in the process of developing an industry endorsed skills strategy to support the New Zealand aviation sector.

The objective of this strategy is to identify the current skill needs of the sector, and use this information to help build the sustainability of the workforce over the next five years.

"The Aviation Skills Strategy will provide a blueprint for how ATTTO will engage with the sector to make sure their skill and training needs are addressed in the short, medium and long term," says Elizabeth Valentine, Chief Executive of ATTTO.

"Eighty percent of the workforce of 2020 is already in work. This means that we need to consider the learning and development needs of our current workforce, while at the same time taking a long term view of the training that the sector will require in the future."

The voice of industry professionals is required to ensure the strategy reflects the real skill and training needs on the ground. ATTTO invites all interested parties to contribute to the consultation process by emailing: bob.feasey@attto.org.nz, by 30 November 2008.

The strategy is due to be completed by 31 December 2008.

CAA Safety DVDs

The CAA Safety Videos, previously available on VHS tapes, have now been digitised, and are available on DVDs (only). For the complete list, see the CAA Web Site, "Safety Info – CAA Safety DVDs".

To Borrow

CAA clients (ie, holders of a New Zealand aviation document) can borrow the DVDs for free – just email info@caa.govt.nz with your client number, postal address, and the title you would like to borrow. Please return them within one week.

Recent Productions

VFR in Controlled Airspace

VFR in Controlled Airspace debunks the idea that flying in controlled airspace is complicated or intimidating. An Air Traffic Controller explains procedures for a flight from Christchurch to Nelson, and two young pilots discuss the issues and fly the route.

Safety Around Helicopters

How you can operate safely around helicopters – with modules on the land, in the bush, at sea, in the mountains, and more.

The Transponder

A student pilot is introduced to the transponder. Secondary surveillance radar is explained, and the transponder signal is shown from the Air Traffic Controller's perspective. The role of the transponder signal in triggering collision avoidance systems is demonstrated.

Note: The Aircare DVDs, *Managing Risk in Aviation*, and *An Aviator's Guide to Good Decision Making*, are available from the Aviation Industry Association (AIA). Tel: 0-4-472 2707, Email: admin1@aia.org.nz.

To Buy

You can buy any of the CAA Safety DVDs from:

Video New Zealand
42 Cypress Drive
Maungaraki
Lower Hutt 5010
New Zealand

Orders must be paid for by cheque. No credit cards are accepted. Each DVD is \$35, plus \$10 postage and packing for each order (all prices include GST). For bulk orders, or overseas postal costs, please contact Video New Zealand: Email: viv@videonz.co.nz.



How to Get Aviation Publications

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).

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).

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".

Planning an Aviation Event?

If you are planning an event, large or small, such as an airshow, air race, rally, or major competition, the details should be published in an *AIP Supplement* to warn pilots of the activity.

The published cut-off dates for the AIP are listed below, but you must advise the CAA **at least one week** before those dates, to allow for inquiries and processing. Note that, even if you have applied to the CAA for an aviation event authorisation, this does not automatically generate an *AIP Supplement* or airspace request.

Email the CAA, aero@caa.govt.nz. Further information on aviation events is in AC91-1.

Effective Date	Cut-off Date With Graphic	Cut-off Date Without Graphic
9 Apr 09	26 Jan 09	2 Feb 09
7 May 09	23 Feb 09	2 Mar 09
4 Jun 09	23 Mar 09	30 Mar 09

OCCURRENCE BRIEFS

LESSONS FOR SAFER AVIATION

The content of *Occurrence Briefs* comprises notified aircraft accidents, GA defect incidents, and sometimes selected foreign occurrences, which we believe will most benefit operators and engineers. Individual accident briefs, and GA defect incidents are available on CAA's web site. Accident briefs on the web comprise those for accidents that have been investigated since 1 January 1996 and have been published in *Occurrence Briefs*, plus any that have been recently released on the web but not yet published. Defects on the web comprise most of those that have been investigated since 1 January 2002, including all that have been published in *Occurrence Briefs*.

ACCIDENTS

The pilot-in-command of an aircraft involved in an accident is required by the Civil Aviation Act to notify the Civil Aviation Authority "as soon as practicable", unless prevented by injury, in which case responsibility falls on the aircraft operator. The CAA has a dedicated telephone number 0508 ACCIDENT (0508 222 433) for this purpose. Follow-up details of accidents should normally be submitted on Form CA005 to the CAA Safety Investigation Unit.

Some accidents are investigated by the Transport Accident Investigation Commission (TAIC), and it is the CAA's responsibility to notify TAIC of all accidents. The reports that follow are the results of either CAA or TAIC investigations. Full TAIC accident reports are available on the TAIC web site, www.taic.org.nz.

ZK-EMC, NZ Aerospace FU24-950, 10 Jun 07 at 15:22, Raupunga. 1 POB, injuries nil, aircraft destroyed. Nature of flight, agricultural. Pilot CAA licence CPL (Aeroplane), age 63 yrs, flying hours 18400 total, 3700 on type, 220 in last 90 days.

At the end of a topdressing run at approximately 100 feet above the ground a loud bang was heard. This was followed by a severe vibration and loss of engine power. A forced landing was made in very rough country, resulting in severe damage to the aircraft but no injury to the pilot.

Initial investigation revealed the engine could be turned over with no abnormal noises, and the main pressure filter was clean. The propeller gave indications of some power on when the forced landing was made. One of the three blades could be rotated in the hub, indicating some internal failure, so the propeller was stripped down. The pitch change knob on one blade had failed on the large diameter at the butt end of the blade. The failed section on the blade indicated it had failed in flight and not as a result of ground contact.

Examination of the propeller logbook revealed it had been overhauled during July 2002 with three new propeller blades being fitted. The propeller blades were not shot-peened in the pitch change knob area. The propeller was held in storage and fitted in February 2005. A calendar inspection and rectification was carried out during March 2007.

The failed propeller blade was sent to a metallurgist to determine the cause of the failure. The report concluded that the failure occurred due to fatigue cracking and final overload, caused by high stress levels, probably induced by the load applied in pitch adjustment. Other propeller overhaul organisations contacted confirmed they have seen similar failures and consider the pitch change knob on these blades not strong enough. The manufacturer has introduced shot-peening in the area of the pitch knob to be carried out at overhaul. The CAA has now amended Airworthiness Directive DCA/HARTZ/146B to require all non-shot-peened blades to be removed from service within the next 100 hours time in service.

CAA Occurrence Ref 07/2080

ZK-NPH, Cessna A152, 22 Dec 07 at 17:05, New Plymouth Ad. 1 POB, injuries nil, damage substantial. Nature of flight, training solo. Pilot CAA licence nil, age 18 yrs, flying hours 14 total, 14 on type, 14 in last 90 days.

The pilot on approach, crossed white markers nose down, and tried to fly level over them. On bouncing for the third time "it went straight nose down and the nose broke."

CAA Occurrence Ref 07/4574

ZK-HWG, Bell 206B, 11 Jan 08 at 12:50, Lichfield. 1 POB, injuries nil, aircraft destroyed. Nature of flight, agricultural. Pilot CAA licence CPL (Helicopter), age 39 yrs, flying hours 6798 total, 2932 on type, 295 in last 90 days.

The helicopter was engaged on agricultural operations, when engine failure occurred during a turn. The pilot carried out an autorotation but had to land on a hill slope. During the subsequent landing, the tailboom separated and the machine came to rest on its side. The pilot was not injured.

CAA Occurrence Ref 08/73

ZK-LTY, Pacific Aerospace Cresco 08-600, 19 Jan 08 at 11:41, Taumarunui. 1 POB, injuries nil, damage substantial. Nature of flight, agricultural. Pilot CAA licence CPL (Aeroplane), age 55 yrs, flying hours 12982 total, 4210 on type, 282 in last 90 days.

The aircraft did not achieve climb after takeoff, possibly because of a tail-wind component. The aircraft stalled and contacted the ground 130 metres from the airstrip, suffering extensive damage to the port wing and controls. The aircraft was then flown 10 NM to an airfield and landed without further incident. The engineering report indicates the aircraft was extensively damaged. It was grounded, dismantled and freighted to a repair base.

CAA Occurrence Ref 08/254

The reports and recommendations that follow are based on details submitted mainly by Licensed Aircraft Maintenance Engineers on behalf of operators, in accordance with Civil Aviation Rules, Part 12 *Accidents, Incidents, and Statistics*. They relate only to aircraft of maximum certificated takeoff weight of 9000 lb (4082 kg) or less. These and more reports are available on the CAA web site. Details of defects should normally be submitted on Form CA005 or 005D to the CAA Safety Investigation Unit.

The CAA Occurrence Number at the end of each report should be quoted in any enquiries.

Key to abbreviations:

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

Alpha R2160

Oil Pressure Gauge & Transducer

While mid downwind the oil pressure light came on. The crew made a PAN call and landed safely. During taxi the oil pressure was observed to be at the lowest position and the oil temperature rose. A subsequent engine ground run did not identify any abnormal oil pressure readings. The aircraft has had a history of high and low oil pressure readings. The oil line from the transducer was flushed, and the oil pressure gauge and transducer were replaced. The engine was ground run, and the aircraft was returned to service. TTIS 443.7 hours.

ATA 7930

CAA Occurrence Ref 07/2290

Alpha R2160

Precision Airmotive MA4SPA Carburettor, P/N 10-4910-1

At the end of the landing roll, with throttle at idle, the engine cuts out and stops. The engine restarts, but at shutdown with mixture at ICO the engine runs on. The engine was shut down using the ignition switch. Over a two-day period this happened two to three times. Carburettor removed and inspected, float found to be full of fuel. New foam float assembly P/N 30-864 fitted with reference to Precision Airmotive Service Letter SIL MS-11. There have been a number of similar occurrences where the Advanced Polymer Float has leaked and become full of fuel, requiring replacement with the new style foam float. The CAA has now issued AD DCA/MA/15A, Advanced Polymer Floats – inspection and replacement. TTIS 76 hours.

ATA 7320

CAA Occurrence Ref 08/723

Beech 76

Wiring harness

Emergency declared due to MLG not down indication, but aircraft landed safely. Wiring to micro switch found defective. Wiring repaired and aircraft returned to service. TSI 92 hours, TTIS 11120 hours.

ATA 3260

CAA Occurrence Ref 07/2703

Cessna 172N

Marvel Schebler MA3A Carburettor

At the top of descent, the pilot tried to reduce the engine rpm, but there was no apparent change in the engine speed. The aircraft was positioned for a glide approach, and the mixture was cut to stop the engine. Investigation found that the pump discharge tube (accelerator tube) on the carburettor had come loose and jammed the throttle butterfly. The pump discharge tube appears to vibrate loose after a period of time, and eventually falls out. The problem is known to exist with Marvel Schebler carburettors Part Nos MA3A, MA3PA, MA3SPA, and MA4SPA. Airworthiness instructions are being developed to prevent the fault from recurring. TTIS 1326 hours.

ATA 7320

CAA Occurrence Ref 07/1707

Cessna A185F

Teledyne Continental Motors IO-520-D Crankshaft Gear

The pilot reported a rough-running engine. An engine strip discovered a non-metallic foreign material the size of a small stone in the sump. The source of the material could not be established. The material had marks consistent with those created by contact with gear teeth. Two teeth were found to be missing from the crankshaft gear, and the starter shaft and camshaft gear were also found damaged. TTIS 1513.7 hours.

ATA 7200

CAA Occurrence Ref 07/938

Cessna U206F

Cessna U206F Switch, P/N S1846-1-3

During the takeoff roll, a burning smell and smoke was detected coming from the landing light switch on the panel. The takeoff was safely aborted. The switches were turned off, the cabin was ventilated, and the smoke stopped. On investigation it was found that the landing light switch had overheated and melted, and had also caused some minor heat damage to the associated wiring. The failure was put down to the age and frequent usage of the switch. The switch was replaced and as a precaution the wiring for the landing lights was also replaced. CAA note that there have been similar reported failures of landing light switches in Cessna aircraft.

ATA 3340

CAA Occurrence Ref 08/1657

Cessna U206F

Continental IO-520-F Starter Adaptor, P/N 643259

The starter was slipping and would not crank the engine. Investigation found the crankshaft gear bolt lockwire broken and noted that the starter adaptor spring had moved down to contact the bolts. This was attributed to a broken retaining tang on the spring. The broken tang was found in the engine sump. The Maintenance Organisation recommends that at the first sign of the starter slipping, the adaptor be removed for inspection. The starter adaptor was repaired with an oversize spring, and the bolts were relocked. TTIS 761.3 hours.

ATA 8000

CAA Occurrence Ref 08/774

KHI Kawasaki-Hughes 369D

KHI-Kawasaki-Hughes 369 Governor

The engine governor became unstable at higher power settings. The governor was replaced with a new item. TTIS 1892.6 hours.

ATA 7200

CAA Occurrence Ref 08/985

NZ Aerospace FU24-954

Turbine Conversions Ltd Engine Mount, P/N TCL-02-010-2

During scheduled maintenance, a 5-mm crack was discovered propagating out from the upper left bolt hole in the engine mount.

ATA 7100

CAA Occurrence Ref 07/2577

Piper PA-23-250

Cleveland 40-131 Wheel Hub, P/N 162-00700

The main landing gear outboard wheel hub was found cracked during a scheduled inspection. The hub was replaced. TSO 48 cycles.

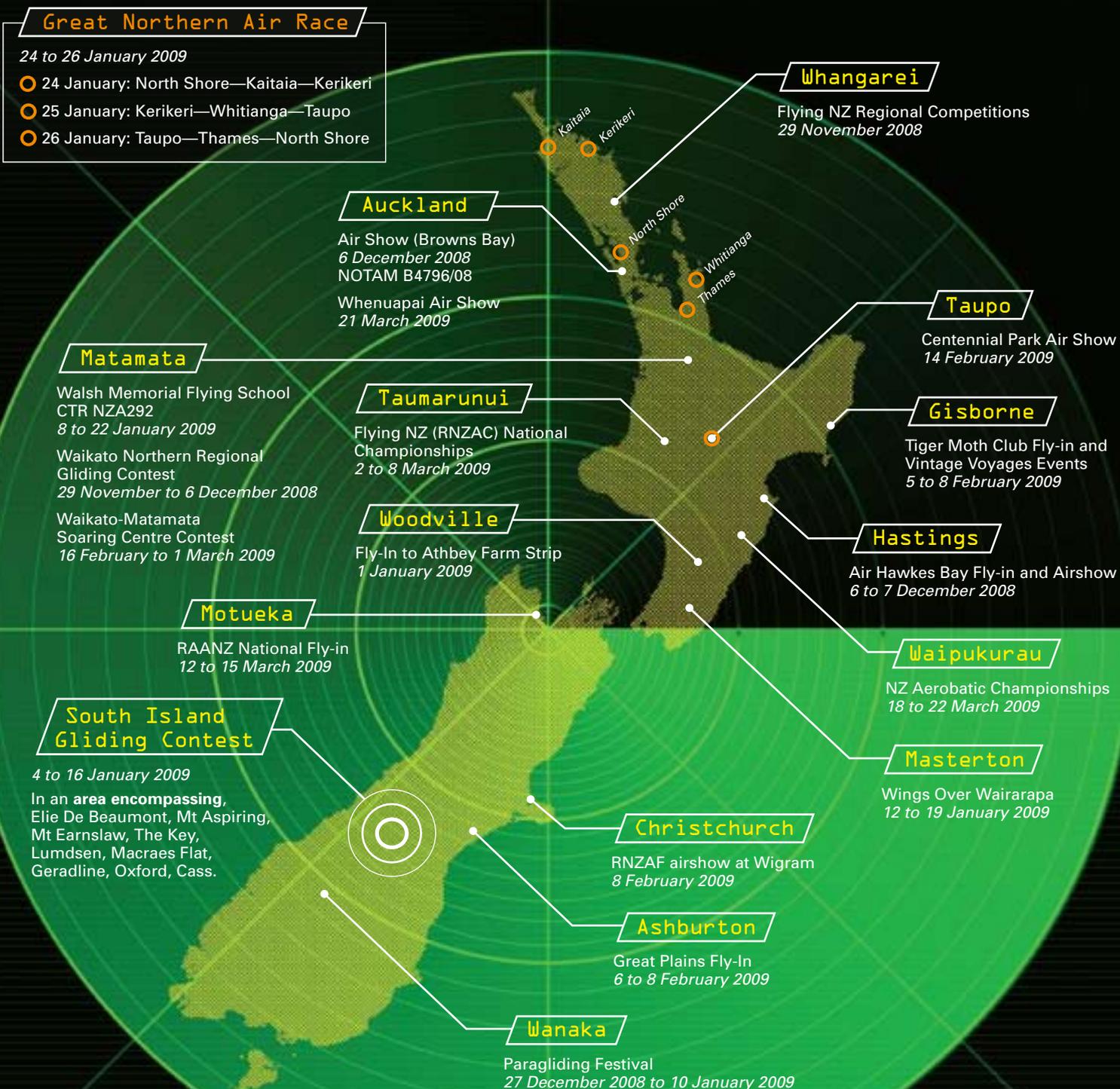
ATA 3240

CAA Occurrence Ref 07/1955

Summer Traffic Busy Spots

Don't inadvertently fly into an aviation event – check your *AIP New Zealand Supplements* for planned events near you. If you don't subscribe personally, you can download the *Supplements* for free from www.aip.net.nz.

The map shows the known flying events between December 2008 and mid-March 2009.



Keep these events on your radar