January / February 2012

POINTING TO SAFER AVIATION

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Warbirds Over Wanaka

To EFIS or Not to EFIS

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Electronic Flight Bags

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

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Cover: Head to head with a P51D Mustang at Wanaka.
Photo courtesy of Gavin Conroy, www.capphotography.ifp3.com.

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Photo courtesy of Bevan Dewes.

Warbirds Over Wanaka

Attending the airshow at Wanaka this Easter can be an aviator's dream come true. The trip could become a nightmare, however, if you attempt to fly in without doing your homework.

The stand-alone *AIP Supplement* for Warbirds Over Wanaka 50/12 must be read and understood if you plan to land at Wanaka. The trip 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.

Before leaving home, think carefully about what routes you feel comfortable taking – given your flying experience and the weather conditions on the day. The terrain surrounding Wanaka makes it a challenging destination in some wind conditions. You can't get there without flying over or through the mountains, and changeable alpine weather can throw low cloud, poor visibility, rain, updraughts, downdraughts, and turbulence at you.

The basin that Wanaka is in protects it from most wind directions. This means that the weather in Wanaka itself can look okay for VFR operations, even when conditions en route to Wanaka are not suitable for VFR. Don't get caught out by this – study the area forecasts carefully, because the weather varies considerably throughout the South Island.

In westerly conditions, Wanaka is most accessible via eastern routes, but expect mechanical turbulence in strong westerly winds. In easterly conditions, low-lying stratus can make easterly routes more difficult, while western routes are generally clear, with Wanaka accessible from Haast Pass.

The prevailing wind at Wanaka is a westerly or south westerly, making Runway 29 the most common runway in use. In south-westerly winds, be alert for wind shear on short final (below 500 feet AGL).

AIP Supplement 50/12 requires all aircraft to carry 30 minutes extra holding fuel, in addition to legal reserves, to enable diversions or holding due to traffic or weather.

In order to manage the large number of aircraft movements over the Easter weekend, a temporary restricted area (NZR998) and a coincident temporary control zone (Wanaka CTR/D) will cover all airspace within a 5 NM radius of Wanaka Aerodrome, from the surface to 7500 feet amsl.

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When Can I Fly In?

You cannot fly in during official practice times, or when the airshow is in progress. Arrivals and departures are only permitted outside these times. An aerodrome control service will be provided by Wanaka Tower for varying periods of time before, after, and in-between practice times on Thursday and Friday, before and after the airshow on Saturday and Sunday. Outside Wanaka Tower's hours of service, unattended aerodrome procedures apply.

To help you figure out when you can and can't fly in, and what procedures apply at the time, see the next page for a visual representation of the times listed in the *AIP Supplement*.

Procedures

There are different arrival and departure procedures for fixed wing aircraft depending on whether you are flying IFR or VFR, in a light aircraft or a multi-engine/high performance aircraft, and whether Runway 11 or 29 is in use. These can be found in the *AIP Supplement*, along with specific arrival and departure procedures for helicopters.

To help you know what to expect, and what Wanaka Tower expect of you, here is a summary of information found throughout the *Supplement*. You must read the entire 'supp' cover to cover, rather then just referring to the instructions and diagram on the arrival plate – because everything you need to know cannot fit on that one page.

VFR Light Aircraft – Tips for a Safe Arrival

- Time your flight to arrive during the designated arrival times.
- Before reaching the Wanaka area, listen to the ATIS (127.6 MHz) for the runway in use. Outside ATIS coverage, contact Christchurch Information or an adjacent ATS unit.
- Turn your landing and anti-collision lights on.
- Arrive overhead Tarras at 3500 feet or above and report your callsign, aircraft type, position and altitude. Refer to the *AIP Supplement*.
- Fly the published arrival procedure for the runway in use at 110 knots (or your lowest safe airspeed), following behind the aircraft ahead of you.
- Overhead Luggate, report your call sign and position. Descend to circuit height (2200 feet).
- Report again on base leg, and advise Wanaka Tower if either the paved runway or the grass runway is unsuitable for you to land on.
- Wanaka Tower will issue you with a landing clearance.
- After landing, terminate your VFR flight plan (if you haven't already done so). Call the National Briefing Office on 0900 626 75 from a mobile phone, or 0800 626 756 from a landline.

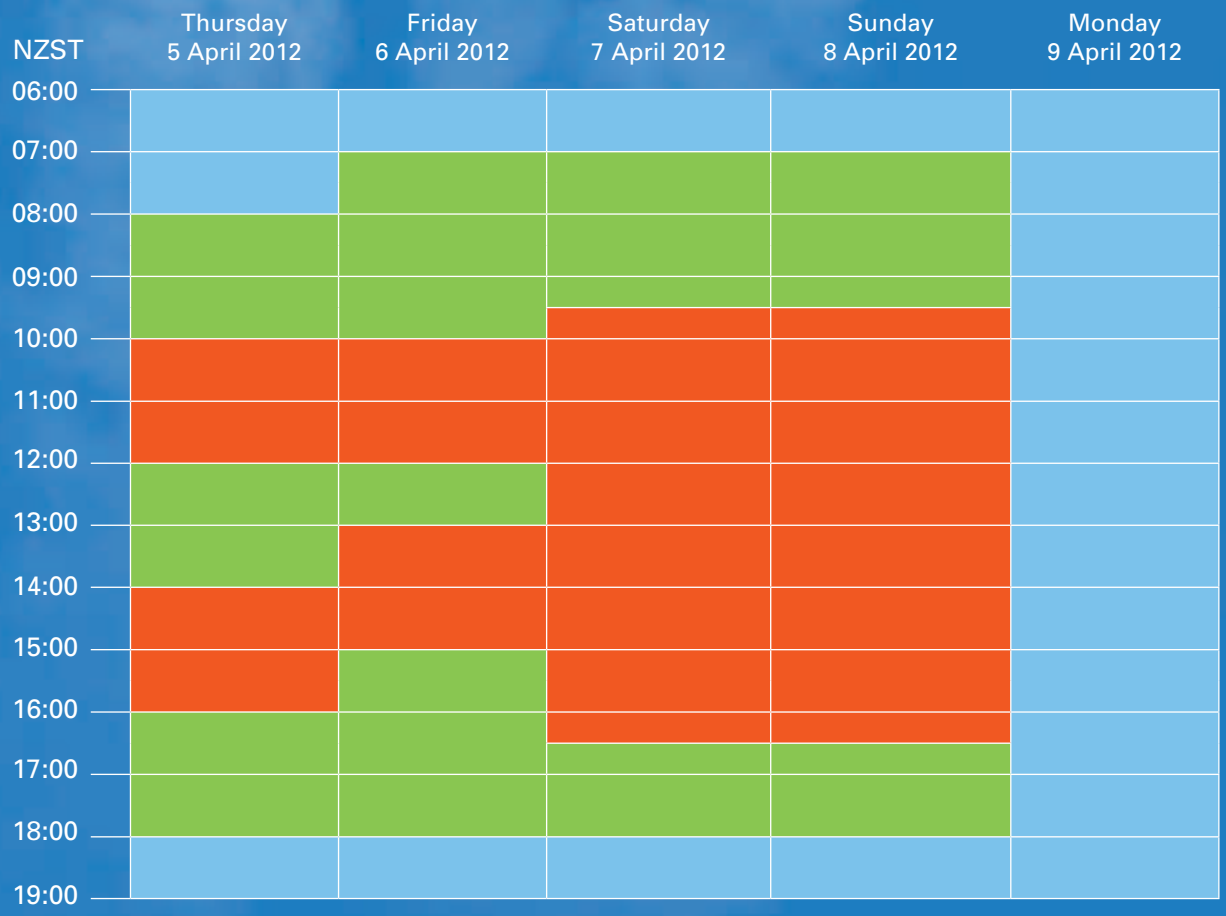
Summary

The key to a safe and fun trip is careful planning. Study all possible routes and read *AIP Supplement* 50/12 thoroughly. Brush up your mountain flying skills, and make contingency plans so that you don't succumb to 'get-there-itis'. On the day, make sure you are fully briefed on weather and NOTAMs, file a flight plan and remember to terminate it. Take decisive action en route, and enjoy flying in this spectacular environment. See you there. ■

Photo courtesy of Chris Nielsen.

Arrival and Departure Times at Wanaka

	Airspace closed for practice and airshow
	Wanaka Tower on watch
	Unattended aerodrome procedures apply



To EFIS or Not To EFIS

Don't bet your life on Electronic Flight Instrument Systems (EFIS) to keep you out of trouble when you're flying VFR. Be alert, maintain your situational awareness and observe the rules, otherwise you may have an unexpected terra firma encounter. Keep your eyes outside the cockpit to ensure that you stay visual and maintain a safe distance from terrain and obstacles.

How Not To EFIS

The following summary of a recent CAA accident investigation report highlights the potential dangers of using EFIS during VFR cross country flights.

In April 2011, ZK-SML, a microlight aeroplane (Dyn' Aero MCR 01 Club), was on a VFR flight from North Shore to Ashburton, when it didn't arrive as expected. Two days later the aircraft wreckage was located at 3600 feet on the slopes of Mount Duppa near Nelson. The pilot, the sole occupant, had not survived.

At the time of the accident, Mount Duppa was obscured by cloud. The general weather and visibility in the area were poor, with widespread low cloud and drizzle.

The aircraft was equipped with a state-of-the-art EFIS system and single display screen capable of displaying Global Positioning System (GPS) moving map, synthetic terrain and terrain proximity warnings. The EFIS had a range of moving map features, so the pilot had electronically created and then downloaded his intended route information to the EFIS. The EFIS was not certified, and could therefore only be used as an aid to the primary navigation methods of using an up to date map and accurate compass.

Subsequent tests showed that the EFIS terrain data base for the moving map display in ZK-SML contained some serious spot height and terrain display inaccuracies.

The available CAA accident investigation information suggests that because of the high level of sophistication of the EFIS information displayed (albeit inaccurately) to the pilot that he probably placed too much reliance on that information, instead of using basic VFR navigation skills and applying the proper VFR meteorological minima for the flight. Because the database errors were unknown by the pilot, he probably wrongly thought, in the poor weather conditions and reduced visibility, that he was sufficiently clear of the terrain ahead. Because of the errors, he would have received no warning telling him that he would not clear the terrain.

What is EFIS?

EFIS is becoming increasingly common in all types of aircraft. Gone, or going, are the 'steam-driven' analogue instruments.

Ron Doggett, CAA Airworthiness Engineer (Avionics), says the components of a typical installation include sensors, displays, controls and data processors. A basic EFIS might have some or all these facilities in the one unit.

"EFIS can have high levels of sophistication and present navigation, synthetic terrain and flight instrument display information to the pilot.

"EFIS can come in all shapes and sizes. They are glass cockpit avionics display systems that can integrate all flight parameters into one optimized instrument, where the display technology is electronic rather than electromechanical.

"Whereas a wide-body commercial aircraft may have six or more EFIS displays, a light aircraft might be equipped with only one display unit, on which are displayed flight and navigation data.

"For IFR flight, the equipment has to be Technical Standard Order (TSO) approved. A TSO is a minimum performance standard for equipment used on aircraft," Ron advises.

Rex Kenny, CAA Manager Sport and Recreation, says EFIS are becoming increasingly more sophisticated and capable, and are relatively inexpensive.

"They have been commonplace in commercial passenger aircraft for some time now, but because of their cost and sophistication they are becoming increasingly popular in general aviation and are being found in all types of aircraft, including microlights," Rex says.

Some Advantages

Advances in computing power and reductions in the cost of high quality liquid-crystal displays and navigational sensors such as GPS, have made EFIS more affordable and brought it to general aviation aircraft.

"EFIS offers versatility by avoiding some of the physical limitations of traditional instruments. For example, the same display that shows a course deviation indicator can be switched to show the planned track provided by an area navigation or flight management system. If required, a weather radar picture can then be superimposed on the displayed route. The wide use of colour offers obvious advantages. Software offers flexibility for system integration and configuration, and minimizes the costs when new requirements are introduced," Ron advises.

Be Safe

For reliable EFIS information, the flight instrument systems require monitoring capabilities to validate the input data, do data comparison checks, and detect any failures with the display monitoring.

"Ensure that your EFIS has the latest software updates. Software updates quite often are to correct latent defects that are not readily apparent to the pilot.

"For operational data, such as navigation and terrain databases, know the heritage of the data so that you can have confidence in it. If you find significant errors with your navigation or terrain data, then advise the supplier and file a Form CA005 Occurrence Report," Ron says.

Remember, by filing a CA005 report, the defect information will be recorded and it will ensure that action is taken to rectify the problem.

Be Aware

Even if the EFIS navigation display information is accurate, the danger for VFR pilots is that they can be tempted to divert a lot of their attention inside the cockpit and not maintain a good lookout outside the cockpit. Consequently, their situational awareness may be lost, and pilots run the risk of continuing on into areas of bad weather, or worse, colliding with an obstacle or another aircraft.

"Fundamental to safe flying is the maintenance of a clear mental picture of the surrounding terrain and other obstacles, including the location of other aircraft," Rex cautions.

"An identified human factors issue with EFIS in general aviation is that they can lead to pilot over-confidence; then, when it all starts to go wrong, it unravels very quickly. Remember that VFR means you stay visual irrespective of how good your equipment is," Ron adds.

Further Reading

AC 91-18 *Aircraft Software Configuration Management.*

United States Federal Aviation Administration AC 25-11A *Electronic Flight Deck Displays.* ■

Near Collision Evokes Key Safety Reminders

In May 2010, over New Plymouth aerodrome (a controlled aerodrome), a collision was narrowly avoided between a descending light aeroplane doing a standard join for a left-hand circuit on grass Runway 14, and a light helicopter using the same runway but in a right-hand circuit.

Both aircraft were on training flights, and each had a student and an instructor on board.

In November 2011, the Transport Accident Investigation Commission's (TAIC) report (Aviation Inquiry 10-005) on the incident was released. The report includes vital safety reminders to pilots and air traffic controllers, and recommendations to improve safety.

At the direction of the aerodrome controller, the helicopter pilot flew right-hand circuits, instead of the usual left-hand circuit for the runway, to allow for a passenger aircraft that was approaching to land (this instruction was valid for this type of airspace).

A short time later, the pilot of the aeroplane requested a practice overhead rejoin procedure. During that procedure an aircraft is manoeuvred overhead an aerodrome at a higher altitude than the circuit traffic. This enables the pilot to assess the traffic, wind, and aerodrome conditions before deciding to descend to the same height and direction as the other aircraft in the circuit, continue to hold until it is safe to integrate into the circuit, or choose not to join the circuit and leave the pattern.

The aerodrome controller confirmed with the aeroplane pilots that they had the helicopter, the only other circuit traffic, in sight before authorising the procedure. The controller was aware that the aeroplane, flying a standard left-hand circuit pattern, could conflict with the helicopter doing a right-hand circuit. The controller however, minimised the risk by ensuring the pilots had the helicopter in sight and that they were aware it was doing a right-hand circuit.

Although the controller had not specifically stated it, the traffic information was intended to have alerted the aeroplane pilots that their descent on the non-traffic side would pass through the altitude and downwind leg of the helicopter circuit.

Photo: Mock-up only.

Each pilot was aware of the other's radio transmissions. As the flights continued however, the pilots on board the aeroplane lost sight of the helicopter, but they did not advise each other or the controller.

The aeroplane was in descent directly in front of the helicopter, which was in a climbing turn, when the helicopter instructor suddenly saw the aeroplane close above and closing. He immediately took control and did a steep descent, narrowly avoiding the aeroplane and preventing a collision.

See and Avoid

This incident occurred at a controlled aerodrome in Class D airspace, where separation between VFR aircraft was not required to be applied. Although under the direction of the aerodrome controller, each pilot was responsible for maintaining visual reference with the other aircraft and for avoiding it.

In this circumstance, reducing the risk of collision depended on the pilots applying the see-and-avoid principle, the aeroplane pilots especially keeping the helicopter in sight, and that the pilots were aware of the limitations of the controller's responsibilities to VFR aircraft in Class D airspace.

The TAIC report referred to a Bureau of Air Safety Investigation study, *Limitations of the See-and-Avoid Principle,* which examined how the effectiveness of see-and-avoid can be reduced by many factors. They include those that affect:

- Looking for other traffic
- Visual searching
- The field of view
- Target characteristics.

For further explanation, readers should refer to the TAIC report.

The investigation showed that some of the circumstances were similar to those of the collision between a light aeroplane and helicopter at Paraparaumu aerodrome in 2008, following which TAIC made a number of safety recommendations.

Key Safety Messages

The Director of Civil Aviation, Steve Douglas, says the event highlighted key safety messages for pilots.

"Even when pilots have been issued a clearance by an air traffic controller, they are responsible for their own separation. Pilots do that by keeping a good lookout, and by listening to radio calls to build a mental picture of where other aircraft are.

"Air traffic controllers can provide a great deal of help. If you have lost sight of other traffic, speak up. A couple of radio calls can quickly resolve a situation before it gets dangerous.

"This report raises matters for other parts of the aviation system. The Airways Corporation is working with the CAA to modify its procedures, and together we will review the relevant rules and guidance material to see whether improvements to clarity and consistency can be made.

"Aerodrome operators also shoulder responsibility to ensure risks associated with specific local procedures are continually monitored, and mitigating steps are understood and practised by all users.

"An event such as this in which no one was injured, but from which several strong safety messages can be gleaned presents a valuable opportunity for the CAA to continue its work with the aviation community for the benefit of the public," the Director said.

Some Lessons

The TAIC report on the incident included these eight key lessons, which the CAA endorses:

- The aviation community must take concerted and consistent action to reduce the collision risk associated with simultaneous opposed circuits at aerodromes.
- Controllers must be alert to situations that warrant the issuing of mutual traffic information.
- To minimise the risk of collision, pilots must combine an effective lookout with an attentive radio listen-out, especially in the vicinity of aerodromes.
- Pilots should advise, by broadcast if appropriate, when relevant traffic is no longer in sight and take any necessary action to ensure the safety of their flights.
- The see-and-avoid principle continues to have relevance, provided pilots and controllers counter its well-known limitations by the appropriate sharing of traffic information.
- Civil Aviation Rules and Aeronautical Information Publications must be written carefully and explained clearly to students to avoid ambiguity.
- Pilots must understand that, under most circumstances, ATC does not provide separation between VFR traffic in Class C and Class D airspace, even when clearances are issued.
- Aerodrome operators have a responsibility to manage their operational risks. A useful tool for risk management is an effective user group that includes all tenants and regular aircraft operators at the aerodrome.

Read On

"Separation Anxiety", May/June 2010 *Vector.* On the CAA web site www.caa.govt.nz under 'Publications'.

CAA Flight Training Review also available on the CAA web site. ■

Senior Persons

Senior Persons are key personnel in certificated aviation organisations, those who can properly and effectively manage all the functions associated with an operation, taking into account the organisation's size and range of operations.

They are not necessarily senior in years but experienced, skilled, and knowledgeable people; those who can help drive the safety culture of an organisation and manage its safety.

Their Importance

Mark Hughes, CAA General Manager Airlines, emphasises the importance of the senior person role.

"The importance of senior persons in an organisation cannot be understated. By their actions and words, the Chief Executive and the senior management team set the boundaries of acceptable performance for the organisation's personnel. Adherence to policies and procedures, open sharing of information and concerns, and safe practices are elements which managers need to emphasise and support. Managers must understand human factors, and find the right balance between managing human error and holding individuals to account. Management has a responsibility to create a positive organisational culture to enhance safety performance and prevent accidents," Mark advises.

Who They Are

They are safety critical members in an aviation organisation, those who will exercise an appropriate level of control, direction and responsibility to ensure the continued safety and effective running of the varying operations.

In order to hold an air operator certificate, an organisation must engage the services of certain people who will be named as Senior Persons, and who will report to the Chief Executive.

Certification

An essential part of the air operator certification process is the nomination (and CAA acceptance) of suitable senior persons in terms of rule 119.51 or 119.101, as applicable. Without suitable senior persons in place, an organisation cannot be certificated, or continue to carry out its planned activities.

When nominating Senior Persons, organisations need to consider a candidate's experience and skills to perform the role, their qualifications, their attitude toward safety and compliance, and that no barriers or behavioural problems exist that could hinder a candidate in performing their role. Candidates also need sufficient time, resource and authority to fulfil their responsibilities.

"Organisations have a strong responsibility to put the right people forward, those who have the right material to be a Senior Person, which CAA will test," Mark says.

The Civil Aviation Act 1990 is the primary legislation, and a good understanding of its requirements is essential. Some of the fundamental requirements for the nomination of Senior Persons are found in section 9, *Grant or Renewal of aviation document*, and section 10, *Criteria for fit and proper person test*. Further, section 12 contains the general requirements for participants in the civil aviation system.

What They Do

The rules require Senior Persons to be responsible for ensuring that the activities of the organisation can be financed and carried out in accordance with the rules. This includes such things as the safe and efficient management of operations, training and competency, control and direction, an organisation's management system, conducting occurrence investigations, and ensuring the organisation complies with its procedures manuals.

Preparation

Good preparation for prospective candidates is really important. For example, a comprehensive understanding of the organisation's exposition and the applicable Rules is essential.

A follow-up *Vector* article will contain further information on how to prepare to be a Senior Person.

Read On

Part 119 *Air Operator - Certification,* see the various sections on personnel requirements.

AC 119-1 *Air Operator Certification.*

"Senior Persons", November/December 2006 *Vector.* Refer to www.caa.govt.nz under 'Publications'.

ICAO document 9859 *Safety Management Manual.* Refer to www.icao.int ■

About Waiheke Island

Be careful out there this summer.

Those long hazy days of summer are finally here, bringing increased flying activity in, out and around Waiheke Island.

For the unwary or low-time pilot, Waiheke aerodrome can present some interesting challenges because of a few unusual features, especially when landing to the south on Runway 17, or departing to the north on Runway 35, including its runway length, position, and traffic congestion.

Waiheke (NZKE) is a non-certificated aerodrome with an elevation of 445 feet. The airfield, positioned on a ridge about halfway between Onetangi and Woodside Bay, and two miles east of Ostend, has two grass runways, 17 and 35, with 655 metres available for landing and takeoff.

Waiheke lies within the Hauraki Gulf Common Frequency Zone (CFZ). When operating within the CFZ, because of the traffic densities and the intrinsic risk of collision, pilots are encouraged to maintain a continuous listening watch and to make regular position reports on 120.4 MHz, 'Hauraki Traffic'. While this is not mandatory, good airmanship demands that CFZs should be treated in the same way as mandatory broadcast zones, because of the high traffic flow.

Operations

All aircraft operating in and out of Waiheke must comply with the published arrival and departure procedures, including the Auckland City Council requirements.

Be careful, aircraft are not to overfly the residential area to the north of the aerodrome. Overhead rejoins should be avoided, and touch-and-go landings are prohibited. The *AIPNZ* Vol 4 also states that the aerodrome is only available for general use with permission and a briefing from the operator.

Be warned that parachuting operations can also take place anytime during daylight hours, adding to the congestion.

Features

One of the unusual features associated with Waiheke is the offset final approach track for Runway 17. When landing on Runway 17, a 45-degree offset base leg and final approach track must be flown to ensure that aircraft do not overfly the residential area that starts approximately 300 metres to the north, on the extended runway centreline. When departing on Runway 35, aircraft must make a 45-degree right turn as soon as practicable and when safe to do so, to avoid overflying the houses.

Remember that Trig Hill Road runs along the ridge from the aerodrome to the north, at about the same elevation, and that buildings on this road start at approximately 300 metres from the aerodrome boundary.

Severe turbulence in easterly winds on short final for Runway 35, and severe windshear during strong south-west winds on short final for runway 17, are other characteristics that can potentially be encountered when operating at Waiheke.

Help

Don't become a statistic. Seek professional assistance if you have any doubts, or if you need to boost your skill levels and confidence before operating at Waiheke.

Read On

In, Out and Around Auckland GAP booklet, www.caa.govt.nz, see Publications or email info@caa.govt.nz for a free copy.

AIP New Zealand, Vol 4, AD. Refer to the following link: www.aip.net.nz/pdf/NZKE.pdf

Visual Navigation Chart *Auckland Terminal D1.*

AIP Supplements and NOTAMS. ■

Electronic **Flight Bags**

The development of iPads™ and small laptop or tablet computers has created the potential for Electronic Flight Bags (EFB) to be used across virtually all aviation sectors. Just as paper documents require routine updating and management, so do EFBs.

To ensure that EFBs do not create safety risks, the CAA has published an Advisory Circular giving acceptable means of compliance, and guidance material on how EFBs should be managed and used.

EFB hardware can range from stand-alone portable devices to fully installed and integrated systems.

In its simplest form, an EFB can be used to carry documents in electronic format so that they are more readily available to crew. In this case, the EFB does not replace any of the operational paper documents that must be carried on the aircraft.

Going one step further, EFBs can be authorised to be the repository for operational documents required to be carried on the aircraft – in place of the paper documents. When an EFB replaces aeronautical information required by the Civil Aviation Rules, then a secondary or backup EFB must be available to the pilot and capable of displaying the information by independent means. If the EFBs do not have battery backup, at least one EFB is required to be connected to an aircraft power bus.

An EFB can also be used to compute or look up data such as weight and balance, or do performance calculations. These more advanced applications must be validated to ensure that the data they provide is correct and in accordance with the aircraft Flight Manual.

EFB systems must be functionally equivalent to the paper reference material they are replacing, and the pilot must verify that all information used for navigation, aircraft operation, or performance planning, is up to date and valid.

Under IFR, rule 91.7 restricts the use of portable electronic devices (PED) to the cruise phase of flight at or above, 10,000 feet – this requirement does not apply to aircraft operating under VFR. Only EFBs authorised by the Director can be used under IFR in all phases of flight. In order to gain authorisation, the EFB must have been tested and determined not to cause interference to aircraft systems. For aircraft operating under IFR, any EFB transmitting function must be disabled in order to comply with rule 91.7 (a).

Advisory Circular AC91-20 *Guidelines for the Approval and Use of Electronic Flight Bag Devices* is based on international best practice, and draws on material published by the major regulatory agencies around the world. The AC provides the means by which EFBs can be used in New Zealand for operations under Civil Aviation Rules, Parts 121, 125, and 135, and details the approval process.

Part 91 Operations

Part 91 operations do not require any specific authorisation to use an EFB, provided the EFB does not replace any document, system or equipment required by the Civil Aviation Rules, and the guidelines in AC91-20 are followed. The PED requirements in rule 91.7 still apply, so if you want to fly IFR on a Part 91 operation, only EFBs authorised by the Director can be used in all phases of flight.

For a Part 91 operation, an evaluation of the suitability of using an EFB, instead of paper reference material, is the responsibility of the aircraft operator and the pilot-in-command. If an EFB is used for aeronautical information required by Part 91, then a second independent source of information necessary for the flight (either paper or electronic) must be readily available to the pilot in the aircraft. If the backup source is not paper, the second EFB must be independent of the primary system – including its power source.

The aircraft operator or PIC is responsible for studying the human factors considerations covered in the Advisory Circular, and assessing the suitability of the human-machine interface of the particular device they wish to use. For example, the screen must be large enough to display an entire chart, with the same degree of legibility and clarity as a paper chart, because research shows that obscured information on the sides of charts will be guessed by the operator rather than scrolled horizontally and read. Vertical scrolling has not been found to be such a problem.

Pilots who use an EFB on Part 91 operations must be trained in EFB procedures and use, pre-flight checks of the system, the use of each operational function on the EFB, procedures for cross-checking data entry and computed information, and the conditions (including phases of flight) when EFB use should be terminated.

The aircraft operator or PIC is also responsible for showing compliance with the requirements and guidelines for Part 91 operations listed in AC91-20. This should be in written form on board the aircraft.

AC91-20 can be found on the CAA web site, www.caa.govt.nz, and questions about EFBs can be directed to Ron Doggett, Airworthiness Engineer – Avionics, email: ron.doggett@caa.govt.nz.

iPads™ Can Delete Safety Critical Data Without You Knowing

It has recently been discovered that Apple's latest operating system upgrade, iOS5, includes a file management feature that deletes data to make room for new files. You don't want to find out in flight that when you downloaded the latest Transformers movie (for the kids, of course) that the charts and approach plates you need right now were deleted from your navigation-app. The iPad™ does display a 'cleaning' symbol beside the app icon when it is busy deleting data from it, but this can be easy to miss.

The file deletion problem occurs when there is limited memory space available. If you are buying an iPad™ with the intention of using it as an EFB, app suppliers recommend you buy an iPad™ with plenty of spare memory capacity, over and above what you estimate you will need, and keep an eye on how much memory space you have available over time.

Further information about iPads™ deleting data can be found here:

www.avweb.com/avwebflash/news/IPads_Delete_Files_205619-1.html

www.avweb.com/avwebflash/news/iPadFixOnTheWay_205704-1.html ■

Ohakea Open Day

Ever wanted to land at RNZAF base Ohakea? Here is your chance.

An open day and airshow is being held at Ohakea on Saturday 31 March 2012 to celebrate the Royal New Zealand Air Force's 75th Anniversary.

The theme of the open day is *Yesterday, Today and Tomorrow,* featuring both air and ground displays. All RNZAF aircraft will be on show, including the new A109 and NH90 helicopters. There will be a number of overseas military participants, including RAAF F-18s. A full compliment of warbirds and civil display aircraft will also be on show. In keeping with the theme, the aim is to have a good selection of aircraft previously flown by the RNZAF on display.

The RNZAF will allow civil aircraft pilots to land at Ohakea for the open day. The details of how to get permission, and the arrival procedures to be used, are included in *AIP Supplement* 47/12.

Here are some key points from the *Supplement*:

- If you wish to land at Ohakea, you must register in advance with Ohakea Base Operations. If you do not register, you will be denied clearance to enter Ohakea airspace – no exceptions.
- The back-up weather day is Sunday 1 April. Any cancellation or postponement of the open day will be notified to the email address registered, and by NOTAM.
- Arrivals will be permitted between 0745 and 0945 NZDT (or NZST if delayed until Sunday). Departures will be permitted from 1515 NZDT. The airshow will run from 1030 to 1500 NZDT.
- No fuel will be available at Ohakea. Access to the internet for IFIS and weather information will be provided prior to departure.
- Ohakea ATC will not accept, terminate or extend SARTIMEs.
- NORDO or non-transponder equipped aircraft will not be permitted to land at Ohakea.
- Spectators will be charged $10 per adult and $10 per child over 5 years old, or $30 per family. Cash only, as no EFTPOS will be available.
- Animals are prohibited at Ohakea.

Details of arrival procedures are contained in the *AIP Supplement* – please read them. Any pilots who obviously have not read or understood the joining procedures will be denied entry to Ohakea airspace. A sheet with departure instructions will be issued to each pilot on arrival at Ohakea.

For further information, contact the Ohakea Base Operations Officer, Tel: 06 351 5442, or 0800 RUNWAY. ■

First Part 115 Certificate Issued

Photo courtesy of Double X Flight.

On 2 December 2011, Double X Flight became New Zealand's first certificated adventure aviation business.

John Lanham, CAA's General Manager General Aviation, presented the first Part 115 certificate to Double X Flight Chief Executive, Peter Meadows, at their Tauranga base.

Double X Flight operate a Yak 52 Soviet aerobatic trainer, conducting aerobatic and scenic flights.

Further information about adventure aviation certification is available on the CAA web site, www.caa.govt.nz under "A to Z Topics – Adventure Aviation". ■

Free Aviation Safety Coordinator Course

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

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

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

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

Auckland
Thursday 23 and Friday 24 February 2012

Sudima Auckland Airport Hotel
18 Airpark Drive
Mangere
Auckland

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

The Right Approach to

Don't get high on a visual illusion and sink to a bumpy landing.

Summertime is here, the weather's great and the surf's up. With a 10-knot headwind you're established on final approach in your light aircraft for Runway 23 at Raglan, for a weekend of fun at the beach. What could be better?

For the unwary or low-time pilot however, Raglan aerodrome can present some interesting challenges because of the runway length and some visual illusions, especially landing to the west on Runway 23.

Recently ZK-ZFR, an ATEC Zephyr, was on a short approach to land on Runway 23 at Raglan when it started to sink. The aircraft landed heavily and its landing gear collapsed. Fortunately, nobody was injured, but it was a bad ending to an otherwise uneventful flight.

Be Aware

Raglan airfield with an elevation of 14 feet, by the beach, has two grass Runways, 05 and 23, with no slope and 646 metres distance for landing and takeoff.

Flying instructor and A320 pilot, Bill Henwood, has seen some interesting landings, or rather arrivals, at Raglan.

"I think for any pilot approaching Runway 23 at Raglan, it can be a challenge with some unique features, especially for the low-hour infrequent-flying private pilot.

"On final for 23, the view of the hills at the western end may cause pilots to think they have less room than they have.

"The wind can also be fickle, and a wind from any direction other than straight down the runway tends to bend, and come from the harbour entrance at the western end, but then be straightened by the trees on the northern side of the threshold. A wind from the northwest will tend to show a 230 direction at windsock height, but will behave as a north westerly at treetop height, giving a change of direction and wind shear just as you are crossing the fence," Bill says.

Test Pilot Roger Shepherd says that he has observed some very slow and low approaches across the 23 threshold end boundary fence, and some interesting arrivals.

"My discussions with other pilots revealed that they had noted similar observations to mine," Roger says.

Roger offers some additional thoughts to those of Bill as to what he considers may be contributing factors to the formation of visual illusions that fool pilots into believing they are higher than normal on the approach, and the resulting low, slow approaches and heavy landings.

"The actual strip is not delineated by a mown area as is often the case at other airfields, which means it may not present similar visual cues that other strips normally do.

"The higher terrain of Bow Street at 75 feet, positioned approximately 800 metres from the boundary fence on the extended centre line, and two Norfolk pine trees approximately 520 metres from the boundary fence, may cause pilots to add a little more height to their approach, to subconsciously give themselves plenty of obstacle height over the terrain and treetops.

Raglan

"Sadly, at 640 metres in length, Raglan may represent a short strip to many pilots.

"With amateur-built aircraft, the stall speed may not have been accurately established and may be higher than what people believe and use."

A Typical Scenario

Roger offers the following scenario as a likely plausible explanation for the consequential heavy arrivals off the 23 approach over Bow Street and the pine trees.

"A pilot sets up for a normal landing approach, but from about mid-way down final approach the rising terrain of Bow Street starts to look a little imposing, and the two pine trees become apparent. An increment of power is added, and the subsequent subtle nose pitch up and airspeed decrease is not appreciated.

"Inside one mile on final, the pines begin to look quite high and a little more power and possibly another slight attitude change is made to miss the trees by a healthy margin.

"Crossing over the pines, the approach looks a bit higher than normal, and an impression may be gained that the aircraft will have insufficient distance to stop.

"After passing the trees a considerable power reduction is made to get down to what is considered a normal approach height. Watching aircraft at this point it would seem that the increasing sink rate is not being appreciated, and power is heard to be added with a significant nose up pitch.

"The boundary fence slips by underneath, the power is cut and the aircraft arrives."

Roger says that if we consider a typical day with at least 10 knots of wind, and a low-inertia aircraft, then the glide angle after passing the pine trees can be quite steep and crucially short of the strip.

Tips for Safe Arrivals

"After passing Bow Street and the pines, any power reduction should only be very slight and the aircraft can be placed easily at around a third of the way into the strip with 430 metres left to go – ample for the type of aircraft that seem to feature in these observations," Roger suggests.

Bill offers some additional tips for safe arrivals.

"Know exactly the distance your aircraft requires to land in, not just the ground bit – the whole lot. Slamming the aircraft onto the ground just inside the threshold end boundary fence is pointless and potentially dangerous, if every time you do so you have more than 400 metres of runway left over.

"For amateur-built aircraft, know your actual stall speed at maximum landing weight in the landing configuration. The actual speed your aircraft stalls at could easily be around 30 per cent greater than what you see indicated on the airspeed indicator.

"Know what 1.3 times the stalling speed in the landing configuration (V_{so}) means, and work it out for your aircraft. Practise and become confident at flying stable approaches at 1.3 V_{so}.

"Be aware of the trees on the right of the touchdown area of Runway 23, and the wind shear they create.

"Be aware of the undulations to the left of the nominal 23 centreline."

"Seek professional help if you are in doubt, or if you need to boost your skill levels and confidence before operating at Raglan," Roger adds. ■

Photo courtesy of Betty Shepherd.

Photo courtesy of the RNZAF.

Wake Up to **Helicopter Wake**

Stay alert to avoid a wake turbulence encounter, or you may have an upsetting experience.

With a stiff headwind you are on approach to land in your light aircraft, number one behind an RNZAF helicopter, the new NH90. Suddenly, and without warning, pondering the reasons why helicopters fly so gracefully, your left wing drops violently and your nose pitches just as violently. You are on the cusp of losing control when miraculously you recover and land heavily, but safely. You are shaken.

What just happened? Well, you had an encounter with helicopter wake turbulence.

Helicopter Wake

Helicopters generate tip vortices and wake turbulence of a size and intensity significantly greater than those of similar weight fixed-wing aircraft. Despite this, helicopter wake turbulence is arguably not well known or understood by pilots.

The NH90

Concerns over the wake turbulence generated by the NH90 helicopter prompted a study by the Defence Technology Agency (DTA) to analyse the downwash it generates, and its effects.

Wake turbulence is generated by the pressure differential between the lower and upper surfaces of an aerofoil producing lift, where wing tip vortices impart a rotational motion to the air. The turbulent wake can disturb following aircraft with asymmetric aerodynamic loads of such severity that control authority can be overcome and control lost.

During hover taxiing the vortex can be up to six times the combined blade tip vortices, rise up to 80 feet above the ground and be a significant hazard to aircraft hundreds of metres downwind.

There is thus a severe risk created for aircraft operating parallel but downwind from the helicopter, such as late on final approach to an adjacent runway.

In forward flight, the rotor wake is blown back and clear of the helicopter with very high vorticity to create a disk-edge vortex which resembles that of a fixed-wing aircraft but of much greater strength.

The disk-edge vortex will be up to 17 times stronger than the combined blade tip vortices. Ground effect has no effect in reducing this vorticity and so a significant risk is created at great distances behind the helicopter both in and out of ground effect. The disk-edge vortex is most severe during the transition from forward flight to the hover, as occurs when approaching to land. The vortices will expand and drift with the wind such that operations on parallel runways downwind may be affected by severe disturbances.

Excerpts from the DTA study

Be Aware

The DTA advises that the vortex generated by helicopters is less predictable than that of fixed-wing aircraft, with the potential to rise above the helicopter. The comparatively steep approach paths of helicopters may aggravate this situation such that the trailing wake may be some distance above the helicopter.

"The conventional practice of flying a high approach to stay above the wake of a preceding aircraft may therefore not be adequate to ensure flight safety when following a helicopter", the DTA cautions.

To Avoid a Wake Up

The DTA recommends the following for aircraft to avoid wake upsets.

- When following the NH90, or similar helicopter, in flight or during approach to land, a three minute separation is recommended.
- Stay well clear of hovering helicopters. At 65 metres from the NH90 you could encounter wind gusts as high as 22 knots.
- Ideally, the NH90 should be manoeuvred downwind of the active runways and approach paths. Otherwise a three-minute separation is recommended before using a runway situated downwind of the manoeuvring helicopter.

Read More

Wake Turbulence GAP booklet, email info@caa.govt.nz for a free copy. ■

Lithium Batteries

Lithium batteries have many advantages – long life, high storage capacity for their weight, no memory effect, and long shelf life. They can be found in just about anything requiring batteries, including laptops, phones, just about every other electronic device, and kids' toys. These little bundles of energy can light up your life in ways you weren't expecting if they are misused or abused.

There are two main types in widespread use – 'lithium metal' (disposable) and 'lithium-ion' (rechargeable).

The lithium metal types are mostly either 1.5 V lithium-iron disulphide (Li-FeS_2) cells, a direct substitute for carbon-zinc and alkaline types; or 3 V lithium-manganese dioxide cells, usually in 'button' or 'coin' configurations. Note – 'cell' refers to a single unit; a 'battery' is multiple cells connected in (usually) series.

A typical Li-FeS_2 cell comprises a steel case; a lithium metal anode, insulated from the iron disulphide cathode by a microporous membrane; a lithium salt electrolyte in an organic solvent; and a top cap/positive terminal. The negative terminal is the case bottom. The anode, separator, and cathode are long thin layers rolled in a spiral configuration. Two safety devices are incorporated – a vent valve provides overpressure relief; and a thermistor-type layer beneath the cap limits or interrupts current flow in the event of an external short circuit. It is conductive at normal temperatures, but becomes increasingly resistive when heated.

Lithium-ion cells are structurally similar, including the safety devices, but use a lithium-cobalt oxide anode and carbon cathode, and organic solvent electrolyte. Nominal voltage is 3.6. Several cells make up the familiar battery packs used on many electronic devices, and these batteries have additional safety devices – temperature sensor, voltage regulator circuit, and charge state monitor (a computer chip controlling the charging process). There are literally millions of these batteries in use in New Zealand alone.

Some Basic Precautions

Lithium (particularly Li-ion) batteries are known to have occasionally caused fires, with associated minor explosions. The biggest enemy of a lithium battery is heat, and this can be external, or caused by excess current, as in a short circuit. Heating can cause venting of the flammable electrolyte, and if an ignition source is present, a potential fire situation exists. In extreme events, the case can rupture, releasing the electrolyte and possibly small quantities of highly reactive lithium metal. Overheating of one cell can have a 'cascade' effect.

Lithium batteries are classified 'dangerous goods', and there are restrictions on their carriage in both carry-on and checked baggage, and as freight. Spare batteries and electrical devices with batteries installed should be carried in hand baggage rather than in checked baggage. In the event of overheating or fire, crew can take direct action. Protect spares from short-circuit by using their original packing or a plastic bag, and keep them separate from metal objects. If a battery-powered device must be carried in checked baggage, pack it to prevent accidental activation; for example, by locking a power tool's trigger. Crush or puncture damage to a battery must be avoided, because this can cause an internal short in addition to releasing the contents.

Shippers, freight forwarders and airlines should be familiar with the packaging and carriage requirements, which are detailed in the ICAO *Technical Instructions for the Safe Transport of Dangerous Goods by Air* and the IATA *Dangerous Goods Regulations*.

A wealth of technical and safety information on this topic is available – a web search using the keywords "lithium batteries" will provide any additional information you may need. ■

FOD For Thought

We all think we know about Mr FOD, because FOD is a well used aviation acronym, right? Yes, but do we really understand it, do we respect it and do we really appreciate what it is capable of and the damage that it can cause in terms of human and economic loss?

A FOD Encounter

Mr FOD is someone you don't want to encounter unexpectedly because he can make your day very unpleasant, as pilot Russel Harris from Tauranga recently discovered.

Russel is part of a syndicate that operates a YAK 52 aerobatic aeroplane and he describes a recent near disastrous encounter he experienced with Mr FOD near Tauranga.

"After completing approximately 35 minutes of aerobatics, I had just requested joining instructions when I felt the elevator start restricting movement in the up position. Basically it felt like it was bottoming out.

"The restriction was such that I couldn't get enough elevator movement to change the aeroplane attitude from going down to a climbing position. I made a PAN call, but very quickly discovered the problem was getting worse, with the real possibility of a terminating crash, so I changed the call to a MAYDAY. I then trimmed as far back as I could with no noticeable change in the attitude of the aeroplane.

"With the stick hard back, you start to focus on what you actually have control over. Applying more power made the nose lift enough to buy me time where a landing on the field became a possibility. I relayed this to the tower, and that the option of flying inverted was my next move, as I appeared to have more down movement.

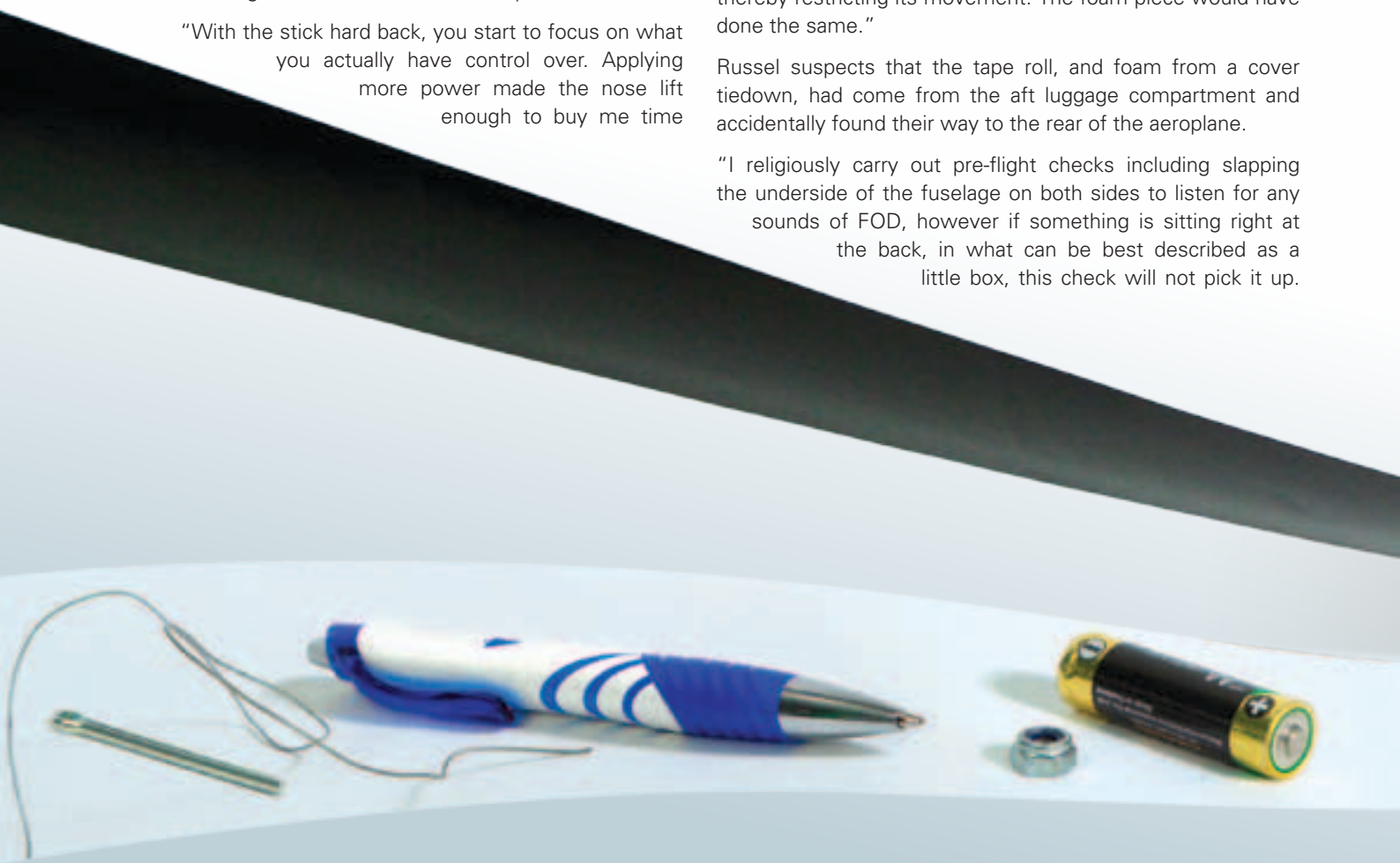
"I found that use of power enabled me to maintain limited control for an approach and landing onto the grass. I left the wheels up as late as I could, as I didn't know what effect this would have on the control I had. I was able to carry out a power-on landing and landed safely with no damage to the aeroplane.

"You learn very quickly to focus on what you have control of and drop the rest, not the nicest feeling when heading towards the beach and unable to correct it. I also had the thought that had this happened on the downward section of a stall turn, or loop, whether I could have inverted the aeroplane in time to get control.

"A roll of old tape and a piece of foam was recovered from the rear of the aeroplane. The elevator arm had picked up the tape roll and wedged it in the slot that the elevator arm moves in, thereby restricting its movement. The foam piece would have done the same."

Russel suspects that the tape roll, and foam from a cover tiedown, had come from the aft luggage compartment and accidentally found their way to the rear of the aeroplane.

"I religiously carry out pre-flight checks including slapping the underside of the fuselage on both sides to listen for any sounds of FOD, however if something is sitting right at the back, in what can be best described as a little box, this check will not pick it up.



"It's a very sobering thought that you ask yourself, could I have contributed to this incident, and the answer is yes if at some stage in the past you failed to notice something dropped.

"I have in the past recovered at least five pens, glasses, a watch pin, an earring, and others have recovered a head set cord.

"Trust me when I say that any one of these items has the potential to kill you, even a plastic pen stuck in the small gap that allows the elevator arm to swing will stop it from functioning."

Russel advised that the syndicate has since fitted a FOD screen to prevent a recurrence and placed a strong emphasis on ensuring that passengers remove any loose items, and ensuring that nothing unnecessary is carried in the aircraft.

So What Exactly Is FOD?

FOD, Foreign Object Debris and Foreign Object Damage, is an acronym used to describe both the damage done to aircraft by foreign objects, and the foreign objects themselves.

FOD is a substance, debris or article foreign to a vehicle or system, which would potentially cause damage.

FOD can also be any damage ascribed to a foreign object, which may or may not degrade a product's required safety or performance characteristics. Foreign Object Damage is any damage credited to a foreign object, and can be expressed in physical or economic terms.

What's The Problem?

Bell Helicopters Textron Inc, in its open document titled, *FOD Prevention for Aviation Maintenance and Manufacturing*, says that:

> Sooner or later Foreign Object Debris becomes Foreign Object Damage!
>
> The majority of instances of FOD can be attributed to lack of standards in an organization, personal complacency, or disregard for procedures.
>
> FOD can come in many different forms and may produce disastrous effects if not identified and corrected. In severe cases, FOD can directly threaten safety of flight crews and integrity of the aircraft.
>
> FOD prevention is an essential element in all company activities and is the responsibility of every company employee.

Internal FOD is damage or hazards from foreign objects inside an aircraft. Cockpit FOD could describe a situation where a loose item in a cockpit jams or restricts the controls. Tool FOD is a serious hazard caused by tools left inside an aircraft, where they can get tangled in control systems, jam moving parts, short out electrical connections, or otherwise interfere with safe flight.

The Multi Billion Dollar Deal

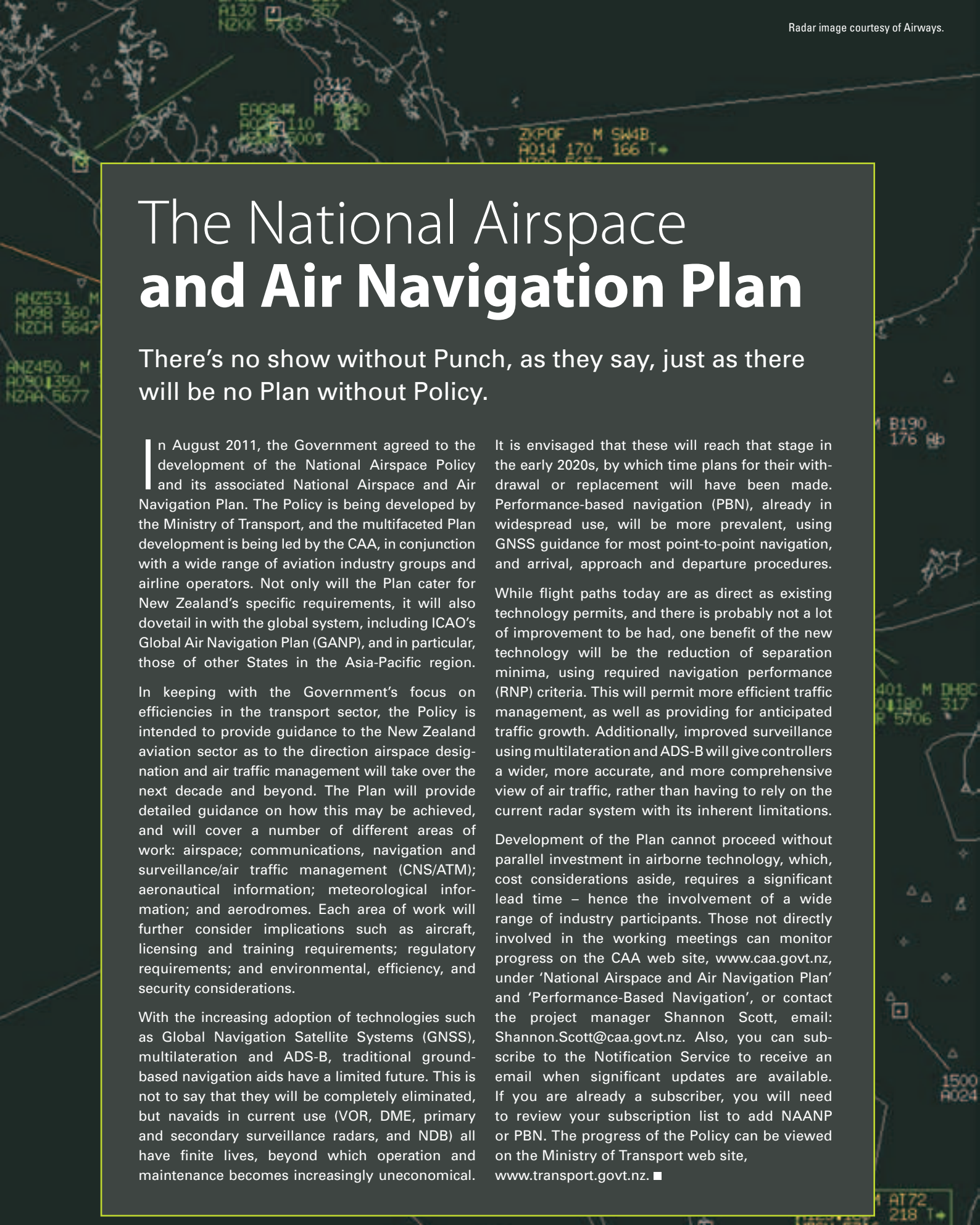
Each year, according to Insight SRI Ltd, FOD costs the international aviation industry an estimated US 13 billion dollars (about 16 billion NZ dollars). FOD causes expensive, significant damage to aircraft and parts and death and injury to workers, pilots and passengers.

To Fight Mr FOD

Established proven preventative programmes are essential in the fight against FOD. All operators are encouraged to have well-developed programmes in place, which includes staff awareness training. The establishment of an effective FOD prevention and control programme will:

- train staff in FOD detection and prevention
- identify potential problem areas and actions
- provide tools to prevent FOD incidents
- assist management in proper planning
- coordinate corrective actions
- establish a climate of continuous awareness
- use the lessons learned to improve safety.

"For a FOD Prevention programme to be effective, it must be planned, implemented and continuously improved," says Bell Helicopters in its *FOD Prevention for Aviation Maintenance and Manufacturing* document. ■



Radar image courtesy of Airways.

The National Airspace **and Air Navigation Plan**

There's no show without Punch, as they say, just as there will be no Plan without Policy.

In August 2011, the Government agreed to the development of the National Airspace Policy and its associated National Airspace and Air Navigation Plan. The Policy is being developed by the Ministry of Transport, and the multifaceted Plan development is being led by the CAA, in conjunction with a wide range of aviation industry groups and airline operators. Not only will the Plan cater for New Zealand's specific requirements, it will also dovetail in with the global system, including ICAO's Global Air Navigation Plan (GANP), and in particular, those of other States in the Asia-Pacific region.

In keeping with the Government's focus on efficiencies in the transport sector, the Policy is intended to provide guidance to the New Zealand aviation sector as to the direction airspace designation and air traffic management will take over the next decade and beyond. The Plan will provide detailed guidance on how this may be achieved, and will cover a number of different areas of work: airspace; communications, navigation and surveillance/air traffic management (CNS/ATM); aeronautical information; meteorological information; and aerodromes. Each area of work will further consider implications such as aircraft, licensing and training requirements; regulatory requirements; and environmental, efficiency, and security considerations.

With the increasing adoption of technologies such as Global Navigation Satellite Systems (GNSS), multilateration and ADS-B, traditional ground-based navigation aids have a limited future. This is not to say that they will be completely eliminated, but navaids in current use (VOR, DME, primary and secondary surveillance radars, and NDB) all have finite lives, beyond which operation and maintenance becomes increasingly uneconomical. It is envisaged that these will reach that stage in the early 2020s, by which time plans for their withdrawal or replacement will have been made. Performance-based navigation (PBN), already in widespread use, will be more prevalent, using GNSS guidance for most point-to-point navigation, and arrival, approach and departure procedures.

While flight paths today are as direct as existing technology permits, and there is probably not a lot of improvement to be had, one benefit of the new technology will be the reduction of separation minima, using required navigation performance (RNP) criteria. This will permit more efficient traffic management, as well as providing for anticipated traffic growth. Additionally, improved surveillance using multilateration and ADS-B will give controllers a wider, more accurate, and more comprehensive view of air traffic, rather than having to rely on the current radar system with its inherent limitations.

Development of the Plan cannot proceed without parallel investment in airborne technology, which, cost considerations aside, requires a significant lead time – hence the involvement of a wide range of industry participants. Those not directly involved in the working meetings can monitor progress on the CAA web site, www.caa.govt.nz, under 'National Airspace and Air Navigation Plan' and 'Performance-Based Navigation', or contact the project manager Shannon Scott, email: Shannon.Scott@caa.govt.nz. Also, you can subscribe to the Notification Service to receive an email when significant updates are available. If you are already a subscriber, you will need to review your subscription list to add NAANP or PBN. The progress of the Policy can be viewed on the Ministry of Transport web site, www.transport.govt.nz. ■

SMS Update

SMS or Safety Management System, requirements have been 'on the radar' for some time, but progress has largely been 'behind the scenes'. These requirements are being incorporated into Civil Aviation Rules and will bring New Zealand into line with the relevant ICAO Standards and Recommended Practices.

The current programme will see draft Rules, the associated Advisory Circular (AC), and Regulatory Impact Statement with the Ministry of Transport towards the end of February 2012, with the proposed release of the Notice of Proposed Rulemaking (NPRM) and draft AC for public consultation in late April.

The AC is being drafted by CAA's Rules Development Unit in conjunction with contractor Aerosafe Risk Management. Aerosafe is an internationally-recognised company specialising in risk management, with its head office in Sydney. Their experience in this field is invaluable, as SMS principles include a significant element of risk management.

The rules programme will initially address SMS requirements for organisations certificated under Part 119 *Air Operator – Certification* (for airline operations under Parts 121 and 125); Part 129 *Foreign Air Transport Operator*; Part 139 *Aerodromes – Certification, Operation and Use; Part 145 Aircraft Maintenance Organisations – Certification*; and Part 172 *Air Traffic Service Organisations – Certification*. Two more groups of rules will follow, to cover the remaining types of certificated operations.

The time frame for the rules to come into force is April 2013, with a subsequent transition period for affected organisations to comply with the new provisions. The length of this period is as yet undetermined, but will allow a comfortable margin in which to implement an SMS. Some larger operators already have an SMS in place, and this voluntary compliance is to be encouraged in others.

For those who have quality management systems (QMS) in place, the transition to SMS should not be a huge task. The main difference is that SMS focuses on the safety, human, and organisational aspects ('safety satisfaction') while QMS focuses on products and services ('customer satisfaction'). Many of the principles of QMS are also used in SMS, and there is scope for amalgamating the two.

ICAO defines a Safety Management System as 'A systematic approach to managing safety, including the necessary organisational structures, accountabilities, policies and procedures.' The applicable ICAO Standards require that an SMS:

a) Identifies safety hazards;

b) Ensures the implementation of remedial action necessary to maintain agreed safety performance;

c) Provides for continuous monitoring and regular assessment of the safety performance; and

d) Aims at a continuous improvement of the overall performance of the safety management system.

A quick comparison with the provisions of rule 119.79 *Internal quality assurance* will confirm that there is not a great deal of difference between an SMS and a QMS.

To bring industry participants further up to date, the CAA will be holding a series of SMS forums during April 2012; in three or four locations yet to be nominated. The exact dates and locations will be posted on the CAA web site, www.caa.govt.nz, under 'Safety Management Systems'. ■

Aviation Community **Advisory Group**

The Aviation Community Advisory Group (ACAG) helps the CAA in the development of ordinary aviation rules by monitoring the progress of rule projects and providing advice to the CAA on the operation of the rules process as a whole.

The ACAG comprises 11 members. There are representatives from five permanent member organisations, and six elected annually.

The 2012 ACAG permanent members are:

» Errol Burtenshaw (Air New Zealand)
» Mark Stretch (Airways Corporation of New Zealand)
» Qwilton Biel (Aviation Industry Association)
» Stu Julian (New Zealand Airline Pilots' Association)
» John Pearce (New Zealand Aviation Federation).

The six members elected by the aviation community are:

» Mike Groome, ACAG Chairperson (RNZAC)
» Paul Drake, Deputy Chairperson (Canterbury Aero Club)
» Mike Caldwell (Society Licensed Aircraft Engineers and Technologists)
» Derek Edwards (Aircraft Owners and Pilots Association)
» Max Stevens (Gliding New Zealand)
» Bruce Donnelly (Walsh Memorial Flying School).

How it Works

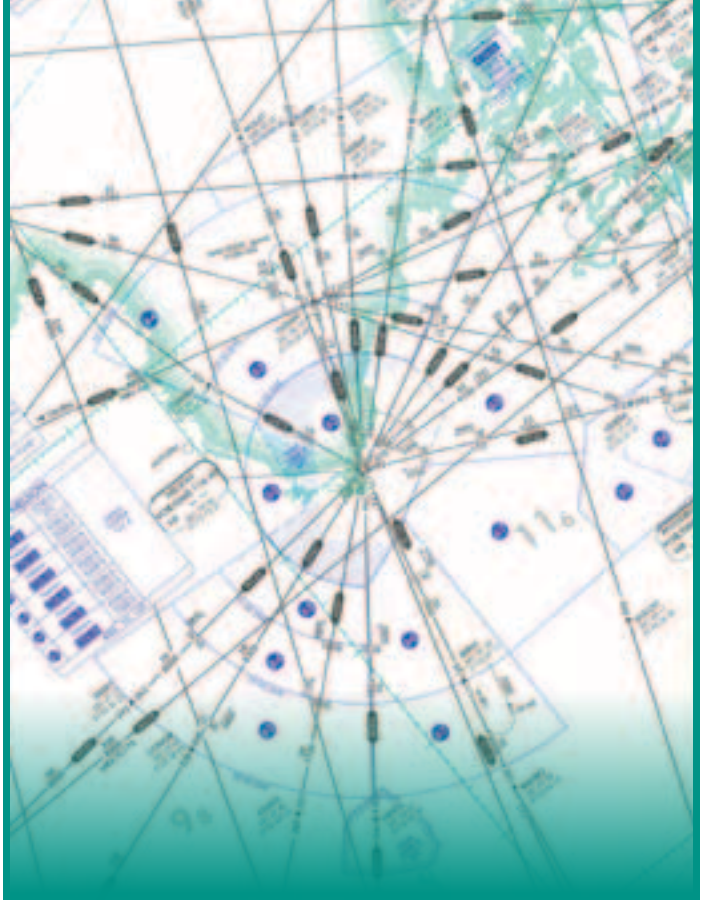
The CAA obtains the necessary technical and specialist input required for the development of ordinary civil aviation rules from within the CAA, the aviation community, and the public, through the rules development process. The ACAG undertakes consultation with the public and aviation community.

Paul Drake, ACAG Deputy Chairman says, "We endeavour to facilitate and promote the participation of interested persons in the rule development process and pursue and promote the enhancement of aviation safety in New Zealand."

The ACAG meets with the CAA three times a year, and conducts an election forum annually.

More information on the ACAG is available on the CAA web site, www.caa.govt.nz, "Rules Development – Aviation Community Advisory Group (ACAG)".

The CAA has published a booklet on *The Rule Development Process* – email: info@caa.govt.nz for a free copy. ■



Significant **Points**

When is a point significant? When it is a "specified geographical location used in defining an ATS route or the flight path of an aircraft and for other navigation and ATS purposes" (as defined by ICAO) and in practical terms, this means IFR reporting points.

Where a significant point is defined by a radio navigation aid, it will generally take the name of that aid, with a two-letter identifier. A position not marked by a navaid, but used for ATC purposes, will be designated by a unique five-letter pronounceable 'name-code', such as POKOM or KAMES. Name-code designators must be easily recognisable in voice communications, and not readily confused with others in the same general area. Allocation of the name-codes by a State is done by selecting available options from a global ICAO database to eliminate duplication.

Some New Zealand designators are clearly derived from nearby place names, such as OTAKI, HAWEA, and FOXTN. It is not always possible to apply local names, as likely choices may already be in use somewhere else in the world. If a name is to be used again by a State after being withdrawn, a six-month stand-down period normally applies before it can be re-allocated.

If a name-code is not required to be pronounceable – and examples are commonly used in RNAV arrival, approach and departure procedure construction – it will consist of the last two letters of the aerodrome location indicator followed by three numbers, for example WN401. Runway thresholds are designated by the letters RW followed by the runway number – RW05L, RW34. ■

FAA/Asia Pacific Bilateral Partners' Dialogue Meeting

27 to 29 March 2012
Wellington, New Zealand

Federal Aviation Administration

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

The annual FAA/Asia Pacific Bilateral Partners' Dialogue Meeting is hosted in turn by the participating countries, and this year it's New Zealand's turn. Last held here in 2004, the Meeting is a forum for the senior management of the various aviation safety authorities with bilateral agreements with the United States, particularly in the areas of aircraft certification and flight standards. Delegates also attend from countries working towards a bilateral agreement (eg, Thailand), or having significant regional safety interests.

New Zealand's Bilateral Agreement with the FAA is of particular relevance to local design and manufacturing organisations, in that Type Certificates and Supplemental Type Certificates (STCs) issued by the CAA can be recognised by the FAA without having to repeat the full process in the USA. An example is Pacific Aerospace Corporation's PAC 750XL aeroplane, the type certification for which is also recognised under FAR Part 23, *Airworthiness Standards: Normal, Utility, Acrobatic and Commuter Airplanes*. Other noteworthy work is in aircraft interior completions, a field in which New Zealand is achieving increasing international recognition.

While the first two days of the meeting are designed for the Government and Authority delegates only, the third 'Industry' day is set aside for local delegates, particularly those associated with design and manufacture, to meet with the representatives from other Authorities and exchange information and ideas. Industry Day presentations will be made by representatives who have either volunteered their services, or have been invited by the host Authority. Intending local delegates are reminded that pre-registration for the Industry Day is essential – see details on the web page.

Geoff Connor, the CAA's Manager Aircraft Certification, is a regular attendee at the Bilateral Partners' Meetings, and says that not only is having a Type Certificate recognised by the FAA a major benefit of a bilateral agreement, but it can also make recognition by other Authorities a much easier process.

"Many of the countries participating in this meeting may actually have working arrangements with each other as well as the USA, so there's a lot of networking going on out there," says Geoff.

Theme

The theme for this year's meeting is 'Remote Regulators in a Global Industry – Challenges and Opportunities'. This theme was chosen to encourage discussion on the particular challenges faced by relatively small and geographically remote regulators and aviation industries in the Asia Pacific Region, in pursuing opportunities in the global aviation system.

Venue, Accommodation and Registration

The meeting is being held at the Amora Hotel, conveniently located in Wellington's central business district. Details of the meeting programme, delegate registrations, and hotel reservations can be found on the link:

www.caa.govt.nz/bilateral

Photo courtesy of MetService

New Westland **Weather Radar**

Pilots flying on the West Coast can now access a wealth of new information, thanks to MetService's new Westland weather radar that became operational in November 2011.

The Westland radar, 7 km east of Hokitika aerodrome, is the fourth of five new radars MetService is installing to supplement the original four weather radars that were established about 20 years ago. The current project has seen new radars installed at New Plymouth (2008), Mahia (2009), and near Rotorua (2010), and will be complete when the Northland radar becomes operational in late 2012.

Each new radar site costs between $2.5 and 3 million.

Weather radars provide forecasters with powerful tools for prediction of thunderstorms, hail, frontal rain bands, wind shear, turbulence and icing. They also add value to the services MetService provides to the aviation community through the MetFlight GA, MetFlight Commercial, and MetJet web sites, with:

» radar images, now updated every 7.5 minutes,

» airport-centric radar imagery, and

» user-selectable nautical mile and kilometre range rings.

MetService Observing Network Manager, Tony Quayle, says, "Over the last decade, we have gone from four weather radars scanning every 15 minutes, and automatic weather stations (AWS) that reported just once an hour, to a network of eight radars scanning every 7.5 minutes and an expanded AWS network sending us reports once a minute."

The CAA's Meteorological Authority Manager, Peter Lechner, says, "Pilots in New Zealand now have excellent weather coverage, comparable to the best in the world, at their fingertips via the Internet, to help them with their flight planning." ■

New Rotary Wing Manager

Steve Kern has been appointed manager of the CAA's Rotary Wing and Agricultural Operations Unit.

Steve has nearly three decades of aviation experience. His initial interest in aviation was kindled by his father, who was a private pilot and part owner of a Cessna at a local airstrip. He started off in industry in 1982, with a maintenance job at Ardmore. After gaining an aircraft maintenance engineer licence, he moved to Wellington in 1992 to manage the maintenance hangar for Airwork (NZ) Ltd.

Rotary Wing and Agricultural Operations Manager Steve Kern

Steve joined the CAA in 2000, initially as an airworthiness inspector in the Rotary Wing Unit and was almost immediately involved in the implementation of the new Part 135.

He transferred to the Aircraft Certification Unit as an airworthiness inspector in 2009. He was then briefly Acting Manager of the Rotary Wing and Agricultural Operations Unit in 2010, before being confirmed in the role.

The Unit certificates and audits operators and maintainers in the rotary wing and agricultural aviation sectors. Steve says, "Although my background is primarily in maintenance, several staff in the unit have extensive flight operations experience that I can draw on. The Unit is a dedicated and hardworking team with a desire to continually improve safety.

"The upcoming new Part 137 is an exciting opportunity to lift standards in the agricultural industry, and the Unit will have a strong focus on educating agricultural operators about the new requirements and implementing the rule." ■

New Products

Revised GAP – *In, Out and Around Mount Cook*

Changes have occurred in the Mount Cook area since this booklet was first published in 2005. Mount Cook Unicom no longer exists, a new Danger Area has been created, and new parachute operations have begun. An updated version of *In, Out and Around Mount Cook* is now available.

Before venturing into the Southern Alps Mandatory Broadcast Zone (MBZ) surrounding Mount Cook, make sure you study the weather, terrain, airspace, reporting points, traffic information and local aerodrome procedures contained in this GAP.

For a free copy, email: info@caa.govt.nz. ■

Licence Verifications

The CAA recently introduced a formal process to be followed for the issue of licence verification letters.

Applicants are now required to forward a completed form CAA602 (available on the CAA web site, www.caa.govt.nz, under "Forms"), together with all the applicable information and items detailed on the form, to the CAA, using the new verification email address, verifications@caa.govt.nz.

This process was introduced following increasing demand from licence holders requesting that the CAA provide letters verifying the authenticity of their New Zealand documents, either directly to themselves, or to an overseas aviation authority. ■

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***
20 Feb 2012	27 Feb 2012	3 May 2012
19 Mar 2012	26 Mar 2012	31 May 2012
16 Apr 2012	23 Apr 2012	28 Jun 2012

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

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: +64 7 376 9342
Fax: +64 7 376 9350
Mobile: +64 27 485 2096
Email: Don.Waters@caa.govt.nz

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Email: John.Keyzer@caa.govt.nz

Bob Jelley (Maintenance, South Island)
Tel: +64 3 322 6388
Fax: +64 3 322 6379
Mobile: +64 27 285 2022
Email: Bob.Jelley@caa.govt.nz

Aviation Safety & Security Concerns

Available office hours (voicemail after hours).

0508 4 SAFETY
(0508 472 338)
isi@caa.govt.nz
For all aviation-related safety and security concerns

Accident Notification

24-hour 7-day toll-free telephone

0508 ACCIDENT
(0508 222 433)
www.caa.govt.nz/report
The Civil Aviation Act (1990) requires notification "as soon as practicable".

Accident Briefs

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

ZK-VNM De Havilland DH 112 Venom Mk 4

Date and Time:	21-Jan-11 at 17:32
Location:	Masterton
POB:	1
Injuries:	0
Nature of flight:	Private Other
Pilot Licence:	CPL (Aeroplane)
Age:	52 yrs
Flying Hours (Total):	8423
Flying Hours (on Type):	5
Last 90 Days:	40

The pilot of ZK-VNM, a Vampire, and an L39 aircraft departed Ohakea for Masterton in preparation for the Wings over Wairarapa Airshow. Arriving at Masterton, the three aircraft encountered passing rain showers and reduced visibilty. The lead aircraft, a Vampire, burst a tyre on landing. The second aircraft landed without incident. The pilot of ZK-VNM then made an approach to the airfield with the intent of leaving as much runway as possible for braking purposes. However, the pilot misjudged the final approach and the aircraft touched down just short of the sealed runway. The main undercarriage detached during the impact sequence but the aircraft came to rest without further incident. There were no injuries as a result of the accident.

CAA Occurrence Ref 11/294

ZK-EQS Piper PA-28-161

Date and Time:	26-Jan-11 at 7:50
Location:	Takaka
POB:	3
Injuries:	0
Damage:	Substantial
Nature of flight:	Transport Passenger A to B
Pilot Licence:	CPL (Aeroplane)
Age:	33 yrs
Flying Hours (Total):	1283
Flying Hours (on Type):	28
Last 90 Days:	139

The aircraft lost power shortly after takeoff. A landing was made in a paddock beyond the threshold, with the right wing and undercarriage sustaining damage. A CAA safety investigation found that the pilot had inadvertently left the locking type fuel gascolator drain valve open while carrying out the pre-flight inspection.

Once the aircraft was in the climb attitude after takeoff, there was an insufficient head of fuel pressure from the fuel tank to prevent the fuel pump from sucking air in through the open drain valve. Due to a relatively low fuel level in the aircraft fuel tanks, the flow of fuel from the drain valve after the pilot had taken the fuel sample, was not that apparent.

Further investigation revealed that the Piper Aircraft Company had identified a safety issue in 1989 and had changed the part number of the drain valve as shown in the Parts Catalogue to a non-locking version. In response to this accident and another similar reported incident with a PA38 Tomahawk, the CAA has issued Airworthiness Directives DCA/PA28/192 and DCA/PA38/26 Gascolator Valve – Inspection and Replacement effective from 29 September 2011. A Continuing Airworthiness Notice 28-002 was issued on 02 September 2011 recommending to owners/operators of other Piper models fitted with a fuel gascolator, that the drain valves be changed to the non-locking type.

CAA Occurrence Ref 11/254

ZK-JEH Piper PA-38-112

Date and Time:	22-Apr-11 at 12:30
Location:	Porongahau
POB:	1
Injuries:	0
Damage:	Minor
Nature of flight:	Training Solo
Pilot Licence:	CPL (Aeroplane)
Age:	26 yrs
Flying Hours (Total):	334
Flying Hours (on Type):	273
Last 90 Days:	42

The nose gear was damaged while on landing on a beach. The aircraft ran into a very soft patch of sand during the landing roll even though the two previous aircraft had completed successful test runs along the surface and it was considered satisfactory. As a result, the organisation has changed its procedures so that beach landings are not allowed unless the trip has been sanctioned and the landing zone has been checked by a highly qualified pilot, including a walk along the landing zone.

CAA Occurrence Ref 11/1799

ZK-BPS Cessna 172A

Date and Time:	25-Jun-11 at 15:00
Location:	Hokitika
POB:	1
Injuries:	0
Damage:	Substantial
Nature of flight:	Private Other
Pilot Licence:	PPL (Aeroplane)
Age:	30 yrs
Flying Hours (Total):	162
Flying Hours (on Type):	162
Last 90 Days:	30

During takeoff, the pilot's seat unlocked and slid back causing a loss of directional control. The aircraft veered off the runway onto soft grass and flipped onto its back. The pilot was not injured.

Airworthiness directive DCA/CESS172/174 had been carried out. The reason why the seat slid back could not be determined. A non mandatory Cessna Service Bulletin allows the fitting of a recoil 'seatbelt' arrangement under the seats, to arrest any sudden rearward movement of the seats. Cessna have extended the 'credit' date they will pay for such work until 15 June 2012. The owner was not aware of the manufacturer's Service Bulletin.

CAA Occurrence Ref 11/2789

ZK-CCI Cessna 172D

Date and Time:	27-Jun-11 at 13:15
Location:	Whitianga
POB:	1
Injuries (Fatal):	0
Damage:	Substantial
Nature of flight:	Private Other
Pilot Licence:	ATPL (Aeroplane)
Age:	56 yrs
Flying Hours (Total):	18000
Flying Hours (on Type):	140
Last 90 Days:	215

During descent to the aerodrome, engine power was lost due to fuel starvation. The pilot had failed to notice that the fuel selector had previously been positoned to the right fuel tank prior to flight, this resulted in a total engine power loss when the fuel in the right hand fuel tank was consumed. There was sufficient fuel remaining in the left fuel tank to continue the flight to the destination, however the pilot failed to select the left tank when the engine power loss occurred. The aircraft was damaged during the subsequent forced landing and was written off by the insurers. The pilot escaped without injury.

CAA Occurrence Ref 11/2801

ZK-DXA Cessna 180J

Date and Time:	21-Aug-11 at 10:14
Location:	Ruahine Corner
POB:	1
Injuries:	0
Damage:	Substantial
Nature of flight:	Private Other
Pilot Licence:	PPL (Aeroplane)
Age:	52 yrs
Flying Hours (Total):	1825
Flying Hours (on Type):	1770
Last 90 Days:	33

The pilot was on a local flight when he decided to assess the conditions for landing at Ruahine Corner airstrip. It had recently snowed heavily but the pilot was familiar with snow conditions and the airstrip. He approached and carefully ran one main wheel along the surface at flying speed. However, the aircraft suddenly bit into the snow and both main wheels settled before the pilot could react. The aircraft continued for about 20 metres before the conditions caused it to dig in and the aircraft tipped over. The pilot manually activated the ELT and evacuated the aircraft. The aircraft was substantially damaged. The pilot advised that he only decided to carry out the snow assessment flypast because he was flying in the area. As a result, the actual conditions caught him out and the aircraft ended up on its back.

CAA Occurrence Ref 11/3694

ZK-VAT Cessna 172R

Date and Time:	25-Oct-10 at 10:20
Location:	Thames
POB:	2
Injuries:	0
Damage:	Substantial
Nature of flight:	Training Solo
Pilot Licence:	PPL (Aeroplane)
Age:	26 yrs
Flying Hours (Total):	137
Flying Hours (on Type):	137
Last 90 Days:	32

The pilot was conducting a solo cross-country flight towards the CPL cross-country syllabus. The planned route was AR-TH-TG-RO-HN-AR; the pilot had landed at all of these aerodromes previously. At Thames, the pilot noticed that there was a crosswind and elected to land on Runway 14, after initially planning on landing on Runway 32. On approach, the pilot felt that the aircraft was configured correctly but failed to notice that there was a tailwind of approximately 10 knots due to a sea breeze. The pilot continued with the landing, and as a result the aircraft landed well into the runway. After touchdown, the pilot increased the power to commence a takeoff, but shortly after felt there was no longer enough runway to get airborne and chose to abort by applying the brakes. However, he left the power on and failed to stop the aircraft before the end of the runway. The aircraft subsequently ended up in the sewage oxidation pond at the end of the runway. The aircraft was submerged but remained upright, the pilot and passenger exited the aircraft and swam to the shore.

CAA Occurrence Ref 10/4108

ZK-EKN Cessna 172N

Date and Time:	26-Oct-10 at 11:00
Location:	Ohakune
POB:	2
Injuries:	0
Nature of flight:	Private Other
Pilot Licence:	CPL (Aeroplane)
Age:	38 yrs
Flying Hours (Total):	1094
Flying Hours (on Type):	1008
Last 90 Days:	104

The pilot was not familiar with the Ohakune airfield, but he received a phone briefing from the owner of the airfield prior to departing. His GPS took him directly to the airfield coordinates, however, the pilot had difficulty identifying the field. He rang the owner who said he could see the aircraft and he said he had just harrowed the strip. The pilot identified a tractor leaving a field so he joined for that field. Due to the sun being low in the sky, the pilot did not realise it was a freshly ploughed farm paddock until too late. The aircraft landed and then tipped over. It was substantially damaged but the pilot and passenger were not injured. The pilot reported that his phone conversation with the owner while circling overhead convinced him he was looking at the correct field. As such he developed a mindset where he made the wrong field fit into his perception of the correct field.

CAA Occurrence Ref 10/4147

GA Defects

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

Key to abbreviations:

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

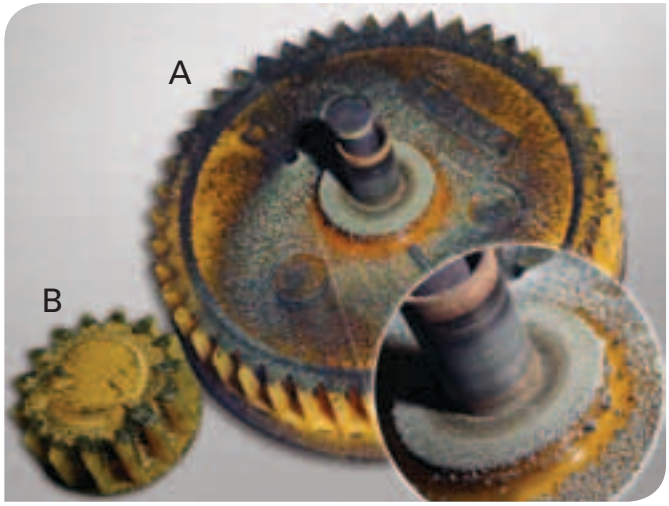
Cessna T182T

Rotor gear, distributor gear

Part Model:	6361
Part Manufacturer:	Champion (Slick)
ATA Chapter:	7410
TSI hours:	452.5
TTIS hours:	1041.7

During a routine 500-hour internal inspection, the right hand magneto was found with severe wear of the rotor gear, distributor gear, and carbon brush. Roughness and excessive friction was also noticed in the main bearing assembly. Aircraft records showed similar findings at the previous 500-hour inspection. The manufacturer was advised and provided the following comment:

There are two issues here; one is the worn carbon brush. The second is the moisture contamination being pumped into the magneto by the pressurization system mixing with the spark residue making a corrosive substance which attacked the inside of the magneto, causing a blockage of the .025" exhaust orifice. This caused a build up of ozone, which then caused a softening of the gear material. The softened gear material wears faster than normal. Internal misfiring caused by the carbon dust, which was created by the extensively worn carbon brush, caused internal arcing which melted/burned the faces of the softened gears. A new carbon brush was released in August 2008 which will minimize the possibility of excessive carbon dust causing this internal arcing. There is also an added requirement in the maintenance manual (L-1363 Rev F) that the coil tab be parallel to the mating half of the frame which will also reduce carbon brush wear.



A. Carbon brush and distributor rotor.
B. Rotor gear.

Approximately two years ago the manufacturer added inspection steps in the 100-hour inspection for pressurized magnetos that requires inspection of the pressurization filter, orifice vent and inlet nozzle for contamination, including moisture contamination. If any is found in any of these three places, then an internal magneto inspection is required.

The maintenance provider notes that the manufacturer's recommendations are already covered by DCA/ELECT/50B but will in future place more emphasis on physically removing the orifice vent and cleaning it in lieu of just ensuring it is clear.

CAA Occurrence Ref 11/3001

Robinson R44 II

Inlet valve

Part Model:	IO540-AEIA5
Part Manufacturer:	Lycoming
Part Number:	LW13622
ATA Chapter:	8530
TTIS hours:	1641

The pilot reported that the helicopter appeared to be low on power as it was establishing into a hover prior to landing. He carried out a precautionary landing. Engineering inspection revealed that the number five inlet valve had failed. A portion separated from the valve stem, and was found in the number four inlet port. The helicopter had been used extensively on moss recovery up until 2009, and the engine was on its second life extension. The engine was replaced.

CAA Occurrence Ref 11/657

Aerospatiale AS 350BA

Governor

Part Model:	AS350BA
Part Manufacturer:	Eurocopter
Part Number:	350A57-1053-00
ATA Chapter:	7610
TTIS hours:	13069

During mountain flying training, the helicopter was in a hover at approximately 500 feet AGL when there was a sudden loss of rotor RPM, and significant yaw to the right. The pilot carried out an autorotation onto a river bed. An engineer was flown in to look at the helicopter and discovered that the socket arm connecting the collective pitch lever to the engine governor had parted. The parting was related to one of the eye end socket's inner plunger being slightly worn.

CAA Occurrence Ref 11/1728

Bell 206B

Driveshaft

Part Number:	206-040-931-103
ATA Chapter:	6510
TSI hours:	96.8

During inspection, the tail rotor driveshaft was found with a wear mark in the middle of the driveshaft. The anti-chafe tape used had become loose and had wrapped around the driveshaft. Consumable material C-419 called in BHT-206A/B-series-MM-5 was used. The tape that the engineer used was commercial tape PN 09-17100, as he was having difficulty procuring the accepted tape. Various improvements have been instigated by the engineers employed and the manufacturer will update the AMM and IPB with a tape part number that is readily in stock.

CAA Occurrence Ref 11/1361

De Havilland Canada DHC-3

Cylinder

Part Model:	R1340-59
Part Manufacturer:	Pratt and Whitney
Part Number:	Cylinder P/N 399359
ATA Chapter:	8530
TSI hours:	4603
TSO hours:	108

During the initial climb, there was a significant loss of engine power. The pilot was able to safely land the aircraft back onto the lake. Maintenance investigation found that the number one cylinder head had separated from the barrel. The Pratt and Whitney R1340-59 engine is subject to DCA/P&W/110 Cylinders – Inspection, to be carried out initially within 125 hours TIS, then at intervals no greater than 250 hours TIS. In this case, the engine had completed 108 hours TIS since recondition prior to the cylinder head failure. A new cylinder assembly was supplied to the operator under warranty.

CAA Occurrence Ref 11/454

Jabiru J120-C

Nose landing gear leg

Part Model:	J120
Part Manufacturer:	Jabiru
Part Number:	6A012A00
ATA Chapter:	3220

A new nose landing gear leg received from Jabiru NZ had a significant amount of surface corrosion present on the bare metal external surfaces. The issue was brought to the attention of Jabiru and a replacement nose landing gear leg was supplied.

CAA Occurrence Ref 10/4413

Kawasaki BK117 B-2

Fuel tank fitting

ATA Chapter:	2810

The operator reported that the 300 litre fuel tank fitting came loose in flight, leaking a small amount of fuel. A precautionary landing was carried out, the spill cleaned up and fuel coupling refitted.

CAA Occurrence Ref 11/1098

NZ Aerospace FU24-954

Link assembly

Part Manufacturer:	PAC
Part Number:	245235
ATA Chapter:	3200
TTIS hours:	17159.6

After takeoff, during agricultural operations, the pilot noticed that the rudder seemed to move more freely than normal. A precautionary landing was made after sowing the load, and it was discovered that the nose wheel steering had sheared off causing the oleo to extend out to be restrained by the wire safety cables. Maintenance investigation found that the shaft in the nose gear link assembly had failed at the radiused portion of the shaft.

CAA Occurrence Ref 11/1078

Pacific Aerospace 750XL

Dorsal fin

Part Manufacturer:	Pacific Aerospace
Part Number:	11-32023-2
ATA Chapter:	5530
TSI hours:	81.5
TTIS hours:	437.6

The dorsal fin was found cracked at the left hand upper position, where it mounts onto the vertical stabiliser leading edge. Chafing was also observed on the fin leading edge skin. Further inspection found the dorsal fin was also cracked at the middle and aft internal frame rivets and fuselage attach angle. The vertical fin leading edge and dorsal fin were replaced.

CAA Occurrence Ref 11/2103

Partenavia P 68B

Brake Disc

Part Manufacturer:	Cleveland
Part Number:	164-07800
ATA Chapter:	3240
TTIS hours:	1220.5

When the pilot applied the brakes after landing, the aircraft veered left even though both pedals felt normal. Maintenance investigation found that the right hand brake disc had cracked and separated from the disc hub. The cause of the brake disc failure could not be determined.

CAA Occurrence Ref 11/1374

Vans RV 7

Joystick

ATA Chapter:	2700

While the pilot was flying the aircraft from the right hand seat, the control stick became detached from the main control rods, and ended up loose in the pilot's hands. The pilot gained control of the aircraft by utilising the control stick on the left hand side. Technical production drawings did not show that a bolt was necessary to hold the control stick in place. A subsequent Service Bulletin has corrected this problem.

CAA Occurrence Ref 10/4919

AV KIWI

SAFETY SEMINARS

CAA

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

Plane Talking

Radio Course

You asked – we listened. The 2012 AvKiwi Safety Seminars focus on using the radio.

Brush up on your pronunciation, improve your situational awareness and make great radio calls.

This seminar is vital to anyone in the aviation industry, whatever type of aircraft you fly. We cover:

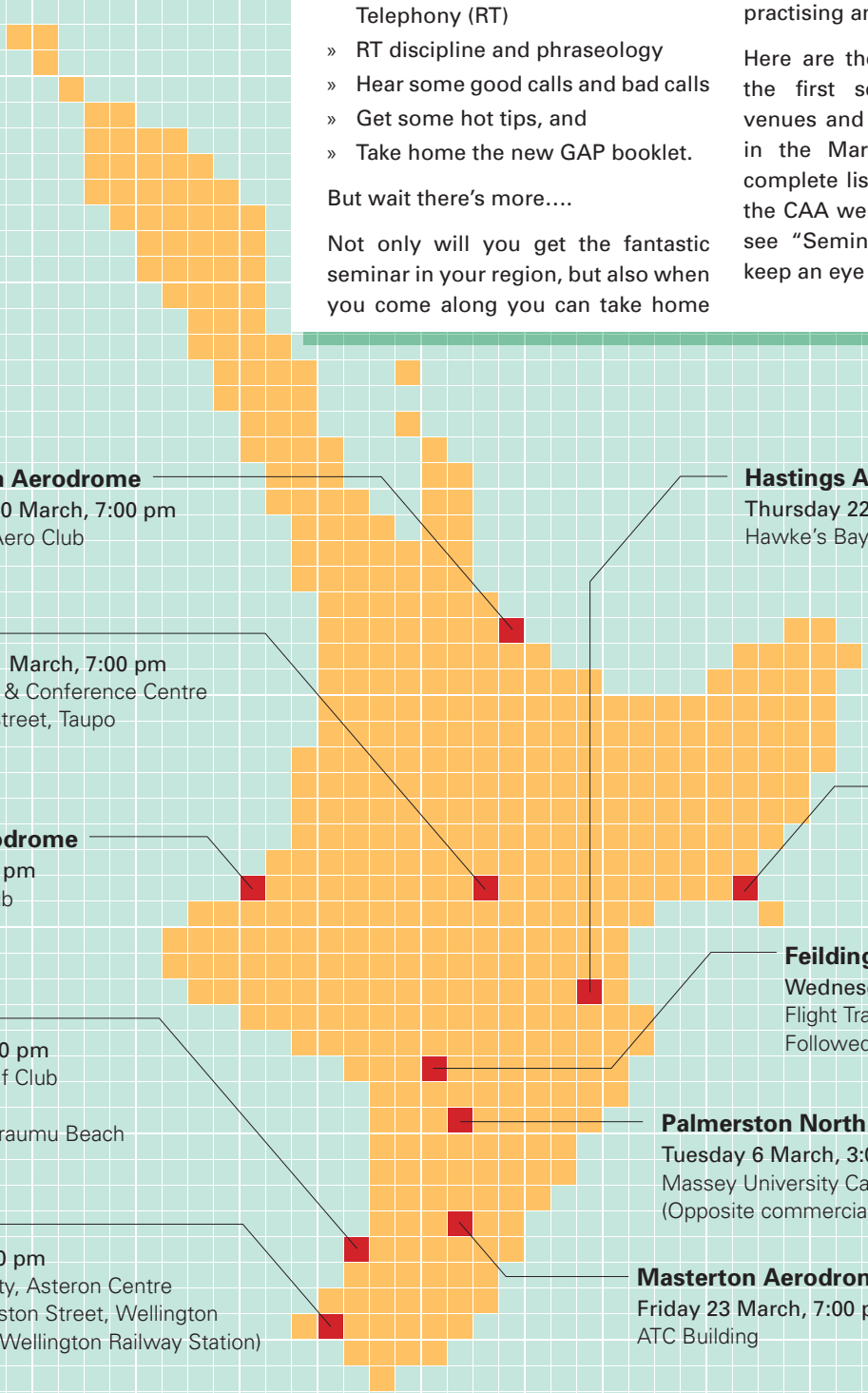
- The principles of good Radio Telephony (RT)
- RT discipline and phraseology
- Hear some good calls and bad calls
- Get some hot tips, and
- Take home the new GAP booklet.

But wait there's more....

Not only will you get the fantastic seminar in your region, but also when you come along you can take home the CAA's all new electronic education course – *Plane Talking* – an interactive course that helps you keep your RT standards high. **But... you have to attend a seminar to get a copy of the course.**

Our presenters are Jim Rankin, RNZAF Instructor, and Carlton Campbell, CAA Training Standards Development Officer – collectively they have 80+ years' experience in practising and teaching RT.

Here are the venues and dates for the first set of seminars. More venues and dates will be published in the March/April *Vector*, and a complete list of seminars will be on the CAA web site, www.caa.govt.nz, see "Seminars and Courses" – so keep an eye out.



Tauranga Aerodrome
Tuesday 20 March, 7:00 pm
Tauranga Aero Club

Hastings Aerodrome
Thursday 22 March, 7:00 pm
Hawke's Bay & East Coast Aero Club

Taupo
Wednesday 21 March, 7:00 pm
Suncourt Hotel & Conference Centre
14 Northcroft Street, Taupo

Gisborne Aerodrome
Monday 19 March, 7:00 pm
Gisborne Aero Club

New Plymouth Aerodrome
Monday 5 March, 7:00 pm
New Plymouth Aero Club

Feilding Aerodrome
Wednesday 7 March, 6:00 pm
Flight Training Manawatu, Cardinal Hangar
Followed by fish & chip supper

Paraparaumu
Thursday 8 March, 7:00 pm
Paraparaumu Beach Golf Club
(main clubrooms)
376 Kapiti Road, Paraparaumu Beach

Palmerston North
Tuesday 6 March, 3:00 pm
Massey University Campus Japanese Lecture Theatre
(Opposite commercial complex)

Wellington
Friday 9 March, 7:00 pm
Civil Aviation Authority, Asteron Centre
Level 15, 55 Featherston Street, Wellington
(Use entry Opposite Wellington Railway Station)

Masterton Aerodrome (Hood)
Friday 23 March, 7:00 pm
ATC Building