

CAA NEWS

Informing for Safer Aviation

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Landing**

Risk Assessment Aids Rescue Effort

On 26 December 2004 a devastating tsunami turned the Indonesian coast of Sumatra from a sun-drenched, quiet location, to a scene of chaos, misery and death. The scale of the destruction was enormous. It is estimated that 250,000 people were killed in Indonesia alone, and 400,000 people were displaced from their homes.

Offers of help came from almost every corner of the world, and rescue helicopter pilot John Funnell, from New Zealand, put his hand up to help.



The landing area was amidst the devastation.

John, managing director of Taupo-based company Helicopter Services BOP Ltd, and a team of five from subsidiary Heli Harvest Ltd, ferried its Russian built Mi-8MTV-1 helicopter 5600 NM to Banda Aceh, Indonesia. The ferry flight took 47 hours, over five days, and on arrival they set up a six-week aid operation for Oxfam.

They worked to ferry water pumps, tents, mosquito nets, bedding mats, sanitation equipment, 4WD vehicles and other equipment to stricken villages in the area. The team flew up to four tonnes of equipment at a time, making three or four trips a day to affected areas.

Working under difficult and unfamiliar conditions meant many unusual risks needed to be constantly identified and controlled. Even the usual ground risks associated with helicopter operations, such as noise, manual handling, and rotor strike of personnel around the aircraft, were more acute in this environment.

The *Aircare Risk Assessment Template* helped the team to recognise and respond to these risks. The team modified the *Aircare* template for the conditions; they used it while planning the mission in Taupo and throughout their time in Indonesia. It helped identify

risks and put strategies in place to protect the crew, the local people on the ground, and the aircraft. Updated regularly, the template was vital to the success of the mission.

“I had used this risk analysis system at home, and as it was so effective and simple to maintain, it made sense to use it again in Indonesia. We changed crews every two weeks due to the difficult living conditions in Indonesia, and the *Aircare* template was the only effective way of managing risk, and recording new risks as they were discovered,” John said.

John commented that the key to anticipating and preparing for multiple risks was to think carefully about the operating environment before taking to the air.

“Banda Aceh was very different to home. Temperatures and humidity were different, language was an issue, and the infrastructure was impaired and unfamiliar. We were taking off and landing in a lot of different situations, and food supplies, fuel quality, and hygiene could not be guaranteed.



John Funnell between flights in Banda Aceh.

“Before setting out on any mission we recorded what we thought the risks would be. Then as each new risk was identified the crew would add it to the list. We also built up a set of modified operational guidelines, which meant we had few problems or injuries.

“We had an arm injury from lifting which required surgery, a bird strike, and a fuel contamination problem,” John said. These were the only incidents after six weeks in Banda Aceh. John credits this relatively good record to the team’s focus on the *Aircare* risk assessment procedures.

“It focused everyone’s attention on the known risks, made them anticipate problems and have a plan of action to prevent or reduce risk. Because it was in writing, it became a briefing document when we cycled crews every two weeks. As a result, we were all on the same wavelength, with the right mindset.”



Local Indonesians flock to help unload supplies.

As new risks were discovered, new controls were needed to minimise, isolate or eliminate hazards. For example, crews kept a close lookout for loose material in landing areas, to minimise the risk of debris being ingested into the rotors while landing in disaster areas.

There was a high risk of bird strikes while flying over ripening rice fields, so crews reduced speed when operating at low levels to minimise the risk. One risk that the New Zealanders were not used to dealing with was, when operating over areas controlled by opposition political forces, the team flew at a minimum height of 3000 feet AGL to keep the aircraft above small arms range.

John said the operational environment also created acute health risks, which were identified, assessed and logged. "We had to combat dehydration due to the heat, and illnesses like dysentery. We ensured the crew drank a minimum of four litres of water a day, and only ate cooked food, or food which needed to be peeled (like bananas or oranges) in order to minimise the risk," John said.

Even the risks of driving in Indonesia were entered on the template. "Crews were instructed to only use local drivers who knew the local rules. This seemed to involve using the horn a lot, and as long as you got your vehicle's nose in front, you apparently had the right of way. Not for the faint of heart."



The New Zealand team could see the full scale of the destruction from the air.

"Once you start using the Aircare template and make it a part of everyday procedures, it's surprising what you identify. It's a great way of avoiding later regrets and helps with managing business risks. To be effective, all crew must be involved in the process."

While some may see this accident prevention procedure as expensive in time or money, "it's nothing in relation to the cost of an accident," says John.

The Aircare programme is an industry led safety initiative, made possible through a Memorandum of Understanding between the Aviation Industry Association, the CAA, and the Accident Compensation Corporation. The *Risk Assessment Template* was released in November 2004 with a DVD titled "Managing Risk in Aviation". Copies can be obtained from the Aviation Industry Association, telephone 0-4-472 2707 or email admin1@aia.org.nz.



Very few structures remained standing.

Thanks to John Funnell and his crew for help with this article.

Celebration of Historic Glacier Landing

Aoraki Mount Cook Ski Planes are planning an event to mark the 50th anniversary of the first ski-plane landing on the Tasman Glacier. This will be held on 1 October 2005.

Former RNZAF wing commander Harry Wigley landed a single-engine Auster on the Tasman Glacier in late September 1955. Harry came up with the idea of landing tourist flights on the high, flat, snowfields of the Tasman, Franz Josef and Fox Glaciers while flying for Queenstown-Mount Cook Airways.

Harry drew on the expertise of E H 'Carp' Carpenter, to design retractable skis for the aircraft. Carp was head of the New Zealand Air Department's Airworthiness Division, and had knowledge of ski-planes after time spent as a Canadian bush pilot. The skis were made of laminated Oregon Pine. They were retracted by a system of radius rods, for takeoff from the grass strip at The Hermitage, and lowered for the snow landing.

On the day of the flight, the weather cleared after a light southerly. With safety in mind, the Auster was loaded with ice axes, shovels and emergency gear. Harry's passenger Allan 'Squib' McWhirter dropped markers to delineate the landing area, which was on the glacier's eastern side opposite the Malte Brun Hut.

With the flaps back to one-quarter, and half-power on, the aircraft flew parallel with the snow. Harry then applied full power at the lowest possible speed and the heels of the skis gently skimmed the snow. It was a tense moment, not knowing how the skis



The first ski-plane landing on the Tasman glacier, 1955.

might react, or whether the Auster was sufficiently powered to get airborne again.

All went well, and thousands of flights have followed. Today Aoraki Mount Cook Ski Planes operate Cessna and Pilatus Porter aircraft. They would like to contact former ski-plane pilots and staff to help celebrate this historic landing. Sir Edmund Hillary, who was on Harry's third flight, is a guest of honour for the anniversary weekend.

Ski-plane pilots can contact Karen Carter for more information on the anniversary.

Tel: 0-3-430 8034, or email: info@mtcookskiplanes.com.

Long-Serving Couple Retire

Graham and Jutta Pearson have retired from the CAA after many years of service. They are held in high esteem by their peers and by aviation industry members. So much so, that aviation operators joined to put on a dinner for Graham when he was in the South Island recently.

Jutta, Flight Manual Administrator for the Aircraft Certification Unit (ACU) has worked for the CAA (or equivalents) for 26 years. Jutta has maintained the CAA's flight manual library and has been the industry point of contact for flight manuals. Jutta has provided excellent support to ACU technical staff in preparing Certificate of Airworthiness issue documentation, ensuring checklists are completed and the computer database is updated. Her general willingness to help out and her friendly manner has been of benefit to the ACU.

Graham retires from his position of Airworthiness Inspector with the Rotary Wing Unit after 19 years of service with the CAA. His career in aviation spans working in many roles for different organisations, including the RNZAF and Pacific Aerospace. Graham's extensive knowledge meant that people from the aviation community, and the CAA, referred to him for guidance on Rules and certification issues on a daily basis.

Graham was involved in developing the procedures for certification of air operators and, in conjunction with the aviation community, was involved in developing advisory circulars to assist operators gain Part 135 certification. ■



We wish Jutta and Graham all the best in their retirement.

Seat Belts

As part of the “Fly Safely This Summer” campaign conducted by CAA’s General Aviation Group last November, the Airworthiness Unit focused its attention on the condition of seatbelts in GA aircraft. Spot checks of seat belts showed that, in most cases, they do not appear to be receiving the attention they deserve.

This is a timely reminder to operators and maintenance personnel to thoroughly inspect seat belts and attachments for general condition. Seat belts that are in poor condition should be replaced with new approved sets. As an obvious comparison – if the belts would not pass a Warrant of Fitness examination on your car, they are not suitable to remain in service in your aircraft.

Civil Aviation Rule Part 43, Appendix C, outlines the procedures for Annual and 100-hour Inspections. In addition to some general inspection criteria listed, seats and safety belts are required to be inspected for “poor condition, apparent defects, and security of adjustment devices”.

As with most maintenance, how well these criteria are judged and acted upon depends on the professional integrity, skill and knowledge of the licensed engineer carrying out the inspection.

Seat belt rejection criteria include such things as:

Webbing defects

- a cut, including a cut on the surface
- a rip or tear
- fraying
- stretching, for example, the belt has unusual web patterns or the webbing is deformed, will not lie flat, is curled, or rippled
- fading so that most of the colour has been bleached, shows signs of chalking (a powdery residue is evident on the webbing), or the webbing has become stiff
- the belt has been dyed to conceal fading
- contamination from oil, grease, paint, solvents or similar products

Stitching defects

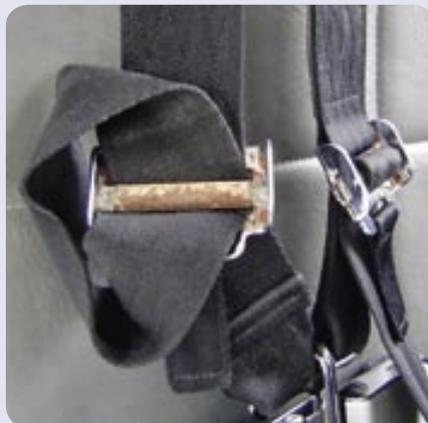
- damaged or insecure
- shows sign of unapproved repair, eg gluing, stitching by hand



Webbing must be in good condition and belts must retract properly like this example.

Buckle and tongue defects

- corroded
- mismatched
- do not lock
- do not remain locked
- do not release easily
- are insecure when coupled



Seatbelts with corrosion need to be replaced

A component is missing, cracked, distorted or damaged in such a way that

- its strength or integrity is reduced
- it may damage another component or the webbing
- foreign matter may enter the interior of the mechanism

Anchor defects

- insecure
- corroded
- elongation of attach holes

Performance

- the belt does not pull out easily from the retractor
- the belt does not retract properly, the action is slow or intermittent.

Civil Aviation Rules, Part 91 Appendix A4 *Restraints* states that seat belts must meet the requirements of TSO C22, or ISO/FIA 8853, or FIA 8854, or be proof loaded to 50 percent of the rated strength every 12 months. Torso restraints must meet TSO C114 and inertia reels MIL-R-8236.

What does this mean?

Part of the TSO, ISO/FIA, and FIA requirements is that seat belts must have a metal-to-metal buckle. This does not include the friction lock type found on early Piper and Cessna aircraft. These must be replaced with approved metal-to-metal buckle seat belts.

The rated strength of a TSO, ISO/FIA, and FIA seat belt is 1500 lb. If the belt has to be tested annually, then the entire length of the belt, including all the buckles and fittings, must be load tested to 750 lb.

Aircraft operators have a key responsibility – an engineer may only see an aircraft once a year. The ultimate responsibility for ensuring the aircraft is maintained in an airworthy condition lies with the operator.

Seat belts are the last line of defence – and we expect them to perform when it matters. Even a small cut can reduce the strength of a belt by 60 percent. It is a relatively small price to pay to ensure they are kept up to scratch – infinitely preferable to a hospital or funeral bill.



Seat belts in good condition.

Apron Alarms

Getting the Message Across to Everyone

When an emergency occurs in an airport terminal, usually the fire alarm is activated, staff and passengers are evacuated, wardens check remote places for stragglers and then report to the Chief Warden that everyone is accounted for. But are they?

What about the people outside on the ramp? There may be passengers and flight crew who have just arrived and are making their way into the terminal, or staff who have just seen an aircraft away and are returning to the terminal between aircraft movements. How are they warned not to enter the terminal?

It is the airport operator's responsibility to ensure that nobody enters the terminal when it may be dangerous to do so. Operators cannot rely on people being deterred from entering by seeing smoke or flames, because the warning may sound before the actual fire is found.

There are several ways in which operators can ensure that sufficient warning is given to those on the apron. Some airports have flashing red lights on the exterior walls of the terminal, placed so they can be seen by those on the ramp. It is important that operators make sure these lights are fully understood. The lights should be mentioned in the airport emergency plans, and all

tenants should be made aware of their existence and their meaning.

Getting the message across to all ramp users, especially flight crew who may be total strangers to the airport, is vitally important. For airports serviced by Air Traffic Control, an effective way of doing this is for the airport operator to have a direct link to the ATS unit. Tower controllers can then advise incoming aircraft of the terminal emergency, and warn them of delays in deplaning.

For aircraft normally serviced by airbridges, the unsafe red light should be displayed as a means to warn pilots not to dock.



The red light on the airbridge means it is unsafe for aircraft to dock.

If these lights are not linked to the fire alarm system, the organisation responsible for operating the airbridge should know to activate the light when the alarm sounds, and this procedure should be in their emergency plan.

The Airports Division of the New Zealand Aviation Industry Association would like to give a 'heads up' to airport operators, and their tenants, to remind them that they have a responsibility to ensure that people cannot enter a building when a danger may exist, and to encourage them to consider ways and means of getting the message across. ■

Robinson Safety Course

Two Robinson Safety Courses are being run in New Zealand by Rob Rich, Managing Director and Chief Instructor of Aviation Safety Pty Ltd, and President of the Helicopter Association of Australasia, in conjunction with North Shore Helicopter Training Ltd.

This two-day course is based on the Robinson factory course in the United States, and it covers topics such as 'unfriendly' principles of flight, limitations, emergency procedures, maintenance updates, and aviation insurance awareness.

The course is open to all helicopter pilots but is specific to Robinson Helicopters. Robinson Safety Training should be

completed every two years, and a flight check with an approved instructor should be carried out within six weeks of the course.

North Shore Helicopter Training is currently negotiating with insurance companies to make the course 'insurance approved'.

Course One:

23 – 24 July 2005
Goldridge Hotel
Queenstown

Course two: Venue to be confirmed

12 – 13 November 2005
Auckland

Cost: \$490. This includes theory training, course manuals, and catering.



For more information, or to register, contact Anne Robertson.

Tel: 0-9-426 8748

Email: anne@helitraining.co.nz

Young Eagles News



The South Canterbury Aero Club's Young Eagles group flew from Timaru to Tekapo on 13 March 2005 to visit Air Safaris. For most of the Young Eagles, it was their first flight in the Mackenzie Country. Along the way, the pilots talked to them about what they could see below and encouraged them to look at the aircraft's flight instruments and have a go at interpreting them. On arrival in Tekapo, the Air Safaris staff gave the group a tour of their aircraft fleet and operation. The aspiring young pilots found this both interesting and informative.



The South Canterbury Young Eagles, pilots, and Air Safaris staff at Tekapo.



The Young Eagles in front of the Air Safaris Cessna Grand Caravan. Left to right, Scott Walker (Air Safaris), Scott Nelson, Jesse Smith, Georgina Rarity, Hannah Bird, Cameron Paul (obscured), Scott Pearce, Andrew Stewart, Matthew McTague.

VNC Update

The chart amendment cycle is upon us again, and all airspace changes for 2005 have been submitted to Aeronautical Information Management for publishing.

As we worked through the airspace changes, it became obvious that there were going to be changes made to the last four 1:250 000 charts – Whangarei, West Coast, Fiordland and Southland. This being the case, we have decided to hold back the issue of these four charts until the November cycle, so that customers would not be faced with the possibility of purchasing charts in July, then having to buy replacement charts in November.

The charts will be distributed late in October, with an effective date of 24 November 2005.

If you want to place an order for charts, or have a question about any AIP subscription item, please contact: Aeronautical Information Management (a division of Airways New Zealand).

Tel: 0800-500 045
(within New Zealand only)
+64-4-471 1899

Fax: 0800-686 867
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SAFESKIES 2005 International Aviation Safety Conference

Safeskies 2005 will see air safety experts from around the world, put forward new ideas and fresh approaches to safety for airlines, general aviation, flying training, regulators, maintenance organisations, unions, airport operators and consumers. The theme of this year's Safeskies conference is "Past Lessons – Future Safety". The conference will be held 27 to 28 October 2005 at the Hyatt Hotel, Canberra, Australia.

As a prelude to Safeskies 2005, the Sir Reginald Ansett Memorial Lecture will be given by Mr E L "Burt" Rutan, Aerospace Engineer, on 26 October 2005 at Parliament House, Canberra. Mr Rutan is the man behind SpaceShipOne, winner of the Ansari XPrize of US\$10 million, and the designer of this first privately built re-usable rocket ship.

He also designed the Global Flyer, the first

aircraft to circumnavigate the world, solo, non-stop and without re-fuelling.

To receive further information, or to register, please contact:

SAFESKIES 2005

Tel and Fax: +61-0-2-6236 3160

Email: safeskies@bigpond.com

Web: www.safeskiesaustralia.org



RULES DEVELOPMENT

Regulation of 'Adventure' Aviation

The CAA has published a proposed adventure aviation policy for public comment.

The policy would require commercial adventure aviation operators to be certificated. The proposal would cover commercial activities carried out by hot-air balloons, gliders, microlights, vintage and ex-military aircraft, as well

as tandem hang gliding, paragliding and skydiving. Amateur sport and recreation participants will not be affected. Should this proposal go ahead, commercial adventure aviation operators would have to demonstrate that:

- They have appropriate safety management systems in place to ensure compliance with relevant standards;
- Key people are fit and proper to undertake their duties;
- Employees are trained and supervised; and
- Equipment is appropriate to the task and properly maintained.

At present, the standards set by Part 149 organisations determine how participants must be trained and qualified, equipment must be maintained, and operations conducted. There is no provision in the rules to certificate or monitor commercial operators. Increased safety can only be achieved by rules that reflect the commercial nature of the sector, rather than the current rules, which were intended to regulate sport and recreation flying. Part 149 was intended for the issue of recreational certificates and ratings for leisure activities. Part 115 will be the entry certificate for operators wishing to carry out commercial activities.

"Part 115 will not be an easy 'back door' method of getting a Part 135 operator's certificate," says John Lanham, General Manager General Aviation. "Rather, it will be a set of requirements specifically designed to ensure a consistent, appropriate level of safety management across the sector".

The policy proposal, and a question and answer template, are available on the CAA web site, www.caa.govt.nz, under "Rules & more – Notice of Proposed Rulemaking". Comments should be directed to Chris Northover by 29 July 2005, email: northoverc@caa.govt.nz.

Special Category Aircraft – Part 21 Project

A Scope Statement has been developed for reviewing the Special Category Airworthiness Certificate (CAR 21.193). The existing rule is unable to accommodate effectively the many and varied



types of aircraft certified in the Special Category. In effect, the Special Category has become a 'dumping ground' for those aircraft not qualifying for the Standard or Restricted Category.

The Special Category was never intended to cover the diverse types of aircraft it currently does, such as Part 146 prototype, amateur-built, ex-military fixed-wing and rotary-wing, vintage, and replica aircraft. As these are restricted to private operations under CAR 91.105, some operators are unable to legally use them in the manner they had envisaged. As a consequence, some special category aircraft are being operated on what could be considered commercial operations, while owners insist they are private.

The review of Part 21 proposes to identify aircraft types in the Special Category and place them in separate subgroups. This will enable airworthiness, maintenance, and operational rules to be developed for each subgroup, and allow aircraft to be eligible for hire or reward operations under Parts 91, 115, 133, or 137, in appropriate cases. Consequential amendments will be required to other rules such as Parts 1, 26, 39, 43, 91, 133 and 137.

Further information is available on the CAA web site, under "Rules & more – Rule Project Scope Statements – Part 21 Special Category Aircraft".

Part 61 Project Update

Part 61 details the requirements for issuing pilot licences and ratings, and the privileges and limitations of licences and ratings. Part 61 was introduced in November 1992, and a Technical Study Group (TSG) was formed in 2000 to review the rule. To address the scope and size of the project arising from the review of Part 61, the CAA decided to split the changes into three stages.

Stage One – The NPRM was published 4 June 2004, and submissions closed 30 July 2004. A summary of the submissions received was published 8 November 2004. The Draft Final Rule was forwarded to the MoT 8 April 2005 and is expected to be implemented in September or October 2005.

Stage Two – This stage involves changes to the structure of the rule, high-level licensing amendments, such as flight instructor requirements, and the introduction of new licences and authorisations, such as flight instructor (balloon). It will also clarify existing requirements. The target date for NPRM publication is September 2005.

Stage Three – This stage involves changes to require all flight training to be undertaken by a Part 141 certificated training organisation. Changes will be made to part 141 to provide certification requirements for pilot training organisations at two levels. The target date for NPRM publication is September 2005.

Rules Review Implementation (RRI) Project

Transition to the New Rule Process

The new rule development process consists of four distinct phases: *Trigger Phase*, *Issues Assessment Phase*, *Rules Programme Development Phase*, and *Rule Project Phase*.

Management of Existing Projects

All existing projects in the 2004/2005 Rules Programme are currently in the final phase of the new rule development process – the *Rule Project Phase*, so they will not be subject to the new procedures for the first three phases. They will adhere to the new documentation requirements and controls for the *Rule Project Phase* from the point at which they have reached in that phase.

For example:

- A project in the current programme that has not been started will require a project scope statement to be sent to the ACAG members and published on the CAA web site.
- A project that is undergoing NPRM development will require the draft NPRM to be sent to the ACAG members and published on the CAA web site.
- A project with a draft NPRM already published for public consultation will require the draft Final Rule to be sent to the ACAG members before being sent to the MoT, and published on the CAA web site.

Existing projects will require adjustments to their terms of reference to ensure they reflect the December 2004 amendments to the Civil Aviation Act. Projects with NPRMs published after 1 December 2004 will need to take into account the five objectives of the New Zealand Transport Strategy.

No projects have been put on hold as a result of the implementation of the new process, and the scope of existing projects will not be rewritten as a result of the transition.

Management of Projects on the 2005/2006 Rules Programme

The projects on the 2005/2006 Rules Programme will be subject to all of the documentation requirements and controls of the *Rule Project Phase*. They will not, however, be subject to the new requirements of the first three phases, as they have been through the old CIRAG process. Members of the CIRAG Executive were provided with documentation on 91 issues under consideration for the 2005/2006 Rules Programme. They were asked to provide feedback on the priority they would assign to addressing these issues by the end of January 2005. This feedback was taken into account when drafting the rules programme.

There are six new projects on the 2005/2006 Rules Programme:

- Part 135 TAWS
- Part 121/125/135 Simulator Standards
- Part 19 Airport ID Cards
- Part 121/125/135 Training Requirements
- Part 135 Experience levels
- Part 11 Review

Further details on the 2005/2006 Rules Programme are available on the CAA web site under “Rules & more – 2005/2006 Rules Programme”.

From CIRAG to ACAG

Final CIRAG Meeting

In 1998 the CAA Industry Rules Advisory Group (CIRAG) was established to facilitate early industry input into the rule-making process. The CIRAG was a four-member executive made up of two representatives each from the CAA and the AIA. This executive appointed Technical Study Groups (TSGs) to focus on each suggested rule or rule amendment.

In 2002 the Director of Civil Aviation commissioned a review of the participation of interested persons in the development of ordinary civil aviation rules. One of the recommendations from this review was for greater aviation community involvement in the early stages of the rule development process.

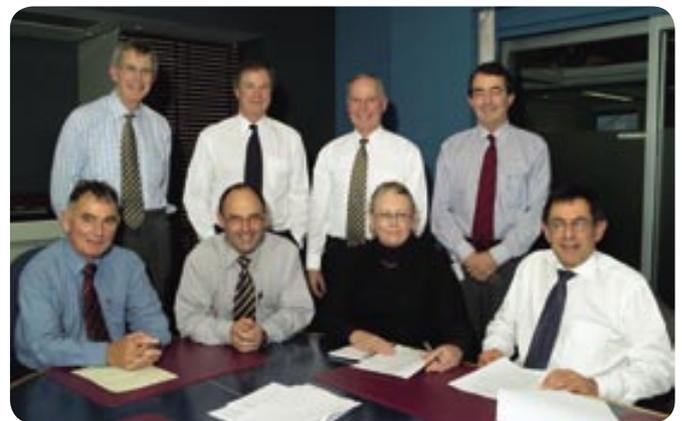
This recommendation led to the formation of a new group to represent the aviation community, and this replaces the CIRAG. The last CIRAG meeting was held in Aviation House on 28 June 2005 (see photo).

ACAG Structure

The new group is called the Aviation Community Advisory Group (ACAG), and its composition has now been finalised. It comprises 11 members selected from within the aviation community as follows:

- (a) one representative from each of the following five permanent member organisations (current representatives in brackets):
 - Air New Zealand (Errol Burtenshaw)
 - Airways Corporation of New Zealand (John McConway)
 - Aviation Industry Association (John Funnell)
 - New Zealand Air Line Pilots Association (Hugh Faris)
 - New Zealand Aviation Federation (John Pearce).
- (b) six members nominated from, and elected by, the wider aviation community. The process for nomination and election of these members is still being finalised.

For further information see the “Terms of Reference for ACAG” on the CAA web site. This document details the roles, functions, and composition of the ACAG.



Present at the final CIRAG meeting were (left to right, seated) Wayne Taylor; John Funnell; Irene King; John Jones; (left to right, standing) Peter Blackler; Tim Allen; Steve Douglas; John Lanham.