

CAA NEWS

Informing for Safer Aviation

Fly Safely this Summer



Summer Spot Checks

Anti-Collision NPRM

**Authority Visits Nelson
and Marlborough**



Preparing for the Summer flying season involves more than sweeping the hangar floor - see the "Summer-Flying Checklists" poster in the November/December 2001 Vector, on the CAA web site, or order your copy from: info@caa.govt.nz

Fly Safely this Summer

CAA Campaign to Reduce Accidents

Waistlines aren't the only thing bulging over the summer months. General aviation aircraft accident statistics do as well.

Clear skies, long evenings and a whole lot of sunshine mean pilots do more hours than any other time of year. More hours can mean more accidents. Which is why the CAA is putting a lot of effort into a number of summer safety initiatives as the aviation community takes to the air after its winter hibernation.

Director of Civil Aviation John Jones says that the summer flying accident statistics were one of the major concerns he identified when joining the CAA, and although this summer is the first time the campaign has run, he says it will continue.

"Like people said at Towards 2005, pilots have to take responsibility for safety. The CAA is not in the cockpit to make decisions, but wants to help as much as it can.

"Every year we have accidents and lose good people because people made bad decisions. They tried to take off too heavy, from a field to short. They fail to out climb rising terrain, eyeball their way through IMC, or just run out of gas.

"All they have to do is get the basics right. Get a proper weather briefing, check

NOTAMS and file a flight plan. Be honest about your ability and get a check ride if you're not sure. Most of the accidents can be prevented by flying to the rules and not taking risks.

"There's no reason why passengers can't ask pilots if they have done all the right things. They're taking the same risk. Accidents will only place further pressure on insurance levels," John says.

The campaign is already under way with a fortnight of general aviation spot checks throughout the country, in October and November last year (see page 3), and more events are planned as the general aviation 'summer' and airshow season takes place from January to March.

Two posters, the "Summer Flying Checklist" and the "Dirty Dozen" have been developed, and Airways New Zealand and the Aviation Industry Association sponsored Chief Pilot Seminars with the theme "Lifting the Game" in Rotorua in December.

Aviation magazines *Pacific Wings* and *Aviation News* are also contributing. *Pacific Wings* will run articles with a summer theme by leading general aviation pilots. *Aviation News* will sponsor a series of articles to hone the edge of the recreational

pilot, covering basic instrument work, mountain flying, and basic entry level aerobatics, to give pilots confidence in handling an airframe. The articles will be written by those experienced in each discipline.

Seminars run by CAA Sport and Recreation Manager Rex Kenny and Safety Education staff will be held at the Sport Aircraft Association's Sportavex held at Matamata in February.

Airmanship awareness days are also planned for recreational pilots. ACE Days – Airmanship, Confidence, Experience – will be held at suitable recreational airfields as part of the campaign.

The days are intended to be friendly expert briefings. Topics are unlimited, but are likely to include subjects such as test-flying homebuilt and microlight aircraft, responsible flying – giving the airfield neighbours a fair go, and strip sense – not necessarily targeted at topdressing strips, but paddocks and beaches as well.

Other topics include living with other aviators – gliders, parachutists, hang gliders, paragliders and large models – aircraft handling tips, keeping your medical, permit and licence renewals, and what maintenance you can and cannot do. ■

Spot Checks

Launch Summer Campaign

Nationwide spot checks of the general aviation sector in October and November last year found a better state of health than expected, though there is still room for improvement, General Aviation Group staff say.

CAA's General Aviation Group carried out spot checks nationwide between 23 October and 4 November as the first phase of the 'Fly Safely this Summer' campaign. The spot checks focused on non-certificated operators and the sport and recreation sector.

General Aviation Group general manager John Lanham said staff were briefed to take soundings on the overall health of the general aviation sector and measure the

extent of any problems by recording 'findings' – to be used for statistical analysis to guide future safety strategies, not for any punitive action.

"It was the intention to be helpful and educative to pilots and engineers if areas of concern were found. The most important aspect was to establish friendly, day-to-day contact between the CAA team and aircraft owners, operators, engineers and the sport and recreational community," John said.

The General Aviation Group staff involved all noticed a pleasing response to the campaign from those they spoke to. Group staff checked 170 fixed-wing aircraft and 120 helicopters, spoke to maintenance

organisations and 153 pilots over the two-week period. In all, 104 'findings' were recorded, covering airworthiness and operational matters.

Those results are still being analysed, but overall, CAA staff said the state of health they found was much better than expected. Although there were some areas of concern, most owners were doing a great job keeping their aircraft in sound airworthy condition and were operating within their limits. They used the opportunity the spot checks presented to update themselves on current issues or clarify points.

Airworthiness Coordinator Garrick Andrews said the General Aviation Group appreciated the opportunity to get out in the field.

"The part of my job I enjoy most is being out there amongst the people and giving back to industry a little of what I have learned over the last 36 years, both in New Zealand and overseas.

"We just wanted to make sure everyone was up to speed, have a bit of a chat, and take the element of threat away. The true spot checks were very good – the people we had a word to just after taxiing in.

"I was most pleasantly surprised with how people accepted us. When we do it again we would want to do it in shorter bursts. We have identified some regions that are not as good as others and some that could do with a bit more of a follow up. Others we would not bother looking at again for quite some time."

Garrick said that documentation was the main issue from the airworthiness perspective. Unapproved modifications were another.

"Some documentation is in poor condition or not up to fully amended status. One example is that the Form 337 was not completed. It needs to be completed for any major modification or major repair. It identifies the acceptable technical data, or is used for approval of the data. The Inspection Authority (IA) also certifies conformity on the Form 337. It's a paperwork thing, but the job is not complete until you do the paperwork."



Above and cover photo: A sparkling example – Jeff Hall cares for his 1960 Cessna 172A at Feilding aerodrome – just one of the 170 aircraft checked during the Spot Check programme.

Continued over ...

General Aviation Fixed Wing Unit manager Merv Falconer agreed.

“The main problem was inadequate document control, the odd lapsed medical and Biennial Flight Review, but the fact that people are prepared to fly with unapproved modifications is also a concern.

“For example, we found a camera pod attached to a wing with the fuel tank vent bent behind the strut to give the camera a clear view of the door. That put the vent in a low pressure area of the wing and created a vacuum in the associated tank.

“Overall though, the condition of private aircraft was found to be of very high standard, which was very pleasing, and people were pleased to see us,” Merv said. Some locations did not receive as much attention as CAA would have liked this time round, but they will be looked at in the future.

“Because of the weather we did not get to some places, but we’ll catch up on those, and other places we’d like to spend more

time in, like Ardmore and the North Shore. Because of the weather when we were there, not a lot of flying was going on,” Merv said.

More work is also being planned in the Sport and Recreation sector.

Sport and Recreation manager Rex Kenny concentrated solely on paragliding operations in Queenstown and Christchurch, with contracted help from the New Zealand Hang Gliding and Paragliding Association. The sector has caused concern recently because of some serious accidents.

“It was about what I expected. Certainly operators took the opportunity to show they were concerned. They appreciate that they need to be compliant. If they have an accident their market disappears and that can do serious damage to their business. Paragliding operators in other areas are earmarked for scrutiny early in the New Year, with a look at microlights and recreational aircraft also planned,” Rex said.

Rotary Wing Unit manager Andy Redfern said that the helicopter standards seen were also satisfying, but there was always room for improvement, not just with helicopters, but across the board.

“Particular attention needed to be given to aircraft loading, fuel management and flight planning. There was also some confusion about what records needed to be kept in tech logs. The campaign was just a starting point. It was up to pilots to make sure their own personal standards, and the high standards they had demonstrated with their aircraft, continued,” Andy said.

So now it’s time to drag out the aircraft, dust off the canopy and ascend into the long delirious burning blue – but have a good think about it first. ■

**Fly safely
this summer!**

Unique Markings

Unique aircraft markings, without the standard three letter registration mark, will be allowed under Civil Aviation Rules from 24 January 2002.

A review of Part 47– *Aircraft Registration and Marking* has been completed, establishing a new process for approving markings used as an alternative to a clearly displayed ‘ZK’ registration mark. One operator is already going through the application process, though it is envisaged that at least 30 aircraft on the New Zealand register will eventually make use of the rule change.

Photos of the uniquely marked aircraft in at least three views will be available on the CAA website to allow aerodrome operators to charge for landings. Uniquely-marked aircraft will still be known by their registration and use that as a radio call sign.

Aircraft Certification Unit manager Jeremy Remacha says the revision has resulted in a big shake-up of Part 47.



Replica Sopwith Camel ZK-JMU at Omaka.

Registration marking sizes have been reassessed to allow the reduced size of 250 mm, and other rules have been clarified as a result of the Part 47 revision.

Advisory Circular 47-1A–*Aircraft Registration and Marking* has also been revised to include the changes in Part 47. This AC has been renumbered AC47-1B. In addition to the introduction of a new form for the Identifiable Paint Scheme and

Marking, the opportunity has also been taken to revise all existing Part 47 forms, keeping in mind feedback from clients.

Jeremy says that, while the new rule will be very clear, any unique paint scheme will have to be acceptable to the Director of Civil Aviation. Historic paint schemes will be assessed on a case by case basis. ■

Authority Visit to Nelson

The Authority visits Air Nelson.



The partnership between industry and CAA was reinforced when the Authority and senior managers visited operators in Nelson and Blenheim on 28 and 29 November 2001.

Director of Civil Aviation John Jones, members of the Authority and senior management took part, accompanied by CAA Field Safety Adviser for the area, Murray Fowler.

The Authority aims to make at least two field visits each year, during each of which a board meeting is held. One of the trips is usually to Auckland, and in recent years the Authority has been to Queenstown, Hamilton and Christchurch. The visits are increasingly well received by the industry, giving operators the chance to raise issues directly.

“To do our job we need to know what the industry is doing, get their feedback and concerns, and find out how they think the CAA is performing. It’s a very effective way of doing it. It’s the partnership approach that will be beneficial to everybody,” says John Jones.

“We have a new face on the Authority in [deputy chair] Hazel Armstrong, and new staff as well – myself and [General Manager Airlines] John Bartlett – so it was great to get out and about.”

This field trip saw visits to Tasman Bay Aviation, Air Nelson, Heliquip International, Origin Pacific, Patchett Ag Air, Marlborough Aero Club, and Safe Air.

“Nelson-Marlborough is an area which covers the whole gamut of aviation – you’ve got airlines, Part 135 operators, agricultural operators, maintenance providers like Safe Air, the vintage aircraft guys at Omaka, and the history of the Marlborough Aero Club. There is also a bit of innovation going on – Ray Patchett with his patented organic spraying systems, and the high standards of Heliquip International, for starters.”

Ray said it was “absolutely brilliant” to see the Authority.

“I put off another engagement to be there. If they take the time and effort, really, we have to respond by being there. I would certainly grab the opportunity with both hands again and advise others to be there.

“We recognise the CAA staff we get to deal with including the Director, but the likes of John Lanham, Andy Redfern and Ivan Harris as well, are the best collection of suitably-qualified people to regulate those of us in industry. I had not met many of the Authority members, but they were all genuinely interested. It was one of the best exercises I’ve seen since I joined the industry in 1969.

“I think if we can’t improve the lot for everybody, the regulators and those being regulated, now – we are never going to do it.”

Ray, an Agricultural Aviation Association (Triple-A) committee member, said he had raised with the Authority a Triple-A initiative to get fences removed from farm strips less than 600 metres long.

“That would be a real step in stopping accidents. You can’t hit the fence if it’s not there.” The Authority said it would look at what it could do to help.

Heliquip International is a Part 145 organisation which rebuilds damaged and time-expired Squirrel helicopters, with Aerospatiale factory support. Part-owner Peter Tait also welcomed the visit, saying it was great to be able to put faces to names.

“We’re at exactly the opposite end of the industry to Air New Zealand and Safe Air – we’re just two guys in a shed rebuilding helicopters. We only do two or two-and-a-half a year,” Peter said.

“Annually we see the audit folk and the airworthiness inspectors, but that’s about our only contact with CAA. To have the full Authority and senior management come in the door is something a little different. As much as anything it’s putting faces to names. That can be very handy. We are only a little microscopic piece of general aviation, and it’s better to know who you’re talking to.

“They gave us a good overview of where they are at and of John Jones’ intention to get closer to operators around New Zealand. Long may that continue,” Peter said. ■

Airways Keeps Pace with Technology

It is 10 years since New Zealand's Air Traffic Control system was upgraded with a system called Aircat. Although it was the most suitable option around at the time, Aircat is mainframe dependent, has capacity limitations which are likely to be exceeded within a few years, and can't be upgraded further. Airways have foreseen the limitations of Aircat, and are already part way through a project to replace it with today's technology, a system called SkyLine, to ensure service continuity.

Phase one, now complete, analysed requirements, identified available systems that would provide the required solutions, and tested the equipment.

Simulation and software development is currently being carried out under Phase 2. While the system is being run to simulate a live operating condition, operations staff are developing new workstations. One dramatic improvement will be the use of Liquid Crystal Display (LCD) screens, giving a brighter, clearer image and reducing heat and static problems. The main displays are

much bigger than conventional computer display units – 78 cm square.

The main advantage of the new system is the architecture, similar to having many Personal Computers (PCs) in a Local Area Network (LAN). This allows for the unlimited addition of servers or components as well as redundancy of servers if required. It will not only be able to cope with increases in air traffic and planned new technologies such as collision avoidance systems, but also with developments that have not even been invented yet.

There are a number of refinements to make life easier for the users as well. The full-colour windows-type display allows menus and information (all scalable) to be inserted. For example, the flight planning information can be inset over the radar display on the large display unit.

The final phase (3) will be training and transition. This will include site acceptance testing and staff training. Implementation will be in three stages, and will be completed by the end of 2003. ■



Airways New Zealand project leader Jim Austin at the mock-up of a SkyLine terminal.

Interested in Chart Standards?

The CAA is currently consulting with industry to develop better chart standards. A consultation document, which seeks comment, is available on the CAA web site at <http://www.caa.govt.nz> under "Airspace" and "Charting Standards". If you would like a hard copy of the document please contact Rose Wood, Tel: 0-4-560 9487, or Email: woodr@caa.govt.nz.

Comment needs to be received by Monday 4 February 2002 and should be addressed to **Len Wicks, Air Traffic Services Approvals Officer, Civil Aviation Authority, P O Box 31 441, Lower Hutt** or Email: wicks1@caa.govt.nz.

MEDICAL MATTERS

Aviation is an industry where nothing stands still. Further changes in the medical area are just around the corner, with the introduction of a new medical certification system on 1 April 2002.

That's the date that the Civil Aviation (Medical Certification) Act comes into force, introducing changes to the way medical certification is managed, including a new process for reviewing decisions. More about that in the next issue.

The Medical Section is currently deeply involved in preparing for the implementation of the new Act. We are also working with the Ministry of Transport and industry to develop a new Part 67 which will reflect the new certification system, and we have recently stopped doing routine assessments in-house in preparation for the other changes.

The decision to stop doing 'routines' at CAA has led to the retirement of Dr Neil Turnbull. I'm sure Dr Turnbull's many friends and colleagues in the industry would join me in thanking him for the significant contribution he has made over many years.

We will keep you up-to-date as the changes to medical certification and Part 67 are rolled out. There's more change to come, but the good thing is that it is in an environment where there is certainty about the law, and a clear sense of direction and purpose for the future. We are positive about the changes ahead for the medical area in 2002 – changes which should benefit all those who fly.

Dr Dougal Watson
Principal Medical Officer

Routine Medical Assessments

CAA has stopped doing routine medical assessments in-house. Until late December the Medical Section used to undertake routine assessments on request, including many of the assessments for New Zealand pilots based overseas. CAA decided to stop doing routine assessments because they are not a core function for CAA.

As a result we stopped accepting new routine assessment requests after 21 December 2001, which will allow us to complete any applications in our system well before 1 April 2002.

All those directly affected were advised prior to the change.

Special Medical Assessments

At any one time the CAA is handling a number of Special Medical Assessments. The good news is that these are now being processed in half the time they were taking in July last year. Sometimes additional information, from the applicant or a specialist, is needed to process an assessment. This is often the cause of delay – some clients have to wait weeks just to get an appointment with their specialists.

Principal Medical Officer, Dougal Watson, said, "Last year I evaluated how many 'specials' were in progress and how long the steps were taking – the whole medical team were determined to speed up this process – so I'm more than happy to report the improvements. At the beginning of January there were only 14 specials in progress, compared with 51 six months ago, and 8 of them were awaiting information from other parties."

Ministerial Review of Part 67 Released

The Minister of Transport, Mark Gosche, released the Ministerial Review of Part 67 on 19 December 2001. The review, by Wellington barrister Bruce Corkill and Chief Medical Officer of the UK Civil Aviation Authority Dr Simon Janvrin, looks at Part 67, Medical Standards, and the so-called 1% rule.

The summary of recommendations of the Review Team is on page 8. You can see the full report on the Ministry of Transport web site: www.transport.govt.nz

The Medical Section contact details are:

CAA Medical Helpdesk

Tel: 0-4-560 9466

Fax: 0-4-560 9470

Email: med@caa.govt.nz

Summary of Recommendations

Here is the summary of recommendations of the Review Team from their report titled, "Final Report of Review Team to Minister of Transport on Rule Part 67, Medical Standards and 1% Rule".

Communication

- The Review Team stresses that good communication between all participants is necessary to maintain a well run medical certification programme; communication can be formal and informal. Both must occur and must be objective and professional.

Part 67 Revision: Subpart A, Medical Certification

- It is worth considering some form of licence, and medical certificate for recreational pilots and those currently on the "lighter" end of the private pilot spectrum.
- Ultimately, validity periods should be brought as much into line with CASA validity periods, with differences filed with ICAO if necessary.
- Minimum standards for the issue and renewal of medical and aviation examiner designations are recommended.
- With regard to standard medical assessments, the Review Team offers for consideration the possibility that standard medical assessments can occur where the applicant or licence holder meets the medical standards promulgated in Part 67.
- Consultation is recommended with a view to simplifying the endorsements to be placed on medical certificates.

Part 67 Revision: Subpart B: Medical Standards

- The medical standards should be updated.
- The Review Team recommends a rewrite of existing Subpart B based on the intended CASA medical standards; some modifications will be necessary, as discussed in this report.

Medical Manual

- The current Medical Manual should be revised; it may be helpful to refer to an existing Medical Manual, for example, the DAME Handbook used in Australia.
- The Review Team envisages two parts; the first part to contain mandatory requirements imposed by general directions; the second part to contain non mandatory explanatory advisory material.

1% Rule

The Review Team recommends that the Director issue a general direction (under s.27G of the Amendment Act) that:

(a) FlightFit software or National Heart Foundation Tables be used to estimate a range around a point estimate of risk in any individual professional pilot or air traffic controller; this estimate should then be further refined by a clinical and operational assessment by the examiner.

(b) This cardiovascular risk analysis should be applied to class 1 and class 3 certificate holders over the age of 40, but cardiovascular risk could be assessed for any other pilot who desires it.

(c) Pilot and air traffic controllers not meeting the risk criteria should remain certified fit whilst awaiting the first stage of investigation, for a period of up to 60 days.

(d) The annual risk analysis by the FlightFit software should be changed to a 5 yearly risk score; there should be three assessment bands, – 0 to 5% 5 yearly range, no action needed; 5 to 10% 5 yearly range, lifestyle changes to be prescribed and actioned; above 10% 5 yearly risk level would require exercise ECG testing.

(e) Pilots and controllers so screened should be permitted increased periods between medicals, using a formulation such as the current rule 67.11(a)(2). ■

Anti-

State of the art technology which could end airliner controlled flight into terrain (CFIT) accidents and dramatically reduce the risk of mid-air collision could be mandatory on most New Zealand-registered Part 121 (large) aeroplanes between 2003 and 2005.

The Rules, covering Part 121 aeroplanes are expected to be finalised in July 2002. They would make Terrain Awareness Warning Systems (TAWS) compulsory for all Part 121 aeroplanes, and Airborne Collision Avoidance Systems (ACAS) mandatory for all but seven freighter aeroplanes. The final NPRM was issued mid December. Submissions on it are invited, and close on 8 February 2002. The final Rule is expected to be drafted by early March and gazetted on 27 June 2002, with the Rules coming into force 28 days later. Investigation of similar requirements for Part 125 (medium) aeroplanes is under way, focusing initially on identifying the costs and benefits involved. An NPRM for Part 125 aeroplanes, if it proceeds, is expected in April 2002.

CAA project leader Dave Park says the Rule changes have been driven by a desire to improve safety levels, as well as to align the CAA with ICAO and CASA. The Minister of Transport has also expressed a desire to have the Rules in place. Other countries have had similar rules in place for some years.

Dave says operators have largely accepted the proposals, and they have had considerable input at Technical Study Group (TSG) level. There is understandable concern, however, particularly from smaller operators, about the high cost of the equipment.

"ACAS is likely to cost \$400,000 to \$500,000 per aircraft and TAWS \$180,000 to \$200,000 per aircraft. But it needs to be done so New Zealand, like other countries, takes advantage of developments in technology which will significantly reduce the risk of collisions – either with other aircraft or with terrain," says Dave.

ACAS

While the rule refers to ACAS, the equipment itself is better known as TCAS, the T standing for Traffic.

-Collision Equipment

NPRM submissions close in February

ACAS significantly reduces the risk of mid-air collision. It depends on aircraft having transponders operating in Mode C, or Mode S, to work successfully.

Dave says several options were looked at. The direction CAA has taken follows that of ICAO, but with a delayed compliance deadline for turboprop aeroplanes. ACAS will be required on all jets – including foreign operators – from 2003, and all turboprops from 2005. That means about 16 aircraft will require the system to be retrofitted, and four aircraft will need to be upgraded to the required standard.

Seven turboprop freighter aircraft will be excluded, but they will have to operate under a mid-air collision risk mitigation plan instead.

The latest standard – TCAS II Version 7 – was selected because it minimises spurious warnings in Reduced Vertical Separation Minima (RVSM) environments, as well as providing other improvements over earlier versions. Dave says TCAS I was not considered because it provides traffic advisory information only and does not give conflict resolution advice. TCAS I is required only in the United States and India, on aircraft with less than 30 seats.

ACAS will be especially effective in reducing the risk of collision outside

surveillance radar coverage, but because it depends on other aircraft carrying operating transponders, more transponder mandatory airspace will be required to achieve the full safety benefit.

Changes are expected to be made to Part 71 to permit the designation of transponder mandatory airspace outside radar cover. Any proposed changes will be up for comment during the 2002 airspace review. It is hoped to designate that airspace by 5 September 2002.

At this stage, the affected airspace looks likely to be the Auckland OCA/A, the Dunedin and Queenstown CTR/D and TMA/D, and the Hamilton and Palmerston North CTR/D, though more airspace will be looked at on a case by case basis. Changes to Part 91 will also be made to clarify the use of transponders.

TAWS

TAWS has the potential to eliminate CFIT accidents. It is proposed that it be mandatory on new Part 121 aeroplanes from 1 April 2002, and all Part 121 aeroplanes from mid-2005.

The rule refers to the equipment as TAWS, but it is generally known in the marketplace as the Enhanced Ground Proximity Warning System (EGPWS).

Aside from Air New Zealand, which is

fitting its jet aircraft voluntarily, the new Rule could affect up to 35 New Zealand-registered Part 121 aircraft. As well as conventional ‘downward looking’ GPWS functions, TAWS provides a ‘forward-looking’ terrain warning system. This uses GPS or other sources of aircraft position information and an on-board terrain database, projecting the terrain information onto a cockpit display to increase pilots’ situational awareness. It also provides more protection than GPWS during non-precision approaches.

“The options were to do nothing and rely on operators fitting the equipment voluntarily, or to allow existing aircraft to continue without it, but require new aircraft coming in to New Zealand to be fitted. We felt the pool of aircraft that would be without the equipment, and the safety benefits it provides, would be too big in either case,” Dave says.

“We also considered excluding some aeroplanes such as freighters, but information suggests that freighters are five times more likely to have a CFIT accident than passenger aeroplanes. We also considered lowering the equipment standards but decided this would not achieve the desired safety benefit. ■

