1998, Issue 1

VECTOR

Pointing to Safer Aviation

Teaching New Dogs Old Tricks

This item first appeared in *Flight Safety Bulletin*, in the Spring 1997 issue. This magazine is published in the United Kingdom by the General Aviation Safety Council.

When faced with any sort of emergency or unexpected situation, primacy in training and experience will often take over and result in a pilot reverting to handling techniques which are inappropriate to the unfamiliar aircraft type being flown.

Flying is fun, and flying old aircraft is **great fun**, but it can also be hazardous, particularly for pilots who have been trained on modern, forgiving aircraft.

It seems to me that one problem associated with flying old aircraft may be that old lessons are forgotten, or have never been passed on to new pilots.

In the 1950s every Gloster Meteor pilot had it drummed into his leather-helmeted head that one must not select the undercarriage down without first ensuring that the airbrakes were closed.

Forgetting this warning could result in a spectacular, and usually fatal, manoeuvre known at the Dreaded Phantom Dive. The downwind checks included, "Speed below 250 knots, **airbrakes in**, undercarriage down..."

The Meteor airbrakes were above and below the inner wing, between engine nacelle and fuselage, and were very powerful; the main undercarriage legs were attached to the same portion of wing. If one neglected to close the airbrakes before selecting undercarriage down then, as the mainwheels and doors extended and produced their yaw in either direction depending on which wheel came out first, the aircraft could diverge in yaw, further blanketing one wing. Deprived of some 40 percent of lift on one side, the Meteor yawed, rolled and plunged to the ground from circuit height before one could say, "Mine's a pint."

Everyone knew of this and only chronically dozy Meteor pilots were killed by the Phantom Dive.

Yet, not too many years ago one of the last surviving flyable Meteors was destroyed in a fatal Phantom Dive from the downwind position.

In the 1950s every De Havilland Vampire and Venom pilot knew that it was perfectly easy to over-rotate on takeoff and to stall the wings while the main wheels were still on the runway. The early De Havilland Comet airliner had the same characteristic. In Venoms and Vampires this could be done without actually striking the booms on the ground and was particularly likely to happen when carrying drop-tanks, bombs or rockets on the wings. Before his first flight in a single-seat Vampire or Venom, each pilot was strapped into the cockpit while a few mates swung on the tail booms to raise the nosewheel off the ground. The briefing pilot then leant into the cockpit and said, "That's enough nose up on takeoff ..." Another mate joined in on the booms to raise the nosewheel a few more inches. The briefer continued, "...and that's too much. Got it? Off you go."

Yet, a Venom, carrying four drop tanks, got out of control during a recent takeoff and crashed. Was it over-rotated and stalled? Eye-witness accounts seem to me to make this supposition possible.

More and more Hunters are coming onto the civil registry.

The Hunter is probably the nicest handling aircraft of its generation and is very forgiving of mishandling – usually. Does every new Hunter pilot really understand about the dangers of jack-

Continued over...

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...continued from front page

stalling at high IMN and the correct use of the tailplane interconnection? What about the use of flaps at high IAS and IMN?

So? What's all this old stuff and nonsense got to do with today's GA pilots? You may not be about to be let loose in a Meteor, Vampire, Venom, P-38, JP, Hunter, Mosquito, Bearcat or Mustang, but they all had, and still have, traps for new pilots. In the Old Days everyone knew about these traps and usually managed to avoid them. Even engine handling was very different in the Old Days, particularly on early jet engines such as Derwents, Goblins and Ghosts. Big piston engines cause surprises, too. A carburetted Merlin will cut out under zero g, causing your heart to over-rev. Whang the Bearcat throttle open while sitting on the runway and you'll get the surprise of your life, a repair bill equal to a National Lottery win, and a laundry bill only slightly less costly.

Tiger Moth, Stampe, Harvard, Auster, Piper Cub, Turbulent, Chipmunk, Prentice, Provost, Stearman, Pitts, Lake Buccaneer and many other aircraft of similar vintage are excellent aircraft and a pleasure to fly – well, most of them are! Each has its own peculiarities and personal quirks. Close the throttle on a Lake and the nose rises; open the throttle and it drops. **Great fun** while concentrating on your very first water landing. If you are lucky enough to be going to fly an old aircraft, remember that they were not designed with lawyers in mind and are not all as bland (and dull?) as the average post-War product of the US of everlovin' A.

Take advice; heed and inwardly digest anything you can learn from Pilots Notes, Aircraft Flight Manuals, Owners Manuals, etc. Listen to your briefings, ask questions and, if the aircraft has two seats, have several check rides.

The Silly Old Fart (SOF) talking to you may actually know something worth listening to about the old aircraft. It is important to realise that the Manuals and Pilots Notes of those days were written on the assumption that you had trained on, say, Tiger Moths and Harvards, and not on Cessna 150s. Remember that all aircraft differed considerably in their handling characteristics in the Olden Days, and most will still bite. A little old Piper Cub demands far more care and skill than a Cessna 152. The Chipmunk is a delightful basic trainer. Your pre-stall, spin, aerobatic HASELL check on the Chipmunk should include "Brakes fully OFF". Do you know why? Really?

Most of the old lessons were learnt the hard way, rummaging through wreckage. Don't insist on relearning each one by the same method. Given a modicum of luck, you too can be a SOF one day. ■

Quotable Quotes

Learning Disabilities

Learning disabilities are tragic in children, but they are fatal in organisations. Because of them, few corporations live even half as long as the person – most die before they reach the age of 40.

P.M. Senge, in *The Fifth Discipline: The Art and Practice of the Learning Organization*, quoted by Professor James Reason at an NTSB Symposium on *Corporate Culture and Transportation Safety*, Arlington, Virginia, USA, April 1997.

Pilot Checks

When did you last have a thorough check (air and ground) with a qualified instructor? Only two kinds of pilots need checks. Those not in regular, current practice and those who are in regular, current practice.

Editor of GASCo *Flight Safety Bulletin*, Spring 1997 issue.

Fuel in the Water?

From a recent issue of the British CAA's safety publication, GASIL.

The pilot of the Grumman Cougar carried out a fuel drain check and took a sample from each of the tanks, with which he was satisfied, and at the conclusion of the preflight inspection the aircraft was readied for its flight.

Shortly after takeoff, the lefthand engine rapidly lost power, and the pilot was forced to do a single-engine circuit, landing back on to the airfield.

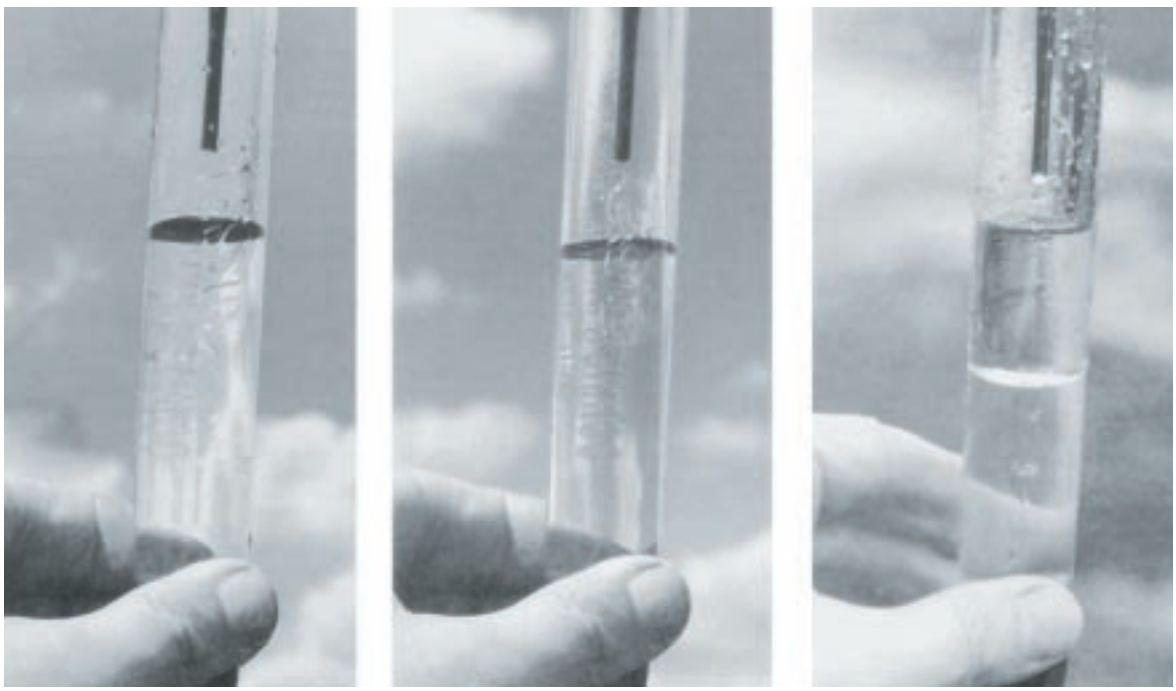
An extended investigation was carried out, and it soon became clear that the lefthand tank had a considerable amount of water in it, and the pilot had, during his fuel drain check, obtained a sampler full of water and not fuel. The righthand tank tested normally, and there was no water in that tank.

British CAA Comment

No doubt this pilot will not fall victim to this trap again! The photographs show that it is extremely difficult to tell the difference between a sampler full of water and a sampler full of fuel. The difficulty is compounded when looking at the samples against a blue background, for instance a clear blue sky. In addition, many of the samplers have a blue base, and this can give the plastic a bluish tint (possibly through some form of refraction) and this also can confuse. A sampler with a yellow base is better.

Even smelling the sample may not necessarily be the complete answer, since just a small amount of fuel will give enough aroma to persuade one that it is all fuel. Many people believe that if there is any doubt, the ready way in which fuel will evaporate if put on to a warm surface, for instance concrete or even one's fingers, is a sure test. However, some people will react with dermatological problems if Avgas touches their skin.

If there is any doubt, a very simple way to establish whether it is fuel or water, is to put half an inch of water in the bottom of the sampler. If uncontaminated fuel from the tank fills up the rest of the sampler, there will be a very clear distinguishing line between the two. If it is only water from the tank drawn into the sampler, then there will be no division between the two fluids. ■



The photo on the left is water, the middle is Avgas, and the right is a mixture of Avgas and water.

Aerodrome Frequencies in Canterbury

The Canterbury VFR Special Procedure Area came into effect on 29 January and is shown on the Christchurch VTC. Aircraft within this area should use the frequency 119.2 MHz.

This area was requested by the Canterbury Airspace Users group because aircraft operating in the area had hitherto been on varying frequencies (eg, 118.3, 119.1, 119.2 and 124.4), and the use of one frequency will enable pilots to have a better awareness of other aircraft in the area and reduce the collision potential.

There are three published unattended aerodromes in the area, West Melton, Forest Field and Rangiora, and it was decided that the aerodrome frequency for these aerodromes would also change to 119.2. This change was forecast in the 1 Jan 98 AIP Supplement (3/98). Unfortunately, the aerodrome frequency changes were not included in the VFG effective 29 Jan 98.

This has caused some potential misunderstanding and confusion for pilots in the area. The next possible published amendment cycle is on 26 March, and the change is expected to be effected on that date (local users felt this was preferable to an earlier change by NOTAM). Until that time the aerodromes will remain on 119.1 as currently published.

Please note, therefore, that the unattended aerodrome frequencies for West Melton, Forest Field and Rangiora aerodromes are currently 119.1, but on 26 March 1998 they will change to 119.2.

When operating in the Christchurch area, ensure your documents are current, particularly the VTC, and remember that you must have received an ATC clearance from Christchurch Tower **before entering** the Control Zone.

What do you Mean, Doc?

"What do you mean, a stress ECG, Doc? – I need stress like a hole in the head!"

by Dr Peter Dodwell, Principal Medical Officer, CAA

Older pilots may make comments like the above, as a result of changes introduced recently by aviation authorities. Pilots have grown accustomed to the 'tools of the trade' used by examining doctors over the years (such as eye tests, ECGs and audiograms). But recently doctors have been refining ways of predicting the progressive effects of coronary artery disease, and the time has come to use these new tools as a more rational basis for predicting the safety of pilots. Coronary artery disease and stroke are the major predictable causes of incapacitation.

Most readers will have come across at least one or two of the factors which can predict the development of *atherosclerosis*, the gradual build-up of material on the inner wall of an artery which can eventually cause a blockage. Smoking, high blood pressure and problems with blood lipids (fats, such as cholesterol) are commonly mentioned and are examples of *modifiable risk factors* (the ones you can do something about). Some of you may have had your blood lipids tested, or had advice about lifestyle changes.

But atherosclerosis is not really a disease. It is something which happens gradually to everyone – without exception – as an inevitable consequence of the passing of time. In other words, age itself is a potent risk factor. So is gender – males are more affected than females, and there seem to be other factors passed genetically from your parents which may protect you or make you more susceptible. These are the risk factors which you cannot modify.

Risk factors have been studied in normal populations for several decades, and the outcome has been the development of tables and formulae for predicting the end-result of this process – a 'cardiovascular event' (CVE). This means the problem that may occur when a crucial artery becomes blocked. If it is a coronary artery, the result may be angina, or sudden collapse, or death from a 'heart attack'. If it is an artery in the brain, the result may be a stroke.

In a pilot, such a CVE, if it occurred in the air, could seriously compromise flight safety. So aviation doctors have spent a lot of time thinking about ways to compare the risk of such an event with other risks, such as the failure of an aircraft engine. There are agreed limits for component failure, so why not look on pilots as a component of the aircraft? Their risk of 'component failure' is termed *incapacitation risk*, and a limit for this has been widely adopted for a decade – that a critical in-flight incapacitation, such as from a CVE, should not exceed 1 per 1,000,000,000 pilot hours (ie, 10^{-9}).

Although component failures in aviation tend to be based on a time factor such as engine hours or flying hours (or in this case, pilot hours), this does not sit comfortably with humans. Firstly, humans rarely get switched off after they land. As a result, they continue to accumulate wear and tear at all times of day and night, although they are not really an aviation risk if they collapse while on the ground. Secondly (and more decisively), doctors who are not involved in aviation find it difficult to think in terms of flying hours anyway. They are more familiar with measuring medical events over a five-year span, or perhaps (if pushed) over a single year.

To bridge the gap between aviation terminology and that of non-aviation doctors, it was suggested that a substitute measure was needed. We check whether the individual's risk is less than *1% per annum*, which for airline pilots equates to the 10^{-9} pilot hours risk limit. Although some adjustments have to be made for other areas of flying, such as commercial and private pilots, this '1% rule' is a useful starting point and has the virtue of simplicity.

For each individual, we can work out their five-year risk of a CVE. Dividing by 5 converts this (very approximately) to the risk over a single year. CASA of Australia has adopted tables from the American Medical Association (and legislated for compulsory blood lipid testing). In New Zealand we have chosen to use a table created in Europe and endorsed by the National Heart Foundation. Both methods have a very sound track record, and in 1997 the CAA advised its Aviation Medical Assessors that they must in future use a reliable risk assessment method such as these when evaluating the fitness of every pilot beyond the age of 35 years.

Good Risk	0.1% p.a.	Borderline Risk	1.0% p.a.	Unacceptable Risk

The AMA may use discretion for risks in the 'borderline' range, provided no identified cardiac condition (or family history) exists, but lipid estimation is essential to clarify borderline cases. Lipids may be omitted only in those cases in the age range 35 to 40 years where other risk factors give a 'good' estimate of risk (below 0.1% pa.). Above age 40, lipids will be required at least once, and then from time to time.

If the resulting risk estimate exceeds 1%, an AMA is forbidden to issue a CAA medical certificate.

This is tricky, because risk tables indirectly imply age barriers. For example, an AMA would appear to be unable to certify any male who is over age 55, because in the age band of 55 to 65 years the average male's risk for a coronary event exceeds 1% per annum; even the man with the best possible risk factors is in the risk range of 1 to 2% per annum.

Another apparent barrier is age 75, since risk tables cease to apply above this age. After that, age itself overshadows all other factors, and average risk is estimated as exceeding 5% per annum (making it unlikely, under these new criteria, that a **new** applicant over age 70 would succeed).

This is where stress ECGs come in. Tables and formulae are all very well for predictions about whole populations. They are not really about individuals, but about **averages**. When it comes to

an individual, the predictions can sometimes go wide of the mark.

We all hear about exceptions, such as the man who smoked like a chimney until the age of 99 years without apparent ill effects! There are factors which cannot be built into a formula, such as genetic resistance (or susceptibility) to atherosclerosis. If you have the wrong parents, you may find that no amount of work on modifiable risk factors will improve your odds.

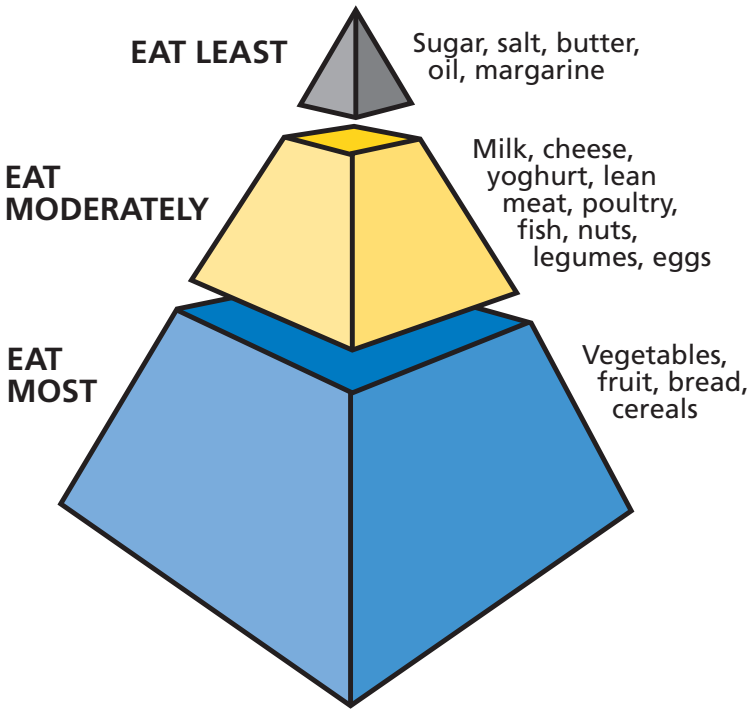
CAA therefore looks on risk factor assessment as just a guide. If the estimate looks bad (worse than 1% per annum) we give the individual the chance to demonstrate that they are **better than average, and with a risk still below 1%**. At present, the most practical way to do this is to record an ECG while exercising until a high pulse rate is reached – a stress ECG.

A test is considered 'negative' if no untoward symptoms or significant changes are detected. This allows the risk estimate to be set aside, though it is still wise to reduce any modifiable factors such as smoking, blood pressure or lipids.

Because this is a rather indirect way of checking on the circulation of blood to the heart, sometimes these results may be misleading. There may be occasional 'false positives' or 'false negatives'. But while CAA (as a calculated risk) accepts all negatives at face value, we cannot ignore the occasional positive unless it is **shown** to be false. A person with a 'positive' needs more complex tests done.

There are various possibilities, all the way up to a coronary angiogram (sometimes called an arteriogram), the only test giving a clear picture of the size of the arteries. How far you go depends on how determined you are to show that the less precise tests might be wrong. An important point to note is that when complex methods are needed to assess a borderline or high risk case (eg, stress ECG, isotope scans, or angiography) the results will generally be referred for Special Assessment. This area is too much of a minefield for the AMA to assess. We often find differences in interpretation from one centre to another, and one value of a centralised Special Assessment process is to iron out such inconsistencies.

CAA realises that this extra testing may seem an undue stress on you. But we feel that pilots do benefit. Those who have a 'negative' result are able to say, with greater confidence than was previously



possible, that they are fit. And those whose testing reveals a problem may be able to take positive steps to slow down this otherwise invisible process.

In Australia, CASA introduced requirements for risk assessment in 1996. Like them, the CAA has never wished to impose an arbitrary age limit (such as the much-debated 'Age 60' rule of the FAA). However, risk assessment models now provide a rationale for a more scientific approach than in the past, and CAA depends on DMEs and AMAs identifying those at higher risk, to ensure rational and fair management.

Occasionally, the tests reveal unsuspected but serious coronary artery disease (bad enough to need bypass grafting or angioplasty). The experience of CASA in Australia has been that such pilots are ultimately grateful that this testing has given them an opportunity to take positive control of their life. We hope that New Zealand pilots will come to the same conclusion. ■

Engine Fire on Start-Up

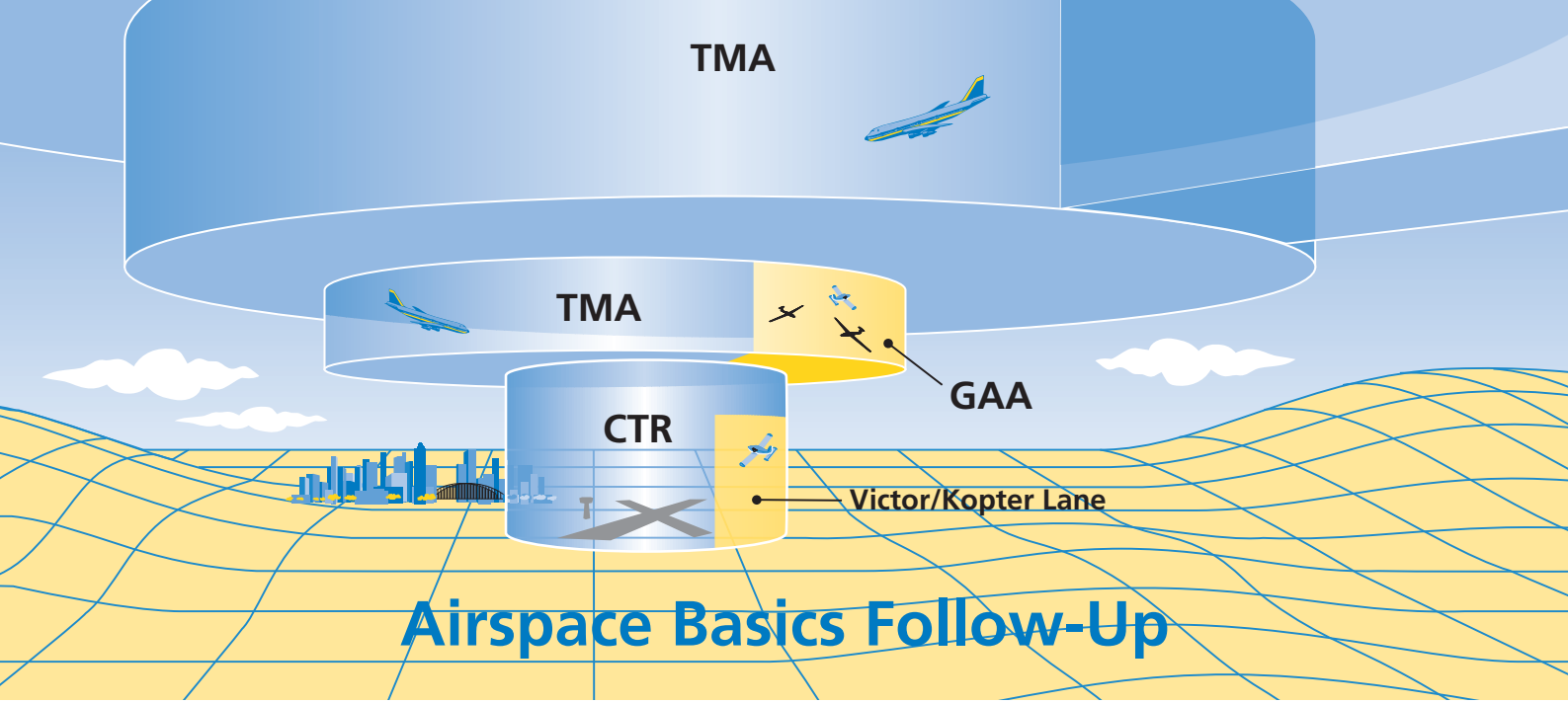
The following item from the British CAA's safety publication, GASIL, highlights an important lesson when priming an aircraft engine by pumping the throttle. Some pilots get into the bad habit of priming with the throttle when the aircraft is fitted with a primer. If your aircraft has a primer, use it.

Preflight inspection of the Jodel aircraft revealed no defects, and the aircraft was full of fuel.

The aircraft was pushed on to the grass and parked into wind with brake engaged. Pre-start checks were carried out. The front tank was selected and the electric fuel pump was run briefly. The mixture was placed at the full rich position and the throttle pumped twice – there being no primer on this aircraft. On engaging the starter, the engine ran briefly and then stopped. The throttle was pumped once more and the starter re-engaged for about 3 or 4 seconds. The engine showed no signs of starting, no backfiring was heard, but a few seconds later a smell of burning was noticed and the pilot ordered evacuation of the aircraft. Seconds later flames were seen coming from the cowling. The pilot ran towards the clubhouse shouting "Fire!". The airfield alarm was sounded and the crash tender arrived. Prior to this, the prompt arrival of a fellow club member and his use of a powder extinguisher resulted in rapid smothering of the fire, which was mainly confined to the engine bay.

British CAA Comment

Over priming does seem to be the main cause for a ground engine fire, and in the above case the pilot did the right thing by evacuating the aircraft as soon as possible. While the aircraft's fire extinguisher can be used to good effect, *GASIL* would not want to hear of people engaging in unnecessary heroics and putting themselves at risk by attempting to put out a fuel fire.



Airspace Basics Follow-Up

We have received very positive feedback from readers about the Airspace Basics article in the last issue. We have identified some minor amendments and improvements which are covered below. In addition, some queries have arisen, and these too are addressed.

Minor Amendments

The following amendments should be made to *Airspace Basics* in your copy of *Vector* 1997, Issue 7.

- Page 5, chart, second blue box in right column – delete the word "All".
- Page 7, MBZ, the diagram gives an incorrect impression – see revised illustration in this article.
- Page 8, PDZs, first para, third line – delete "of the aiming point".
- Page 8 ATZs. The following two paras provide a clearer explanation to replace the first para.

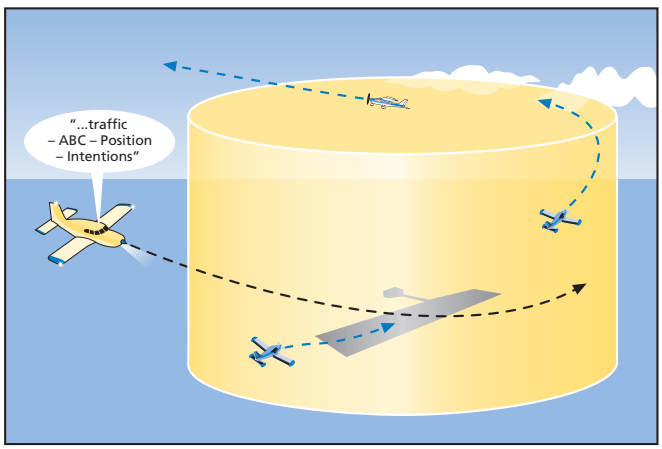
ATZs are prescribed at some uncontrolled aerodromes to protect busy aerodrome traffic circuits. Normally aircraft should enter an ATZ only if they are intending to land or take off at that aerodrome.Transiting aircraft must not enter an ATZ.

Aircraft that must operate in an ATZ for some reason other than taking off or landing, must conform with or avoid the traffic pattern in use, and they must broadcast their intentions on the designated frequency. NORDO aircraft may enter an ATZ **only** for the purpose of landing and taking off.

Reader Queries

Terminology

Q. "Does the reference to Control Areas at the top of page 5 refer to Control Areas being eventually phased out, or to the subdivisions like TMAs, UTAs, etc, being replaced? If the latter, I suggest the acronyms for the replacement terms align with the new terms to be introduced. To do so would contribute to enhancing air safety because it would enable pilots to recall more readily what the words stood for."



The Mandatory Broadcast Zone picture at bottom right of page 7 of Issue 7 was not intended to depict a righthand join for a lefthand circuit. Here is a revised version, with the emphasis clearly on position and intention reports and landing lights being on.

"Aviation abounds with acronyms, and what is often confusing is that a number of acronyms do not align with the words they stand for. For example, TMA for a Terminal Control Area instead of TCA? UTA for an Upper Control Area instead of UCA? Another example in the latest *Icarus* is TAF, which is an aerodrome forecast."

A. The TMA and UTA terms will be phased out, so that all Control Areas can be called CTAs. The reason some acronyms don't line up is that most of them are international (ICAO), and English is not the only language to be considered. We suspect that sometimes it is also recognised that acronyms need to be distinctive. For example, Coordinated Universal Time in English would be CUT.

IARAs

Q. "While the airspace article in *Vector* is good, I have queries about whether I've understood it correctly. This is where a seminar would help. Also, it would give a chance to expand on queries arising from the article. For example, why were Instrument Approach Restricted Areas (IARAs) done away with? Are Approach Conditional Areas as safe for IFR aircraft if VFR traffic can share the space? On the face of it, it suggests that the IFR pilot's work is increased, as a lookout is required in addition to the attention to instruments, in case a VFR pilot does not comply with the minimum meteorological conditions."

A. This change is only a change of name. The conditions (and therefore safety measures) are no different for the new Approach Conditional Area than for the old Instrument Approach Restricted Area. Some IARAs were deleted because the aerodromes did not have enough IFR scheduled movements (minimum of five per week) to justify Special Use Airspace.

Transponder Mandatory Airspace

Q. "In the latest issue of *Vector*, on page 6 you state that 'within transponder mandatory airspace, aircraft are required to have an operating transponder or the approval of ATC to enter without a transponder.' I was recently refused entry to UTA by a controller who informed me that he was not allowed to let me enter without a transponder. This is at variance with your published statement, so could you please tell me which is correct."

A. The transponder requirements are detailed in Rule Part 91.247. One requirement is that, if your aircraft is not equipped with a transponder, a request to operate in transponder-mandatory airspace must be made at least 30 minutes before the start of the operation. In this situation, controllers have discretion to allow an aircraft not transponder-equipped to enter transponder mandatory airspace, but this is normally exercised only when expected traffic allows. It would be most unlikely that VFR aircraft could enter a UTA without a transponder. The refusal reported by the reader was technically not a case of "can't" but rather "won't under the circumstances".

VFR Special Procedures Areas

A reader asked why VFR Special Procedures Areas were not included in the article. The reason is that VFR Special Procedures Areas are **not** prescribed under Civil Aviation Rule Parts 71 (Designation of Airspace) and Part 73 (Special Use Airspace), which is what the article was about.

Nevertheless, VFR Special Procedures Areas have certain recommended procedures, and it is important that pilots understand the relevance of, and the procedures for, these areas.

VFR Special Procedures Areas have resulted from the safety concerns and efforts of airspace user groups in various parts of the country. They have been instituted to enhance safety in these areas. They generally involve areas of high-density tourist scenic flying, although the most recent, the Canterbury VFR Special Procedures Area, is affected mainly by training operations plus local and transient traffic. The nature of recommended procedures within them varies, with the tourist areas having specific routing and reporting procedures, while the Canterbury area is simply a move to have all aircraft in the area on a common frequency. All aircraft should use landing or anti-collision lights if so equipped.

Some **former** VFR Special Procedures Areas have recently become Mandatory Broadcast Zones. A VFR Special Procedures Area, however, is **not** a Mandatory Broadcast Zone. NORDO aircraft **may** operate within aVFR Special Procedures Area. ■

Aviation Safety Coordinator Courses

Attention Chief Executives!

Several Aviation Safety Coordinator training courses are planned for May and June this year.

An Aviation Safety Coordinator runs the safety programme in an organisation.

This year the courses will be targeted primarily at commuter airlines, general aviation scenic operations, and flight training organisations. Sport aviation interests may be accommodated on some of the courses.

Does your organisation have a properly administered and active safety programme?

What Is an Aviation Safety Programme?

An aviation safety programme is a formalised and documented plan which focuses on creating safety awareness and reducing accidents. It achieves this through two primary functions, risk management and safety awareness.

The safety programme includes all activities carried out within an organisation in order to maintain and promote safe practices. Such activities will usually include a hazard identification system, an occurrence reporting system, and safety surveys. Awareness will be raised by seminars, videos, magazines, meetings, posters, etc. A good safety programme will stimulate good communication.

A safety programme is a very important part of sound professional work practices. Safety should be very much a part of all aspects of your organisation's activities.

A Safety Coordinator can advise and make recommendations – the authority and instructions for implementation must come from a management level. The success or failure of any aviation safety programme rests at that level.

The first step must be commitment by the top management to a safety programme.

Formal training of your Aviation Safety Coordinator can be provided by the CAA.

Why Have a Safety Programme?

The short answer is, "If you think safety is expensive, try having an accident!"

You may be insured for direct costs, but the indirect costs of an accident are many times greater (latest figures suggest 4:1). A safe operation could be critical to staying in business.

The benefits are many and include a safer operating environment for employees and passengers, a more cost-efficient operation, and a positive image leading to public confidence and business opportunities.

Action

Venues and dates are yet to be finalised. Possible venues are Queenstown, Nelson, Rotorua and Auckland. Confirmation of these or other venues will depend on interest shown. Please advise your interest in sending a suitable person from your organisation to be trained as an Aviation Safety Coordinator.

Enquiries to:

Pam Collings, Safety Education Adviser,
Civil Aviation Authority, P O Box 31-441, Lower Hutt
e-mail collingsp@caa.govt.nz.

LOW FLYING CAN KILL

Low Flying, even at legal heights, is dangerous

CAA

- **little or no margin for error**
- **lack of time and space to cope with the unexpected**
- **preoccupation with gazing or photography**

IT'S NOT WORTH THE RISK

Publications

0800 800 359 — Publishing Solutions, *for CA Rules and ACs, Part 39 Airworthiness Directives, CAA (saleable) Forms, and CAA Logbooks. Limited stocks of still-current AIC-AIRs, and AIC-GENs are also available. Also, paid subscriptions to Vector and Civil Aircraft Register.*

http://www.caa.govt.nz - CAA Web Site, *for CA Rules, ACs and Airworthiness Directives.*

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Accident Notification

24-hour 7-day toll-free telephone

0800 656 454

CAA Act requires notification "as soon as practicable".