

GASIL



General Aviation Safety Information Leaflet

www.caa.co.uk/gasil

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Mountain flying

The New Zealand CAA, in their magazine 'Vector', report an accident to a Piper Tomahawk which was conducting a dual navigation exercise at low level in hilly countryside. Apparently the student entered the wrong valley, and the instructor did not notice until the valley narrowed so rapidly that the aircraft could neither turn round nor climb above the hill top. Both occupants suffered serious injury during the collision with the terrain.



Some readers may remember a report in the [AAIB's Bulletin 9 of 1999](#). It concerns an accident to a Cessna 172 with an instructor on board which collided with terrain in the Welsh mountains, killing the three occupants. Flying along valleys below ridge tops may be exciting, but like everything else it requires careful pre-flight planning of the route and possible eventualities. It also requires accurate navigation and an expectation that the next bend could hide a dead (literally!) end.

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Fuel cocks

The article on fuel cocks in issue 7 this year was perhaps timely, as suggested by this letter from a reader.

“Last week (before reading GASIL) I was offered a flight in a Cessna 152. I do not have a PPL although I have flown solo in a Cessna 150 as a student over 30 years ago and the other pilot was clearly the pilot in command. Nonetheless I took an interest in the operation of the aeroplane and commented where I felt it might be prudent or helpful.

When it came to checking that the fuel cock was on I noticed that the pilot pointed to the pictogram on the floor (similar to the one pictured in GASIL) which shows the lever in the ON position but did not apparently check that the lever was ON. When I commented he said that he thought the lever was fixed ON in this aircraft. I doubted that, located the lever for myself by feel although it was out of sight from my seated position, and cycled the lever OFF and ON again to check that it was indeed ON. The pilot was surprised to discover that the lever was accessible and that it moved - he thought that the actual lever was hidden under the carpet underneath the pictogram!

I think I had better point out the article in GASIL to other pilots at our club!”

Emergency ADs

EASA produces [bi-weekly](#) summaries of the ADs they have issued or approved, which are available through their website www.easa.eu. [Foreign-issued](#) (non-EU) Airworthiness Directives are also available through the same site, as are [details](#) of all recent EASA approved Airworthiness Directives. CAA [ADs](#) for UK manufactured aircraft which have not yet been incorporated in CAP 747 can be found on the CAA website <http://www.caa.co.uk/ads>.

We are aware that the following Emergency Airworthiness Directives have been issued recently by EASA, the FAA and the DGAC; however, this list is not exhaustive and must not be relied on.

Number	Applicability	Description
EASA 2011-0180-E	Eurocopter AS332, EC225	Hoist cable
FAA E 2011-20-51	Pratt & Whitney PT-6A engines	First stage reduction sun gear
EASA 2011-0189-E	Eurocopter AS332, EC225	Intermediate gearbox fairing
EASA 2011-0192-E	Eurocopter AS355 NP	Engine fire extinguisher system
EASA 2011-0195-E	MDM-1 Fox sailplanes	Aileron control bell crank console
DGAC UF-2011-003	CNSK Dyn'Aero MCR Sportster	Flaperon control system

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Danger Areas

Recent occurrence reports include a number of instances of pilots flying into active Danger Areas while firing was taking place. While it is not always illegal to fly into a Danger Area, as the name suggests flight there is likely to be dangerous. It certainly will be when the military are firing weapons inside it! A transiting light aircraft may not be obvious to the person controlling the firing, who in any case has a limited amount of time to prepare our troops for service in war zones.

For those who would rather trust to fate than charts and NOTAMs, please note that bylaws prohibit access to and flight over parts of many of our published Danger Areas. The CAA may consider investigating pilots who fly into active Danger Areas for 'endangering' under Article 138 of the ANO 2009.



Take control!

Hopefully, instructors have read the articles we have published in recent issues on the subject. However, the consequences of taking over control late can be very serious. The BEA (French AAIB) has recently published a report into a fatal accident which occurred in 2005 to a Robinson R22 Mariner.

According to the report, an examiner was conducting a test on a PPL candidate. Having arrived in an area he was accustomed to use for the purpose, he apparently instigated a simulated engine failure. The investigation concludes that the student, who had little experience on the type equipped as it was with floats, did not react correctly and lost control of the helicopter. The rotor RPM reduced and, as frequently happens in such cases, the main rotor contacted the tail several times.

The investigation suggests that the examiner's delay in taking control to redeem the situation was because he knew that, in a test situation, taking control would automatically result in the candidate failing. The consequences of not taking control can be a lot worse!

Landing lights

SafetySense Leaflet 13, available as all such leaflets from the CAA's website www.caa.co.uk/safetysense, includes the advice that an aircraft showing lights is easier to see than one without. Landing lights can make a significant contribution to an aircraft's conspicuity, and where practicable we encourage their use, especially in conditions of poor flight visibility. Landing light filaments may burn out, but replacing the light is a small price to pay for increased safety!

Landing lights can be used by commercial operators for runway safety. Many aerodromes ask the crew to select the landing light ON only after they believe positive clearance to take off or land has been received; this allows ATC to spot possible misunderstandings and anticipate certain runway incursions. GA operators are encouraged to do the same, at least on departure.



However, the occurrence database includes several instances of switches overheating, although usually with little damage caused. As readers of the Occurrence Digest will have noticed, one such incident was reported recently. It seems the switch could not be moved from the ON position, and the circuit breaker could not be tripped manually. Because the aircraft was on final approach, the landing was completed normally before the battery master switch was selected OFF and the landing light circuit isolated.

Mode S

Mode S transponders are becoming increasingly common, and more ground radars are able to use the facilities they offer. However, as with any piece of equipment, it is important to study the manuals and understand what the equipment is capable of and how to use it properly.

There is a facility within a Mode S transponder which allows the aircraft to transmit an individualised response rather than the aircraft's registration. This Aircraft Identification Feature (AIF) means an airliner can have its callsign, such as "Panair 19", appear on the controller's radar screen. The AIF should be set if required on the ground before flight, and left. However if the AIF has been incorrectly programmed, it may be necessary to reprogramme it in flight, and we should understand how to do that if needed.

It goes without saying that messing around with the AIF to deliberately produce such incorrect codes is bad practice.

Hose sorry now?

A recent occurrence report concerns an Extra 300. It seems the valve pipe for the oil system's inverted change over facility collapsed, causing oil starvation and bearing damage. The material used for the hose, although apparently used by several similar aircraft for the same purpose, was unsuitable. We remind owners and engineers of the need to use correct parts and materials, and to check for possible incorrect ones.

Fog

The [AAIB's Bulletin 8 of 2011](#) includes a report of an accident to a Cessna Citation last year. The accident occurred during an ILS approach which the co-pilot was flying on instruments.

When the aircraft was 10 miles from touchdown, the radar controller broadcast a message advising of the presence of a fog bank on final approach. After landing clearance had been passed at six miles, the tower controller advised that there was a fog bank over the airfield boundary. The Runway Visual Range (RVR) at touchdown was reported as 1400 metres. The commander acquired visual contact with the airfield from some distance and then, during the later stages of the approach, he only had the second half of the runway in sight.



In 2001, we published an article in [GASIL no. 6](#), available like all new and back issues on the CAA website www.caa.co.uk/gasil. The article was written to explain the 'approach ban' now contained in Article 109 (4) of the Air Navigation Order 2009. It describes the reasons why shallow fog is a particular hazard which may only be apparent to the crew through a low RVR. Although in this case the RVR was reported as adequate, it seems the wind direction had recently changed, bringing the fog quickly onto the runway threshold just before the aircraft arrived at Decision Altitude. It is probable that, as the aircraft entered the arriving fog bank, the crew would have experienced similar effects to those described in the earlier article.

However, the synopsis of this accident report states that "The aircraft descended below the Decision Altitude without the crew having achieved the required visual references". Even, or perhaps especially, if the conditions are unexpected, Decision Altitude is exactly that. As with any problems on final approach, if things aren't right, go-around!

CAA Regional Offices

Many readers will be aware that the North East and Midlands Regional Office of the CAA's Survey Department is shortly to merge with the Manchester Office, forming a single region. That merger will take place on 17 October. The new region encompasses both the areas shown in GETMET 2009 page 29, and the telephone numbers shown on that page for the Northeast and Midlands office will no longer be used.

Sod's law

Engine failures are not common, but they do occur, and pilots must be familiar with, and practise, the necessary actions if one were to occur. As we have pointed out recently, such practice must be carried out with care, especially during critical phases of flight, and with competent instructors who can cope with any errors by the handling pilot.

However, the instructor also needs to be ready for the simulation to turn into reality. Practice forced landing patterns have turned into real ones when the engine failed to accelerate during the intended go-around, and a real engine failure during a practice asymmetric go-around requires very fast and correct reactions to adjust power and rudder inputs. Last month's Occurrence Digest includes a report of such an engine failure in a twin Squirrel during a rejected take-off exercise. Be prepared!

Airspace Infringements

We draw everyone's attention to a comment in an occurrence report listed in last month's occurrence listing, referring to the pilot of an aircraft which infringed Controlled Airspace: "He notes that he should have performed more planning".

It may not be the obvious!

The Cessna 150 was in cruising flight approaching its destination when the engine started to run roughly. Conscious of the type's propensity to carburettor icing and despite having operated the hot air system at regular intervals throughout the flight, the pilot selected full hot air once again. The subsequent disappearance of the vibrations supported the diagnosis.

On the final approach, with hot air selected, the roughness returned. Having vacated the runway and selected carb heat to COLD, the engine stopped, and would not restart until a considerable time had elapsed. A magneto check then caused it to stop again.

It appears that the engineers could not replicate the fault, and put the problem down to carburettor icing. However, another magneto check before take-off produced another engine stoppage, and eventually we believe the cause was traced to faulty magnetos, one of which had failed and the other was failing.

This is not the only instance of apparently intermittently faulty magnetos we have been made aware of. While the most obvious cause of a problem should be the first thing to be checked, do not discard other possibilities.

It's a clean machine (or is it?)

This is taken from a flying club's notice board, but seems pretty valid to us.

Ten Reasons for Cleaning Your Aircraft after Flight

- 1) It complies with Club Rules (and the manufacturer's maintenance instructions).
- 2) Flies on the leading edges will reduce performance and increase fuel consumption. Have you ever seen a dirty glider or a dirty aerobatics competition aircraft?
- 3) Dead flies on your propeller can significantly reduce your rate of climb.
- 4) The aircraft that's going to hit you stops in the same position on your windscreen. So do dead flies. The difference between the two may not become apparent until too late. Have you ever known of a fighter ace taking off with a dirty windscreen?
- 5) New minor cracks and abrasions, damaged cowling fittings, hydraulic leaks etc. often get missed on a quick pre-flight walk round. They're hard to miss while you're cleaning.
- 6) If an aircraft's put to bed spotless, it means any oil and hydraulic tracks have appeared since then and need to be investigated.
- 7) If you know what scratches were on the aircraft when you left it, no one can finger you for damage you didn't commit.
- 8) The Club needs new students to keep going. No newcomer wants to climb into a dirty aircraft.
- 9) If you're prepared to walk away leaving your aircraft dirty, what else are you prepared to walk away from?
- 10) It should be a matter of personal pride to leave the aircraft at least as clean as you found it.

Full Authority Digital Engine Control

The [AAIB's Bulletin 8 of 2011](#) includes a report of an accident to a diesel-engined PA 28 which suffered a failure of the engine reduction gearbox and made a forced landing in a field. The failure was attributed to a loss of oil from a cracked union on the gearbox oil cooler, which had been caused in turn by a cracked oil cooler mounting bracket.



Pilots of aircraft equipped with such engines are used to the engine monitoring system carrying out the pre-take-off power checks automatically and providing warnings when inconsistencies appear which could be evidence of an unserviceability. These warnings can also be expected when problems occur during flight. However, it seems that in this case the only indication to the crew that their engine was doing anything untoward would have been a higher than normal rpm indication during the take-off and climb.

Human factors may lead us to rely too much on automation, especially if the system seems to look after itself. However, as the report suggests, pilots who monitor engine indications during a climb can provide early warning of problems, even in an aircraft with apparent automatic monitoring systems.

Care of passengers

The side window of a Bell 206 fell from its mounting during the cruise. The report suspects that a passenger inadvertently operated the window with lack of care, causing the window to dislodge from its runners.

SafetySense Leaflet 2 is available like all such leaflets from www.caa.co.uk/safetysense, and gives advice on 'Care of passengers'. Passengers require careful briefing and monitoring, and should be warned not to move anything without checking with the pilot during a quiet period. However, it is also important that anything which might become dislodged in flight is left strictly alone. More importantly, it should be properly secured before flight!

Wake turbulence

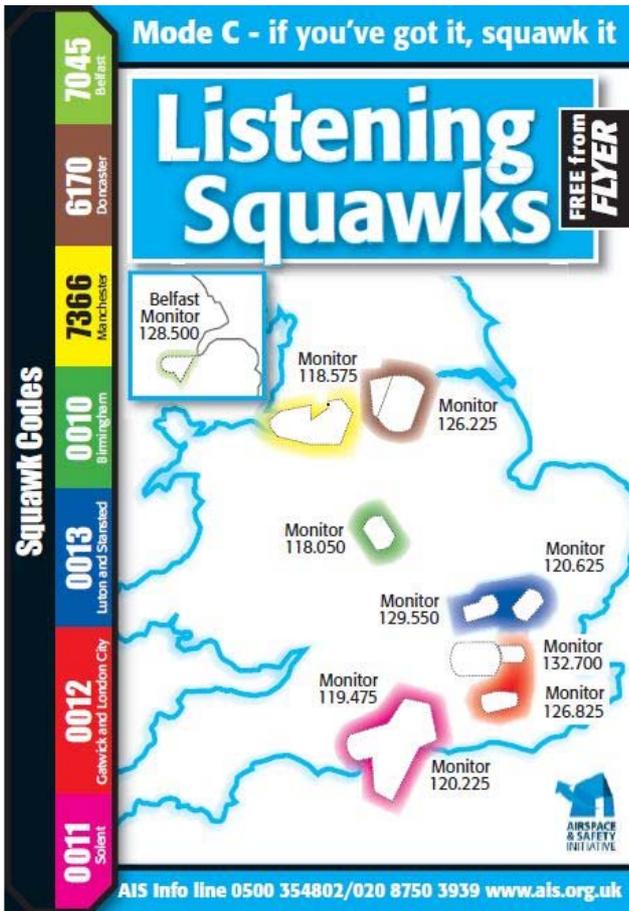
In their magazine 'Vector', the New Zealand CAA report an accident to a flexwing microlight which was landing shortly after an aeroplane took off. The aeroplane was apparently close to its maximum take-off mass of 2924 kg which placed it in the 'light' wake turbulence category. As the microlight pilot was landing he apparently lost directional control and while attempting to go-around his microlight struck a rocky outcrop, causing him minor injuries.

AIC P [072/2010](#), and SafetySense Leaflet [15](#), 'Wake vortex', which is available free for download like all such leaflets from the CAA's website www.caa.co.uk/safetysense, provide guidance on wake vortices and how to avoid them. The leaflet includes the advice that microlights and very light aircraft are more susceptible than other GA aircraft to the effects from wake vortex, and that pilots of microlights should consider treating every aircraft in front of them as being one category higher than listed in the AIC.

Full and free?

As reported in last month's Occurrence Digest, the pilot of a Bell 412 noticed that newly fitted seat cushions seemed to be interfering with the collective lever. It is not only new equipment that can interfere with controls, but this incident highlights the importance of the 'full and free' control check which should be carried out in every aircraft as part of the pre-take-off vital actions.

Listening-out squawks



Many of us are highlighting our position by selecting the published 'listening out' transponder code when near controlled airspace but unable or unwilling to make two-way contact with the controlling authority. These codes are published on the flyontrack website www.flyontrack.co.uk. This should allow the controller to make contact with us if he or she wishes to obtain further information or give advice.

However, the 'listening out' codes are not a lot of use if the pilot does not actually listen on the frequency and respond when the controller calls. Last month's Occurrence Digest, published on the web with GASIL, includes two instances of controllers being unable to contact pilots who had selected the 'listening squawk'.

One problem may have been the fact that two frequencies are sometimes published for the same squawk with the apparent intention of having aircraft approaching the airspace from one direction using one and those from the other direction using the other frequency; the picture on the card may allow misinterpretation, so the written description should be consulted. However, we must not select the squawk until we have selected the frequency, and we must deselect the code before leaving the frequency. We must also make sure the radio volume is high enough to hear any transmissions!

CAA Safety Evenings 2011

As last winter, the organisation of this winter's GA Safety Evenings has been taken over by GASCo, the GA Safety Council, to which the CAA is a major contributor. The evenings are of value to everyone involved in general aviation, whatever they fly, operate or maintain, and logbooks will be signed when requested as proof of attendance.

Currently a number of events planned for the next few months are awaiting final confirmation. However, the ones listed here will take place on the dates shown, and further information including organisers' contact details are in GASCo's Flight Safety Bulletin, which contains the hard copy of GASIL. For updated information, including all the other evenings as they are confirmed, see the CAA website www.caa.co.uk/safetyevenings. Organisations wishing to host a safety evening in future should contact GASCo on 01380 830584 or by e-mail to ce@gasco.org.uk.

<u>Date</u>	<u>Area</u>	<u>Venue</u>
14 November	Biggin Hill	Passenger Terminal
15 November	Lashenden Headcorn	Staplehurst Village Hall
16 November	Manston	TG Aviation
17 November	Panshangar	North London Flying School
21 November	Dorking	The Punchbowl Inn, Oakwood Hill, Ockley
13 March	RNAS Yeovilton	tbc