GASIL

General Aviation Safety Information Leaflet

www.caa.co.uk/gasil

Issue no 1 of 2010

A mathematical problem

Your aircraft's usable fuel is 89 litres. When you refuel it after flight, 88 litres transfers from the bowser into the tanks. How close were you to losing your engine on the final approach, and what would you have done about it?

Exactly that situation occurred recently. It seems the pilot had not had a suitable measuring device available before flight, and so instead of dipping the tanks he relied on the gauges. Working from the indications and the fuel consumption he had experienced in another example of the same type, he carried out the flight in question.

Unless it's not possible in your own aircraft type, in which case use all available information, dip the tanks!

Emergency ADs

EASA produces bi-weekly summaries of the ADs they have issued or approved, which are available through their web site 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 web site www.caa.co.uk > Safety Regulation > Operations & Airworthiness > Airworthiness Directives

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

Number	Applicability	Description
EASA 2009-0241-E	Eurocopter SA365 & AS365	Vertical gyro unit data output
EASA 2009-0274-E	Agusta 109 series	Main rotor scissor fitting assembly
EASA 2009-0275-E	Eurocopter AS 332 & EC 225	Intermediate gear box fairing gutter
EASA 2010-0009-E	Buchstein/Hermesdorf Gbr T014, T204	Emergency parachutes

Mandatory Permit Directives

The following Mandatory Permit Directives (MPD) have recently been issued by the CAA. Compliance is mandatory for applicable aircraft operating on a UK CAA Permit to Fly. MPDs can be found at www.caa.co.uk/mpds MPDs will remain on the website and be available for download until they are published in CAP 661, Mandatory Permit Directives, after which time they will be removed. CAP 661, will continue to be published twice a year in January and July and can be found at www.caa.co.uk/cap661

Owners of aircraft with Permits to Fly and their Continued Airworthiness Managers should register to receive automatic email notification when a new MPD is added to the website. To register for the free publications subscription service, please go to www.caa.co.uk > Publications > Subscriptions > New User Subscription Registration, and choose the 'Safety Critical Information' category.

2009-009	Fire Fighting Enterprises	Portable Halon 1211 fire extinguishers
2009-010	Aerotechnik EV-97 Eurostar	Airspeed limitations
2009-011	SICLI (General Incendie) H1-10	Portable Halon 1211 fire extinguishers

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Heating systems

In 2001, a light aeroplane crashed in Essex, killing the two persons on board. The AAIB concluded that the crew had been subjected to carbon monoxide poisoning, which had rendered them incapable of flying the aircraft. The gas had apparently leaked from a cracked exhaust manifold.

The aircraft did not carry any detectors to warn of the presence of carbon monoxide and there was no requirement to do so. There have been few incidents reported in recent years of exhaust gas leaking into light aircraft cockpits, and fortunately in nearly every case the gas was detected by a device. However, the lack of reports should not be allowed to lull us into a false sense of security. A minor fault in a heating system may allow enough exhaust gas to enter the cockpit to incapacitate the occupants within minutes. It is essential that we know, and are prepared to use, the drills to minimise such contamination in our own aircraft. These usually involve switching off any cabin heating system, ventilating the cockpit, and preparing to land as soon as practicable – but with care, because even a mild CO contamination will affect our brain and therefore our ability to fly accurately.

Preventive maintenance is of course the primary method of preventing such a hazard. However, it is also important to carry a device which can detect the presence of the colourless and odourless carbon monoxide early, and check it frequently. Many devices, such as that illustrated, have a relatively short life, so ensure they are replaced regularly. If you use a battery powered one, check the battery state!

Light Aircraft maintenance programme

CAP 766 and 767 contain the generic light aircraft maintenance programmes for those light aeroplanes and helicopters respectively which are subject to European regulations. However, these generic programmes must be modified to take account for the manufacturer's requirements for each individual aircraft.

AIRCOM 2009/18, available through the CAA's web site www.caa.co.uk/airworthiness and 'continued airworthiness', has recently been issued to provide guidance on a suitable process to make the necessary modifications to the generic programmes for individual aircraft. Owners and maintenance organisations are encouraged to review their maintenance programmes annually, following the advice contained in the AIRCOM.

UK Airprox Board – sorry!

A typographical error appeared in our article on the UK Airprox Board in issue 10 of 2009. Their e-mail address has not changed, and they may be contacted at either : ops@ukairproxboard.org.uk or admin@ukairproxboard.org.uk

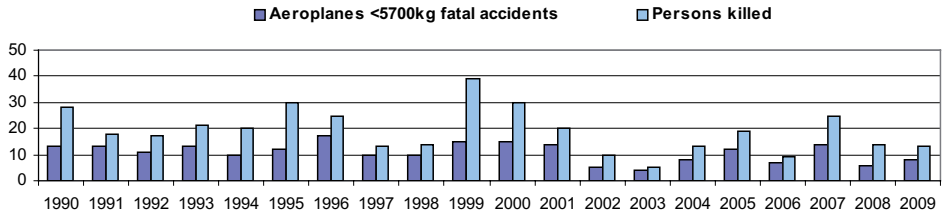
Fatal GA accidents 2009

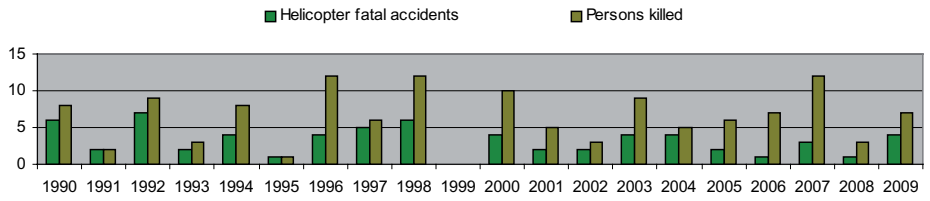
There were 8 reported fatal accidents, involving 13 fatalities, to UK registered civilian operated light aeroplanes during the year, including one to a microlight with 2 fatalities. 4 fatal accidents were reported to UK registered light helicopters, involving 7 fatalities. There were 3 glider fatal accidents, and 2 (including one which is unlikely to be recorded as an aircraft accident) involving gyroplanes. In addition, there were 2 mid-air collisions involving military operated civilian registered light aeroplanes, in which 6 persons were killed, and another collision, this time between 2 paragliders, resulted in a further 2 deaths.

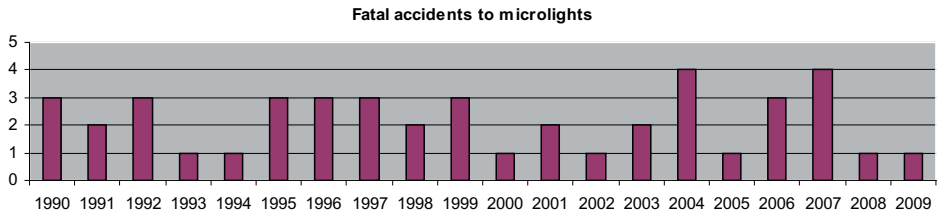
The list below includes military operated and non-UK registered aircraft (2 accidents with 3 fatalities) for completeness, although the graphs do not. Since few of the investigations have been completed, it would be inappropriate to draw too many conclusions from the information. However, while poor weather continues to feature in the initial reports, losing control at low altitude appears the most common type of accident. Attempting to turn back after take-off following an engine problem has again been shown to be dangerous, and we are reminded that care is required when manoeuvring to avoid a possible collision. Maintaining the correct airspeed for the conditions and phase of flight is vital!

The AAIB's web site www.aaib.gov.uk will include reports on all current investigations as they are concluded. We intend to continue to emphasise particular lessons to be learnt from these accidents in future issues of GASIL.

Date	Type	Reported Circumstances
2 Jan	PA 28	Probably lost control during low aerobatics – 3 fatalities
11 Feb	2 x Grob Tutors	Mid air collision – both military operated – 4 fatalities
14 Feb	Robinson R22	Single selected magneto failed – rotor RPM reduced – student fatality
21 Feb	Homebuilt Sparrow	Engine problems after take-off – entered spin turning back
9 Mar	Rotorsport autogyro	Collided with pedestrian on ground – under police & AAIB investigation
4 Apr	Escapade 912	Spun in circuit area manoeuvring to avoid another aircraft – 2 fatalities
5 Apr	Robinson R44	Crashed on landing in France. Under investigation – 3 fatalities
10 Apr	PA 28	Collided with trees in low cloud (N reg). Under investigation – 2 fatalities
24 May	CASA I-131	Struck telephone lines during forced landing. Under investigation
31 May	SZD Standard Jantar	Probably rotated too rapidly during winch launch – lost control
12 Jun	Jodel DR 1050	Under investigation – 3 fatalities
13 Jun	Grob Astir CS77	Believed to have stalled. Under investigation
14 Jun	Grob Tutor	Mid air collision with glider – military operated, under investigation – 2 killed
27 Jun	Taylor Monoplane	Apparently spun returning to airfield after problem. Under investigation
8 Jul	Provost T1	Reports of fire. Under investigation
9 Jul	SH Discus B	Under investigation
8 Aug	2 x Paragliders	Entangled after mid air collision, under investigation - 2 fatalities
22 Aug	Zivko Edge 540	Crashed during aerobatics (N registered)
20 Sep	Nord NC 854 S	Crashed in field and destroyed by fire, under investigation - 2 fatalities
22 Sep	Schweizer 300C	Crashed after reported power failure - 2 fatalities
11 Oct	Bensen B8 MR	Lost control during circuit
8 Nov	Taylor Titch	Crashed into a ditch, under investigation
15 Nov	Robinson R22	Under investigation







Military Civil Air Safety Day

All pilots and others involved in General Aviation are invited to attend a Military/Civil Air Safety Day at RAF Lyneham on May 19th. Those who wish to attend should apply on the form at www.caa.co.uk/mcasd, where a poster is also available.

Differences training

The AAIB's bulletin 11 of 2009 includes a report on an accident to a 3 axis microlight. It seems the pilot, who had considerable previous experience on flex-wing aircraft, applied an incorrect control input when flaring to land, causing minor injury to himself and serious injury to his passenger.

The report suggests that the Air Navigation Order required the pilot to have undergone differences training with a flying instructor in order to fly 3 axis aircraft in addition to the flexwing types on which he had obtained his recent experience. However, he had experience in the past on 3 axis aeroplanes, which would appear to have fulfilled the ANO requirement.

Nevertheless, the accident highlights the importance of maintaining recency in the type of operation being undertaken. The differences between flex-wing and 3 axis handling are considerable, and whether or not one fulfils the legal requirements, we continue to strongly recommend that if a pilot wishes to do something with which he is not in recent practice, that he obtain the services of a qualified instructor to regain his currency.

Lights

A reader has admitted a recent error which could have had serious consequences. He was making an approach to an aerodrome with which he was unfamiliar in order to maintain his night currency. The approach slope indicators showed a correct approach path, and he touched down shortly after the line of lights indicating the near end of the runway surface. Only later did he notice the green light pairs further into wind on each side of the white runway edge lights, and realise that these green light pairs marked the displaced threshold! He had landed short of the threshold, but fortunately without touching an obstruction in the process.

The line of lights placed across the runway strip he had assumed were threshold lights were actually RED. The pilot states he cannot explain why he thought that a line of red lights could possibly indicate a threshold (such a line is supposed to indicate the runway end). He is not colour blind. However, because the red line and the two white runway edge lines formed the shape of the runway he expected to see, he assumed the first line was the threshold, and proceeded to land there.

CAA comment

Careful study of the aerodrome chart in the AIP or a commercial flight guide would have shown the pilot that the threshold on the runway in question was displaced, and he should have been looking for the lights marking that displaced threshold.

A reminder for subscribers

While GASIL remains available for downloading free of charge from the CAA's web site www.caa.co.uk/publications , many people who do not receive free copies prefer to pay a subscription in order to receive their own 'hard' copy. For those who do prefer to subscribe, we would like to remind you that the current subscription period expires with this issue, and in order to receive future copies it will be necessary to send your annual subscription (£16 UK and £24 overseas) to the address at the bottom of page 2.

Frost and wings

Our article in the last issue on winter flying should have been a useful reminder about the major possible hazards, and encouraged pilots to read SafetySense leaflet 3 "winter flying" which like all SafetySense leaflets is available for free download from the CAA's web site www.caa.co.uk/safetysense. Helicopter operators can find specific advice in FODCOM 42/2008, available at www.caa.co.uk/fodcoms.

An article in the FAA's magazine "FAA Aviation News" concentrates on the hazards of attempting to take off when the aircraft surface is contaminated with frost, ice or snow. It includes the following information:

"All airplanes (sic) are susceptible to the effects of ground icing; however, small airplanes are generally more vulnerable than large airplanes. High-wing airplanes account for two thirds of general aviation take-off accidents, perhaps because the upper wing is more difficult to see and reach on pre-flight. Pilots of high-wing airplanes should make sure they have the means, e.g. a stepladder, to access the upper wing during pre-flight when ground icing may be a factor."

We concur wholeheartedly with that advice, including the point about the stepladder. While pilots may be used to climbing on the aircraft structure to check fuel contents etc., icing conditions may make such climbing dangerous. We would however remind pilots that other difficult to access areas need careful inspection, such as high tails and helicopter rotor blades!

If you don't understand . . .

A fatal accident report in a bulletin by the BEA (French AAIB) contains the statement that the pilot involved considered he 'did not have the knowledge to interpret the published weather forecast'.

There may be some parts of the PPL ground training syllabus which can be argued to be 'a bit over the top'. However, even though it may appear a little complicated, weather forecast interpretation is not one of them. These forecasts are there to provide information which is vital to our safety. If you don't understand, get some proper instruction; and try to learn as much about weather as you can. Take advantage of Met seminars and club lectures.

Magneto switching – not for everyone!

We are grateful to the many small helicopter operators who pointed out that the advice given in article on the front page of the last issue (11 of 2009) only applies to aeroplanes! We reminded aeroplane pilots that one possible cause of a rough-running engine might be a faulty magneto, which could be isolated by earthing each magneto in turn.

However, in a piston engined helicopter, the effect of losing all ignition (a distinct possibility if the serviceable magneto is switched off) would be to cause a most unwelcome and dangerous reduction in rotor RPM when the engine stops.

Everyone can make mistakes!

In a recently published report from the BEA (French AAIB) we read of the crew of a Rallye who experienced an engine failure as they turned onto base leg. The instructor considered it was not possible to land on the runway and the aircraft was landed safely in a field.

It seems the instructor had noticed during the pre-flight checks that the left tank contained very little fuel, a fact confirmed by the fuel gauges, which also confirmed the visual indications of the right tank being almost full. He had therefore selected the right tank for the flight in question.

The aircraft had recently undergone maintenance on the fuel system following a fuel leak. The investigation discovered that the internal cam which blocked off the unwanted fuel line in the fuel selector had been replaced 180 degrees out. Selecting left tank on the lever was actually supplying fuel from the right tank and vice versa, as shown in the [pictures.

While we would hope that an engineering organisation's procedures would detect such errors, everyone can make a mistake. We frequently remind pilots to be extra careful in their pre-flight checks following an aircraft's return from maintenance, and to be prepared for things to go wrong. Anything unusual should be double checked.

GA Safety Evenings

The last of this winter's programme of safety evenings have been arranged and are listed below. Details of these, and others as they are arranged, are on the CAA's web site www.caa.co.uk/safetyevenings.

All pilots and others associated with General Aviation are strongly encouraged to attend an event in their area. These start at 7.30 pm and last just over 2½ hours including an interval. In addition to the main speaker, guests with expertise on associated aviation subjects frequently assist, and those attending have the opportunity to win prizes donated by generous sponsors. Although the emphasis may be slanted towards the host organisation, the content is relevant to all forms of general aviation.

Date	Area	Venue	Telephone
02/03/2010	Seething	Clubhouse	07976 661784
04/03/2010	Gransden Lodge	Cambridge Gliding Club www.glide.co.uk	07801 398 714
09/03/2010	White Waltham	West London Aero Club	01628 823272
11/03/2010	Bristol Filton	BAWA BS34 7RG	01454 326745
15/03/2010	Turweston	Airfield conference room	01280 701167
18/03/2010	Haverfordwest	Rosemarket Golf Club SA73 1JY	07545 350294