

GASIL



GENERAL AVIATION SAFETY INFORMATION LEAFLET

The CAA Accident Prevention Leaflet

Issue no 4 of 2008

Flight under controlled airspace

Further to our article in the last issue entitled "Maintaining altitude", we have been reminded that the hazards associated with commercial airliners flying 500 feet above the base of a Control Area are not restricted to collision risks. As described in SafetySense leaflet 15, the wake vortex from a heavy airliner, perhaps at low speed and high angle of attack, descends behind it and may continue to present problems to light aircraft a considerable distance below its flight path. It is considered that the wake of an aircraft such as the A380 may present serious problems as much as 1000 feet below its flight path.

While chance would normally be expected to keep us away from the problem, if we see or hear a large aircraft flying above and ahead of us, we should be aware of the possible hazard.



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Fan Stop

In a report contained in the AAIB's bulletin 9 of 2008, we read that the pilot of an aeroplane which had suffered an engine failure after take-off "transmitted a 'Fan stop' call".

The expression "Fan Stop" is not contained in CAP 413, but has been traditionally used by military aircraft which are practising engine failure after take-off drills to inform others that the event is a PRACTICE. While

it is perfectly natural for a pilot who experiences a real engine failure to make the transmission which has used frequently in the past, we wish to point out that if a pilot does use the expression in the event of a real failure, air traffic service personnel and the emergency response teams are unlikely to take any of the actions they ought to for a real emergency. The words "Mayday, mayday, mayday" should produce no such confusion!

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.

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

<u>Number</u>	<u>Applicability</u>	<u>Description</u>
EASA 2008-0162-E	Eurocopter SA330, AS332	Main rotor blade de-icing system
FAA 2008-18-52	MD 500N, 600N, 900	Yaw stability augmentation system
EASA 2008-0177-E	Eurocopter EC 120 B	Emergency flotation gear lighting
EASA 2008-0186-E	Stemme S10, S10V	Engine fuel lines

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After the engine failed . . .

An AAIB [report](#) in their bulletin 8 of 2008 describes an accident to a twin-engined parachuting aircraft which suffered an engine failure after entering icing cloud. The aircraft was damaged when it over-ran the grass runway.

Although we may not find ourselves in exactly the same situation, we should consider the following part of the report: “The pilot was quite candid in stating that he should have diverted to a more suitable airfield, but his mindset at the time. . .was to land as soon as he could.”

Tell someone!

The pilot of a twin-engined aeroplane was cruising at 2400 feet. He was approaching a sector of controlled airspace with a base of 1500 feet. Just before he started his planned descent to remain outside that airspace, he experienced a serious problem with one of his engines which required his attention. By the time he had managed to solve his engine problem, he had entered the controlled airspace without clearance. Fortunately, his transponder was set to ALT and the Air Traffic Controller was able to direct traffic around him, albeit in rather a rush.

When asked whether he had declared an emergency, the pilot responded that he had one serviceable engine and expected to regain full use of the other one after completing the necessary drills. However, if he had declared an emergency, or even just selected 7700 on his transponder while he attended to the problem, the controller would have instantly been made aware that the aircraft was likely to do something unexpected, giving much more time to organise avoiding action.



New TAFs

Although the original information was published some time ago, it is probably worth reminding readers that with effect from 5th November, only one TAF will be published for each aerodrome in the UK. Major aerodromes such as Manchester will no longer have 9 hour TAFs published. 9 hour TAFs are

re-issued every 3 hours. The 30 hour or 24 hour TAF will be re-issued every 6 hours, and will be amended if required. As described in [GETMET](#), obtainable for download from the Met Office web site, the format will also change to include the date with every reference to time within the forecast.

Flapping

The AAIB's bulletin 8 of 2008 includes two instances of aircraft attempting to climb after balked landings. On both occasions the pilot had selected the flaps from FULL to UP in a situation when the flight manual advises that the flaps be selected to HALF. On both occasions the reduction in lift from the flaps retracting fully seems to have caused the aircraft to sink and collide with an obstruction on the ground.

The correlation between lift and drag as flap position changes varies from aeroplane to aeroplane. However, for many aircraft, the additional lift provided when the flap is in an intermediate (often called "take-off") position is needed to allow it to climb at the low speeds associated with a go-around. In many cases, the reduction of lift can be demonstrated by an instructor (at a safe height). The trim changes resulting from flap movement are also likely to be less when selecting the intermediate position than when selecting UP.

In many aeroplanes, use of the flap selector is not instinctive, in which case

careful attention needs to be paid to that use during the familiarisation or differences training which is required on a new type or variant. Pilots must be able to move the flap selector to the appropriate position during a go-around without having to take their eyes away from the pitch attitude which should be the primary focus of their attention (although finding the selector may require a glance in that direction, as will checking that it has moved correctly). If the type has no detent in the flap selector, positively identifying the lever position by feel, or counting the time taken for the flap to move to the appropriate position, should be included in the checks carried out after starting or before take-off.



Control restriction - Yak 52 modification

The CAA has recently published a Mandatory Permit Directive requiring the fitment of a barrier on the rear cockpit floor of Yak-52 aircraft to prevent loose articles jamming the elevator and aileron controls. Further details of this minor modification, which is to be carried out before 6th December 2008, are contained in MPD 2008-005.

While the MPD is aimed at Yak 52s, it is likely that the problem which led to this Directive may apply to several other aircraft. Pilots are reminded to take particular care to ensure that the harness of an unoccupied seat cannot interfere with the controls, especially if they intend carrying out manoeuvres which may cause that harness or parts of it to move.

Fog

The article entitled "Condensation" in the last issue was intended to warn of the dangers of flight when fog was likely to form. To emphasise that article, and the fact that fog and its clearance is particularly difficult to forecast, a report from the BEA (French AAIB) describes a pilot of a Reims Cessna 152 who was unable to land at either his destination or an alternate aerodrome because of fog. When his fuel ran out and his engine failed above cloud, he was fortunately able to see the ground and make a forced landing without injury, although the aircraft suffered minor damage to its undercarriage.

It seems the TAF for his destination on the November morning in question was as follows "32003KT 6000 BKN010 TEMPO 0608 1800 BR BKN003 BECMG 0810 SCT013". However, the area forecast indicated widespread low stratus with a base between 500 and 800 feet amsl, and the airfield elevation was 381 feet.

As he approached his destination above cloud, he decided that conditions were

not suitable to continue, and requested assistance from the appropriate Flight Information Service while heading towards a nearby major airfield. However, the controller informed him that airfield was still in the fog which had been present and reported as such all morning. After attempting again to reach his original destination and descending through a hole in the cloud only to find visibility totally unsuitable, he asked for guidance towards the major airfield which was by now reporting a cloudbase of 300 feet. However, before reaching it his fuel was exhausted.

Apart from commenting on the fact that the aircraft had taken off with less than full fuel (which in a 152 may have been for weight and balance reasons), the investigation notes that the pilot's passenger had an "important meeting" at the destination aerodrome. That is sadly all too often the reason for flight into unsuitable conditions which leads to a fatal accident, but fortunately not the case on this occasion. Better to arrive late than DEAD on time.



Where's the fuel?

In an accident report from the BFU (German AAIB) we read of a Beech 36 which apparently lost power on the final approach to an aerodrome in Germany. During the ensuing forced landing the aircraft collided with two trees, killing the pilot and seriously injuring his two passengers.

The investigation discovered that the fuel cock was selected to the left tank. There was no evidence of spilt fuel at the accident scene, and the right tank was found to contain 85 litres of fuel. However, the contents of the left tank were measured at $\frac{3}{4}$ of a litre.

CAA Comment

Engine failures at low heights allow little time for problem solving, but fuel management is an essential part of flying. Different instructors suggest different ways of equalising fuel use and tank contents, such as selecting left tank when the minute hand of the clock or watch points to the left side of its face and vice versa. However, every pre-landing check must include positively selecting the fuel cock to the fullest tank.

More on downwash

Further to our recent articles, we have been reminded that gyroplanes may also be seriously affected by helicopter rotor downwash. It has been pointed out that relying as they do on the upwards flow of air through their rotor discs to generate their lift, and disturbance to that upwards flow, such as that induced by a powerful rotor downwash, might have catastrophic effects.

Yet another reason to watch where our disturbed air is going!

How many times . . .

Some of us of a certain age will remember a protest song which started with these words. As a reader of accident reports, the editor often finds them coming to mind.

"The aircraft landed long on wet grass with a tailwind component" is a sure prelude to "the pilot was unable to stop the aircraft running through the boundary fence". How many times. ?

But let us not cast stones. Whatever we may believe with regard to an individual case, it can happen to anyone. Human

factors such as tiredness, stress, peer pressure or just plain lack of concentration can put any of us in a similar situation. Self-discipline (such as always joining overhead and checking the windsock as well as the traffic in the pattern before descending) can reduce the chances of it happening to us, as can a positive expectation that "we shall make mistakes". A personal 'safety management system' involves working to reduce not only the chances of making these mistakes but of reducing their effect. That is our job as aircraft commanders.

Altimeter serviceability

In the last issue we reminded pilots of the need to maintain altitude accurately especially when flying under or over controlled or restricted airspace. As we mentioned, one of the factors affecting the accuracy of our altitude maintenance is that of the altimeter and its static system.

Altimeters and other pitot-static instruments are required to be checked periodically in accordance with the approved maintenance programme. This will ensure that the drift that occurs in altimeter indications over time, a function of the internal deterioration of components, is captured when the declared tolerances are exceeded. In IFR equipped aircraft these tolerances may be more tightly controlled, but the need to be aware of potential failure in between scheduled checks is important for any class of operation.

We ought to be checking for zero against the set QFE before take-off to provide a datum point, checking between two altimeters set to the same pressure setting before take-off for comparison (both of these usually within 50 feet), and monitoring the altimeter indication during the initial stages after take-off for sluggish or jerky operation. All of these checks provide valuable indications if the altimeter or static system is developing problems.



GPS Approaches

The first fully approved RNAV non-precision approach using GPS will almost certainly have been published when this issue appears. Pilots with an instrument qualification whose aircraft and instrumentation complies with the requirements in CAP 773, will be able to make these approaches to Shoreham in IMC.

In CAP 773, and in GASIL some time ago, we have warned instrument pilots that certain GPS displays have been set up to provide range indications to each individual 'step-down fix' along the approach, rather than the indication of range to touchdown (or missed

approach point) the pilots would normally expect on a DME display during a more traditional non-precision approach. Although it is hoped that such indications will be removed from the databases, they are still possible, and pilots should not be surprised by them.

Whether the 'step-down fixes' are indicated on displays during an approach or not, and no matter what navigation aid provides the directions, the pilot is responsible for ensuring that the aircraft does not come below the safe altitude marked on the chart at each stage of the approach, as we pointed out in the last issue.

Fuel

In the engineering section of the last issue we drew attention to a report from the Irish AAIB concerning an accident to a Schweizer 300 CBI. While the investigation concluded that the shortcomings in the maintenance programme were not a factor in the accident, it did point out that the issue had invalidated the C of A.

The investigation assessed the cause of the accident, in which the pilot and

passenger were both injured, to be that “the engine stopped as a result of no fuel remaining in the helicopter’s fuel tank”. It also concluded that the helicopter flared too high at the end of the subsequent autorotation, which in turn resulted in heavy impact landing, and caused the injuries to the occupants and the extensive damage to the helicopter. It also found that the low fuel warning light failed to illuminate as the contents reached a critical level.

CAA Comment

It may be that some helicopter pilots think they can land almost anywhere, so they do not worry unduly about their fuel consumption. However, safe landing areas are not always instantly available, and as this accident demonstrates, making a safe landing from an autorotation is far from easy. Don’t let yourself get into a similar situation!

“Unweather”

German dictionaries include the word “Unwetter”. The word was used in a BFU (German AAIB) report describing weather conditions in the vicinity of an aircraft fatal accident in hilly countryside. The word itself means “storm”, but it did seem particularly apt in the particular situation prevailing of 50 knot winds, heavy rain and hail, with thunder and hill fog.

As with many accidents which occur in such weather conditions, the investigation found no pre-existing mechanical defect with the aircraft,

which had collided with trees while still apparently under power. However it did note that the accident site was just over a mile away from the aircraft’s planned destination.



GA Safety Evenings

<u>Date</u>	<u>Area/airfield</u>	<u>Location</u>	<u>Organiser</u>	<u>Phone</u>
17/11/2008	Enstone	Enstone Flying Club	Paul Fowler	01608 678204
18/11/2008	Dunkeswell	Dunkeswell Aerocentre Rest.	Brendon Proctor	01404 891643
19/11/2008	Lands End	Airport Terminal	Emily Bliss	01736 785227
24/11/2008	Tibenhams	Norfolk Gliding Club	Tim Davies	01379 677207
08/12/2008	Nottingham	Tollerton, Trueman Clubhouse	Brendon Proctor	0115 9815050
09/12/2008	Gloucestershire	Airport Terminal	Harry Hopkins	01242 260242
10/12/2008	Wycombe	TBC	Caroline Herd	01494 443737