

# GASIL



## General Aviation Safety Information Leaflet

[www.caa.co.uk/gasil](http://www.caa.co.uk/gasil)

Issue no. 8 of 2012

### Danger Areas

The June Occurrence Digest contained more than one report of an aircraft flying into an active Danger Area. Fortunately the aircraft and occupants suffered no damage from the firing which was taking place at the time.

Danger Areas are exactly that. They are areas where activity takes place which is a danger to us, the aviators who might wish to fly there. Their dimensions are published on charts and in the AIP, where the times of activity of the 'permanent' danger areas can also be found. Other areas are activated by NOTAM, as are extensions to the normal times or dimensions of 'permanent' areas.

If a pilot does not know or cannot remember when a particular area is 'active', an air traffic service unit may be able to advise at what time the activity is published as taking place. For those Danger Areas marked on charts with "S", a Danger Area Activity Information Service (DAAIS) is available from units whose frequencies are listed on the charts. If the Danger Area is marked with "¶", the DAAIS is also available by telephone, and the number is listed in the UKAIP, available through [www.ais.org.uk](http://www.ais.org.uk).

There may also be a Danger Area Crossing Service available for certain areas. These will be marked with "†", which indicates that pilots may be able to talk to the person controlling the dangerous activity, who in certain circumstances may be able to allow an aircraft to cross the area at a particular time. However, we stress that if crossing clearance cannot be obtained, or if there is no reply on the listed frequency, pilots must NOT assume that it is safe to cross. If in doubt - STAY OUT!

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## Balance

A recent report involved a Trislander, the pilot of which apparently experienced problems keeping the nose up for the climb just after take-off. The cause was assessed as the passengers in the front rows of seats being of above average weight.

The incident highlights the need to take care when making weight and balance calculations before flight. As described in [SafetySense leaflet 9 "Weight and Balance"](#), available like all such leaflets free for download from [www.caa.co.uk/safetysense](http://www.caa.co.uk/safetysense), the pilot of an aeroplane with a centre of gravity too far forward can experience not only increased fuel consumption from 'trim drag', but also difficulty in raising the nose in the landing flare. A tail-heavy aeroplane will be less longitudinally stable and more likely to stall. Keep the CofG inside the aircraft's permitted range.

Even if the centre of gravity is within limits, the effects will be noticeable. Moving passengers around to keep the CofG well inside the authorised boundaries makes life easier for the pilot.

## Gyrocopter handling and performance

Over recent years, there have been several accidents to gyroplanes during or just after take-off. The CAA, with the help of the British Rotorcraft Association, has produced a Handling Sense leaflet on the subject of Gyroplane handling with particular emphasis on take-off techniques and performance. It, like the other such leaflets offering advice on aeroplane handling, can be downloaded from the CAA web site [www.caa.co.uk/safetysense](http://www.caa.co.uk/safetysense). Gyroplane pilots and instructors are strongly advised to study the leaflet and adopt its recommendations.

### HANDLING SENSE 4 GYROPLANE HANDLING AND PERFORMANCE



1. BACKGROUND
2. TAKE OFF PERFORMANCE
3. TAKE OFF PROFILE
4. PERFORMANCE v ROUGH GROUND
5. THE POWER CURVE
6. ABORTING TAKE-OFF
7. EFFECT OF THE ENVIRONMENT
8. ROTOR HANDLING
9. FLYING
10. SAFETY RECOMMENDATIONS

## GPS problems

The June Occurrence Digest includes a report of a student who apparently infringed the Manchester Control Area as a result of 'GPS problems'. This would seem to support our contention in a recent article that it is important for students (and qualified pilots) to not only learn initially to navigate without GPS, but afterwards to learn how to use it properly as a back-up to that visual navigation.

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## Canopy closed and locked?

We have in the past reminded pilots that an unsecured door can cause serious distraction and possible control problems, but that attempting to seize it and hold it shut may cause even more problems. Know your aircraft and if it will still fly with an open door, leave it until you can land or at least reach a safe altitude before you attempt to secure it.

However, some door systems, and many cockpit canopies, may present more serious problems. An open canopy, like some doors, can increase drag considerably, possibly preventing level flight even at full power. It may even be possible in some cases for a canopy to be torn off by the airflow, and this has happened; the possible damage to a tail section and its control surfaces can be imagined. We cannot afford to take off with an insecure canopy.

While a positive push will often identify an unsecured canopy, the mechanism may resist such a push but still be able to work loose under flight forces. As the pilot of a Pitts Special discovered recently, it pays to ensure that not only is the canopy closed but the locking mechanism has locked completely; not only during the pre-take-off vital actions, but also during the pre-aerobatic HASELL checks.



## Farnborough LARS (West) frequency monitoring code

For a trial period, initially until 1 March 2013, pilots of aircraft operating within the Farnborough LARS (West) coverage area but who do not wish, or are unable, to obtain an air traffic service are encouraged to listen on frequency 125.250 MHz and select code 4572, with ALTitude selected if possible. That will allow them to be contacted by the LARS controller if necessary to prevent airspace infringements.

However, selecting such a 'listening squawk' does not provide any form of air traffic service. Therefore when within 8 miles of Farnborough aerodrome, when close to Ockham, or in other areas of high traffic density, pilots are strongly encouraged to make an appropriate radio call and obtain a service from the controller, rather than just listen.

## Fire extinguisher

A [report](#) in the AAIB's Bulletin 5 of 2012 concerns a PA34 Seneca. It seems the crew noticed smoke, an acrid smell, and eventually flames from an overheated electrical connector in the cabin heater during the approach to land. The heater was switched off, and the commander instructed a student, who was observing the flight in a rear seat as a passenger, to operate the fire extinguisher. The passenger observed that the discharge rate was poor, but sufficient to extinguish the flame.



Following a safe landing, the commander was able to demonstrate to the passenger in a test that if held upright as the instructions stated, the extinguisher operated satisfactorily.

Do we know how to operate our own extinguisher, and have we briefed our passengers accordingly?

## Taxiing and wind

Recent high winds seem to have caught out more than one taildragger pilot. There will undoubtedly be more high winds as the summer(?) turns to autumn, and probably more aircraft damaged while taxiing. The problem is not restricted to taildraggers, although in general the lighter the aircraft the lighter the wind which will induce problems.

When taxiing into wind, or indeed with the wind blowing from anywhere in front of the beam, pilots should be used to holding the elevators fully up in order to keep the tail down. If there is a component of the wind from the side, we should be holding the ailerons into that wind, in order to prevent the into wind wing rising.

However, if the wind is coming from behind the beam, the situation becomes more complicated. Unless we are taxiing faster than the wind speed, an elevator which is held up will produce lift from the wind which blows onto it, thereby providing a force to raise the tail - the effect we wish to avoid. If the wind is from behind (abaft) the beam, we need to hold the elevator fully DOWN to prevent the tail rising in a strong wind. For the same reason, an aileron which is held into a crosswind from behind the beam will encourage that wing to rise, so we need to hold the ailerons away from the wind direction in order to provide the desired down force on the into-wind wing.



File Photo

Some pilots hold the controls neutral in strong winds in an attempt to avoid the unwanted lift force. Unfortunately, if the tail bounces upwards as the aircraft taxis across rough ground, the neutral elevator may not provide enough force to bring it back down again before a gust lifts it further. It is also not always the case that a centrally positioned control column means a neutrally positioned elevator - check what stick position corresponds to neutral in your aeroplane! (That's where you want it for spin avoidance also).

Of course, when turning on the ground, the control positions must change as the relative wind changes. While on the ground with the wind coming from in front of the beam, hold the elevator up and the aileron into the wind. As the relative wind direction changes in a turn (or a gust - watch the windsock for these) move the control column to hold the elevators down and the ailerons out of the wind. A good rule of thumb is "climb into wind, and dive away from it". However, probably more importantly, know what windspeed you can control your aircraft in, and don't risk taxiing if it's stronger.

## Distress and Diversion centralised

Readers will know that the Distress and Diversion (D&D) Cells located at Swanwick and Prestwick currently provide emergency coverage throughout the London and Scottish FIRs respectively. We have been informed that, as of the 12th December 2012, the Scottish/Prestwick D&D Cell will close, and the London/Swanwick D&D Cell will then assume responsibility for both the London and Scottish FIRs/UIRs.

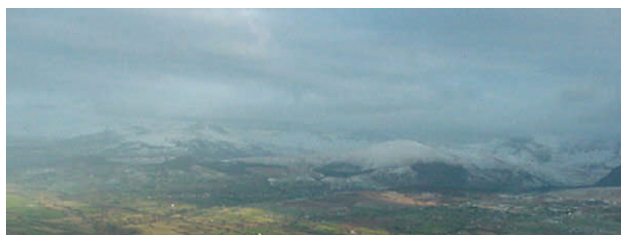
All tasks and responsibilities currently carried out by the Scottish D&D Cell will be taken on by the London D&D Cell. Extensive equipment upgrades and installations will ensure the same level of service provision to aircraft. The most noticeable change to pilots will be the callsign "London Centre" covering both the London and Scottish FIRs/UIRs. The callsign "Scottish Centre" will no longer be used from the changeover date.

Any reporting action or enquiries which would previously have been made to the Prestwick Centre should be made through the single D&D cell at Swanwick, telephone number 01489 612406.

Further guidance or advice on the changes is available from: Flight Lieutenant Ben Cribb at Swanwick, via the above telephone number or by email at [Benjamin.cribb@nats.co.uk](mailto:Benjamin.cribb@nats.co.uk).

## Hills and mountains

In issue 6 of 2012 we included an article on hills and mountains, including the advice for pilots who intend flying in, or in the lee of, hilly country to read AIC 82/2008 (Pink 148), “Flight over and in the vicinity of High Ground”. The article concentrated on wave and rotor effects. However, included in the AIC is the advice that it is especially hazardous to fly towards high ground when experiencing a headwind, because strong down currents are caused by the air descending the lee slope.



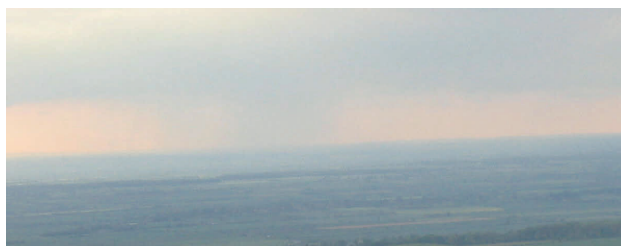
The AIC also reminds us that if the air is stable a strong surface air flow over high ground will produce a substantial and sustained downdraught and/or turbulence on the lee side of the hill. It states that such downdraughts may on occasions be strong enough to defeat the rate of climb capability of some aircraft, and since few GA aircraft are capable of high rates of climb, that warning is particularly appropriate to us. What may make matters worse is that, even if the forecast gradient wind is only moderate, the ‘venturi effect’ of air flowing over high ground being forced through a gap between the ridge and the stable air above can produce a considerable increase in the wind at the ridge top. That not only gives the air a higher rate of sink, but also increases the time our aircraft spends in the rapidly descending air as we approach the peak.

Safe flight in mountainous or even hilly country requires considerable knowledge, skill and awareness. For those of us who are at all unsure that we possess all of these, in general, stay upwind of the hills, even if you think you are high enough above them to be safe!

## Anticipating weather problems

Loss of control in flight without visual references is a major cause of fatal accidents in almost all types of General Aviation aircraft. A valid (and current) instrument qualification can offer considerable assistance to a pilot who encounters conditions which require its use, although it does not provide complete immunity from the hazard. Most GA pilots, however, do not have either the training or the equipment to survive without external references. The European GA Safety Team EGAST has recently published a safety leaflet on ‘Weather Anticipation’, which is available, like all their safety promotion material, free for download from the EGAST website [www.easa.europa.eu/essi/egast](http://www.easa.europa.eu/essi/egast). While the advice is targeted at GA pilots throughout Europe, much of the leaflet’s content is directly relevant to flight in UK airspace, and reiterates advice given in these pages.

The leaflet reminds us that, if we look around the available horizon, changes in visibility around that horizon warn that either cloud is below the aircraft’s present altitude, or precipitation is falling there. Neither is good news for a private pilot, so descend, but not below your planned minimum VFR altitude. If you cannot see a clear horizon, change your route, away from the precipitation. “Curtains” of cloud which appear to be falling from above indicate precipitation, which may obscure the horizon. Precipitation may spread quickly, especially around the base of a large cumulus, so have another safety option (preferably a diversion aerodrome in sight) before you try to fly around precipitation from an overcast (or even broken) cloudbase.



The important points are, first that we need to calculate and be aware of our minimum VFR altitude (the altitude below which it is not safe to continue), and second that we need to be constantly looking around us in flight, positively seeking information which can warn of future problems. Accident and incident reports often contain the expression that the aircraft was “suddenly enveloped in cloud”, or perhaps “visibility suddenly fell to zero”. While such conditions have been known to occur, there is almost invariably some warning sign, which if we keep looking for we should be able to spot before we are unable to take action to avoid the problem.

## Grass

Recently a Bolkow 105 experienced a high turbine outlet temperature on climbout at 70% torque. Subsequent investigation revealed that grass had built up in the diffuser duct, which when removed apparently cured the problem.

Operations from cut grass fields have been known to create similar problems in the past, and not only to turbine helicopters. Cut grass blown by rotor blades or propellers (or from the mower itself) has been identified as restricting air flow through intakes of piston engines and oil or alternator coolers. Careful pre-flight inspection is half the battle; keeping rotor and propeller wash away from others is the other half.

## Passenger safety

A pilot is responsible for the safety of his aircraft and passengers. Hopefully, those readers who intend carrying passengers will be familiar with guidance contained in the CAA's [Safety Sense leaflet 2](#) "Care of Passengers", available like all such leaflets free for download from the CAA's website [www.caa.co.uk/safetysense](http://www.caa.co.uk/safetysense). If not, please read it.

However, the European Helicopter Safety Team EHEST has recently published a comprehensive [video](#) on passenger safety briefing on their website [www.easa.europa.eu/essi/ehest](http://www.easa.europa.eu/essi/ehest). While primarily targeted at helicopter pilots and operators, much of the advice is also applicable to pilots and operators of other aircraft, and we recommend it.

## Heavy operations

Following our article on WAT in issue 6 this year, we were recently reminded by a reader that pilots who have been trained for their licences in 4-seat aeroplanes with less than full tanks may experience problems when they use the same aircraft at maximum take-off mass authorised (MTMA), for example with passengers on board. [SafetySense leaflet 7](#) "aeroplane performance", available like all such leaflets free for download through [www.caa.co.uk/safetysense](http://www.caa.co.uk/safetysense), describes amongst other factors the reduction in performance an aeroplane will experience as its weight increases, with specific emphasis on take-off and landing performance. Instructors should ensure that their students' training includes operations at or close to MTMA, ideally in hot weather.

However, we are reminded that it is not just on take-off and landing that pilots may notice the differences between a light aircraft and a heavy one. Apart from a heavy aircraft experiencing an increased fuel consumption in the cruise, manoeuvrability can also be expected to suffer. Stalling speeds increase, as do turning circles, while rates of climb reduce. Those of us carrying out aerobatics either for fun or display will find that reduction in manoeuvrability particularly noticeable; a looping manoeuvre which at light weight we have completed regularly at the same height as the entry may end a lot closer to the ground. As we have said before, increase safety margins when hot and/or heavy.

## Aerodrome markings

The Occurrence Digest published with GASIL continues to include incidents of aircraft entering runways without clearance. Runway incursions are one of the CAA's 'significant seven' hazards in UK aviation, and we should not only plan our taxi pattern at busy aerodromes as carefully as our flights themselves, but also attempt to maintain our situational awareness while moving on the ground. "If in doubt - stop and ask" is sensible advice.

We are encouraged to know that one of our regional aerodromes has offered pilots under instruction at their local flying schools a vehicle tour of the airfield, in order to physically show them what the various markings look like from cockpit height and what they mean. Perhaps other aerodrome operators might consider offering this type of practical training also?

## Don't interfere!

The number of frequencies available for use in the aviation VHF band is limited. The ranges (both vertical and horizontal) at which these frequencies should be used has also to be limited, in order to prevent transmissions made to one ground facility interfering with transmission to another station using the same frequency. It seems from recent reports that some pilots are unaware of the appropriate procedures.



The designated operational coverage (DOC) of frequencies allocated to aerodromes for specific purposes is listed in the UK AIP at GEN 3-4-5, 3.2.4. Unless in an emergency, pilots should not make transmissions outside that coverage:

Approach Control - 25 nautical miles radius and 10,000 feet above the aerodrome

Tower Control at an International aerodrome - 25 nautical miles radius and 4,000 feet above it

Tower Control at another aerodrome - 10 nautical miles radius and 3,000 feet above it

Aerodrome Flight information Service - 10 nautical miles radius and 3,000 feet above it

Air to Ground Communications Service - 10 nautical miles radius and 3,000 feet above the aerodrome

SafetyCom - 10 nautical miles radius and 2,000 feet above the aerodrome of intended landing

It should also be remembered that in certain atmospheric conditions radio signals can be 'ducted' for considerable distances, so just because you can hear someone talking to an aerodrome a hundred or more miles away doesn't necessarily mean they are doing anything wrong!

## Night Flying

Readers will be aware that from the 17 September 2012 aircraft in UK airspace will be permitted to fly under VFR at night. This has come about due to the introduction of the European Aircrew Regulation - Part-FCL - under which pilots will only be allowed to fly under IFR (by day or night) if they possess a valid (and therefore current) Instrument Rating or IMC Rating, and necessarily that their aircraft is certificated and equipped for IFR flight. The change to VFR at night also pre-empts the introduction of the Standardised European Rules of the Air (SERA) that are expected to come into force in the UK at the end of 2014, and will standardise the use of VFR at night across Europe.

There will be several changes in regulations to allow this to happen. However, while these will appear quite complex, from a practical viewpoint the main change from the way most recreational pilots fly at night at present will concern the distance they must remain away from cloud. As at present, to obey the Visual Flight Rules, pilots must stay a minimum of 1,000 feet vertically and 1,500 metres horizontally away from cloud, or clear of cloud and with the surface in sight if flying below 3,000 feet amsl. However, at night, they will also have to remain in a flight visibility of at least 5,000 metres (8km above 10,000 feet) at all times, although helicopters will be permitted to operate outside Controlled Airspace in visibility down to 3,000 metres when below 3,000 feet amsl.



Flight in Controlled Airspace will continue to be permitted when in receipt of the appropriate clearance. For VFR flight in class D airspace there is no requirement for a written flight plan, the initial radio call will suffice. However, pilots should note that because they will be 'VFR traffic', **in Class D airspace they will be responsible for their own separation from all other traffic**, as they already are during the day. Special VFR within Control Zones will continue to be available as at present.

## GA Safety Evenings 2012 - 13

GASCo, the GA Safety Council to which the CAA is a major contributor, is organising this winter's series of Safety Evenings. The evenings are of value to everyone involved in general aviation, whatever they fly, operate or maintain. Logbooks will be signed when requested as proof of attendance. The programme of currently confirmed events is shown below, but more will be announced when confirmation has been received.

For updated information, see the CAA website [www.caa.co.uk/safetyevenings](http://www.caa.co.uk/safetyevenings) or the GASCo site at [www.gasco.org.uk](http://www.gasco.org.uk). Organisations wishing to host a future safety evening should contact GASCo on 01380 830584 or by e-mail to [ce@gasco.org.uk](mailto:ce@gasco.org.uk).

Date	Time	Area	Venue	Contact
8 Oct	1930	Popham	The Clubhouse	<b>Alan Lovejoy 07831 606075</b> <a href="mailto:alanlovejoy@gmail.com">alanlovejoy@gmail.com</a>
3 Nov	1900	Old Sarum	Flying School	<b>Nicky Ross or Ben Koprowski 01722 322525</b> <a href="mailto:info@flysarum.com">info@flysarum.com</a>
8 Nov	1700	Caernarfon	Terminal	<b>Edward Hollinshead (CFI) / Tom Smith (Ops Manager) 07831 606075 or 07825 449603</b> <a href="mailto:hollinshead8@btinternet.com">hollinshead8@btinternet.com</a>
9 Nov	1930	Welshpool	Terminal	<b>Linda Jones 01938 555560 or 07759 411286</b> <a href="mailto:midwalesairport@btconnect.com">midwalesairport@btconnect.com</a>
14 Mar	1930	Devon LAA	The Ley Arms	<b>Steve Robson 07776 075996</b> <a href="mailto:sb.robson@tiscali.co.uk">sb.robson@tiscali.co.uk</a>

## Tied down?

We frequently advise pilots to tie their aircraft down securely when strong winds are likely. In the June Occurrence Digest distributed with GASIL, readers will have read of a pilot who taxied his PA 28 with ballast still attached to the aircraft by its tie rope, and apparently attempted to take-off in the same condition.

In the last issue we reminded readers not to distract a pilot during pre-flight checks. Was this the result of such distraction?



File Photo