

# GASIL



## General Aviation Safety Information Leaflet

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

Issue no. 3 of 2011

### Unusual Flying Activities

Pilots are sometime approached by others with marvellous ideas about how they can use their aircraft. For example, they may be asked to demonstrate their aircraft to some friends gathered at a wedding or other event. It could be that a parachutist or paraglider pilot may wish to jump out of their helicopter. As the pilot approached, you may have heard about others doing what is suggested, maybe in another country. You may have actually seen it on YouTube (or even a terrestrial television channel).

We suggest that if you are approached (or have a bright idea yourself) to do something out of the ordinary, you should consider very carefully **why** it sounds out of the ordinary. Despite the sadly too many fatal light aircraft accidents in this country, the UK has a commendable safety record, partly because we are very careful about what can be done in or from aircraft. The Air Navigation Order and Rules of the Air Regulations limit or prevent a lot of the unusual flying activities which may be suggested. Make sure you are not contravening the regulations by checking through [CAP 393](#), and if in doubt, don't do it! A pilot was recently found guilty of contravening Article 130 of the ANO by dropping a person (paraglider pilot) from his helicopter. He was fined.

Despite these regulations, it may be possible to carry out that out-of-the-ordinary flying if you can convince the CAA that the circumstances in which you wish to do it are safe. The CAA website includes a link to the appropriate forms for submission to Flight Operations (General Aviation), who may be able to give permission to do something, or even sometimes grant an exemption from a particular rule, if they can see that the operation is safe.

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## Swinging? - dodgy?

While accepting that for certain aircraft it is the norm, we frequently draw attention to the potential hazards of attempting to start an aeroplane engine by hand-swinging the propeller. Because there are many facets to hand-swinging, it is very difficult to provide generic advice, which is why we emphasise the need for proper instruction from a suitably experienced person before attempting the task oneself. It is, however, important that swinging should not be attempted if the Flight Manual, Maintenance Manual or Pilot's Operating Handbook advises against it, so these should be consulted beforehand. Some of those may provide useful guidance, such as the appropriate magneto, mixture and/or priming selections for the operation.

As accident reports all too frequently remind us, unless the pilot or otherwise qualified person is sitting in the cockpit with direct control over the throttle and brakes (if fitted), the aircraft may move forward out of control. Brakes may fail, so chocks are a useful alternative/addition. However, a possibly greater danger is posed by the ignition system of virtually all light aeroplanes. Because a broken wire in the system will prevent the magneto current running safely to earth when not required, it is always possible that the engine may spark into life at any time if the propeller starts to move (or if an ignition switch is moved). When touching a propeller, or moving any part of one's body within its rotation disc, you must **always** expect that to happen. "Always treat a prop as live!"



It seems from reports we have recently received that some pilots have been attempting to start aircraft which are not usually hand-swung, and which are very awkward to swing safely. One possible reason for this unusual action may be a flat battery, probably not an uncommon problem in winter; however, we remind pilots that it takes a long time for an engine to re-charge a battery and in the event of an engine or alternator problem in flight all electrical power is likely to be lost very rapidly. Much better to delay the flight and remove the battery for re-charging on the ground.

## Unusual landing site hazards

The AAIB's Bulletin 2 of 2011 contains a [report](#) of an accident to a Twin Squirrel which had started engines at a remote landing site which happened to be a golf course. It seems the tail rotor was struck by an unusual loose article, causing considerable damage. The loose article was a moving golf cart.

According to the report, a young child who had entered the cart with an adult had stepped on the accelerator pedal, and the cart had travelled a considerable distance before contacting the aircraft. Fortunately the occupants were uninjured, but it does highlight the difficulty of keeping the site clear of obstructions!

Editorial office: Flight Operations Inspectorate (General Aviation), attn GASIL Editor,  
Safety Regulation Group, Civil Aviation Authority, Aviation House,  
Gatwick Airport South, West Sussex, RH6 0YR.  
Telephone +44 (0)1293 573225 Fax +44 (0)1293 573973  
e-mail: david.cockburn@caa.co.uk.

Distribution: FOI(GA) Admin, address and fax as above. Telephone +44 (0)1293 573525.

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## Wind

Spring weather provides an incentive for pilots to fly in the often clear conditions. However, with those clear conditions often comes a 'moderate' or even 'strong' wind. We often remind pilots that while their Flight Manual or Operating Handbook may give a 'demonstrated' crosswind for operating their particular aircraft, each pilot has their own personal limit, which might differ from day to day as other factors change.

However, even if the reported wind remains within a pilot's personal limits, convection currents may accentuate the strength of that wind, and these gusts must be expected to occur at the most awkward moment. Always know where to find a runway with a lower crosswind component, and be ready to divert there before you find out the hard way that you cannot cope.



## Students don't always act as expected

Technologically advanced aircraft are increasingly being used for flying training. This implies that their pilots, including solo students, have access to a considerable range of knobs and switches, many of which at first sight appear to offer benefits. Human factors suggest that a student on a navigation exercise is liable to 'fiddle' with any device which appears to make his or her navigation easier.

Purists may consider that any electronic assistance on a visual navigation training exercise is to be deployed, and that the facility should be disabled on such flights. However, electronic aids, properly used, are a very useful tool for safe navigation, and human factors suggest that all pilots should use whatever aids are available to back up their primary means of navigation. This implies that students (and other pilots) must be properly trained to use the equipment in their aircraft before being placed in a situation which might encourage them to 'fiddle'.



Training in the use of GPS or flight management computers is likely to take more time (and instructional expertise!) than previously before the student flies a navigation exercise solo. However, most such systems have computer-based training programmes with which instructors can develop students' necessary skills (and those of qualified pilots stepping up to the technology) without resorting to lengthy airborne exercises.

## Olympics airspace 2012

The government has announced several restrictions it intends imposing during the period of the London Olympic and Paralympic Games in 2012 between 13 July and 12 September. Details of these, and any updates as they may appear, can be found on <http://olympics.airspacesafety.com>.

Stakeholders who wish more information can e-mail [olympicsairspace@caa.co.uk](mailto:olympicsairspace@caa.co.uk). This e-mail should be used for all Olympic airspace enquiries into the CAA.

These restrictions, and the ASI website, deal only with the Government's security restrictions for airspace. All other CAA related Olympics work, such as the approval of landing sites, will be detailed on the CAA's existing Olympic webpages at [www.caa.co.uk/olympics](http://www.caa.co.uk/olympics).

## GPS - a help or hindrance?

In previous issues we have advised pilots who need to become familiar with their new avionics to employ a suitable instructor, or at least to employ a safety pilot to fly the aircraft while they practice using the equipment. However, it is important that you at least learn the basics of your new equipment before attempting to use it in the air.



The hazards of failing to do so were illustrated when the crew of a light aeroplane inadvertently entered controlled airspace and caused a commercial airliner to be given avoiding action. It seems the pilot in command was distracted from his primary functions of “aviate, navigate, communicate” by attempting to assist his passenger to become familiar with his new GPS set.

## Circuit patterns

The UK Airprox Board recently discussed an incident which occurred at an aerodrome with a radio operator on duty. It seems a visiting pilot had joined the circuit on the crosswind leg, turned downwind and ended up on base leg very close to another aircraft which had been following the pattern recommended for noise abatement. This included a relatively wide downwind leg.

The aerodrome entry in the UK AIP requires visiting pilots to obtain prior permission and a briefing by telephone, which we strongly advise visitors to obtain every time from their destinations. It seems the passenger of the aircraft had obtained the briefing, rather than the aircraft commander, and either the message or the interpretation of it missed the fact that the recommended pattern was wide. As with many aerodromes, the aerodrome website contains expanded information which supplements the PPR briefing and any entry in the AIP. In this case the site, to which visitors are routinely directed, describes the recommended patterns for both runways.

Appropriate radio calls had apparently been made by both aircraft, but it seems neither appreciated the position of the other until they were very close. When no other procedure is published, we advise pilots to make an ‘overhead join’ as shown in the poster available on the CAA website [www.caa.co.uk/safetysense](http://www.caa.co.uk/safetysense).

## Successful Ditching

We frequently remind readers of the need to study SafetySense Leaflet [21](#) ‘Ditching’, available like all such leaflets from [www.caa.co.uk/safetysense](http://www.caa.co.uk/safetysense), before crossing areas of water outside gliding range of land, and to follow the advice contained. The AAIB’s Bulletin 2 of 2011 includes a [report](#) into a successful ditching of a PA-32 last summer, which we strongly recommend should be downloaded and read in conjunction with the SafetySense Leaflet.

## Is your licence valid?

Pilots are usually aware that they need to revalidate or renew the ratings attached to their licences every year, every 13 months, every two years, or every 25 months as appropriate. However, most licences to which these ratings are attached also have an expiry date, and most of these require renewal every five years.

It is an offence to fly without a valid licence. Check yours!

## Instructors - read this!

We recently received the following in a letter purporting to be from a student pilot. If true, his experience is disconcerting to say the least.



File photo

“When I was completing my solo circuits, I received an awful fright and did not know what to do. The aircraft bounced into the air and then landed heavily on the runway. I was not in control. Upon regaining control, I taxied back to the flying school where I reported my heavy landing. I was close to stopping my training at that point as I value my life. Before I went solo I practised with my instructor: flapless

approaches and landings, glide approaches and landings, engine failures after take-off, stall recovery low-level circuits and go-arounds. But at no stage was I taught in an aeroplane how to deal with a ‘bounced landing’. Yet it’s clear to me now that new pilots do have a greater risk of experiencing a ‘bounce’ and that they frequently result in damage to aircraft and sometimes injuries to the pilot. My recommendation is that recovery from a ‘bounced landing’ should be part of the PPL syllabus.”

Of course, recovery from a bounced or ballooned landing is already part of the PPL syllabus, and every student should be taught how to recognise and recover from the situation before they are authorised to fly solo. It may be that the student never accidentally puts the aircraft in that situation while practising their landings with the instructor, but the technique must be taught!

## There are old pilots, bold pilots, but . . .

These pages frequently include reports of aircraft flying into the ground in poor weather conditions, killing their occupants. As some readers may remember, Cranfield University conducted a trial several years ago to test possible mnemonic aids to pilot decision-making. It was concluded that there was no statistical benefit in training pilots to use these mnemonics, but the researchers were able to gain more understanding about human factors in general aviation.

The trial involved private pilots ‘flying’ a planned route using flight simulator software on ordinary computers, during which the simulated weather conditions varied but generally deteriorated. A control group of experienced instructors agreed that, although previously there had been no need to abandon the plan, at a certain point along the route the simulated conditions had become so bad that further safe visual flight was impossible. The time before that during which the approaching unsafe conditions could be detected was regarded as the ‘window’ during which a sensible pilot should have chosen to abandon the plan and divert to better weather.



One of the results from the trial was that **more than half** of all the participants made their decision to abandon the planned flight after that ‘window’, in other words when it was too late to recover the situation. It is therefore probably no surprise that ‘controlled flight into terrain’ continues to be a major type of fatal accident in general aviation. We need to be aware that as pilots and human beings we are likely to take more risks than we ought, and make conscious efforts to reduce our risk threshold. If things start looking bad ahead, take action then, don’t wait till it’s too late!

## Air Displays and Restrictions of Flying

Many flying displays and other events this summer will be subject to Restrictions of Flying, as detailed (usually with maps) in Mauve AICs. Reminders, usually referring to these AICs, will be given in NOTAMs, together with details of other displays, and all are available through the AIS website [www.ais.org.uk](http://www.ais.org.uk), which is where all AICs can be found free of charge. Displays and other major events taking place over the next few months of which we are already aware are listed below, but others are likely to appear in NOTAMs at short notice:

29 April	London (Royal Wedding)	9/10 July	Duxford
6-8 May	Abingdon	23/24 July	Southport
22 May	Duxford	23/24 July	Windermere
28/29 May	Southend	11/12 August	Lowestoft
30 May – 12 June	Isle of Man (TT Races)	11-14 August	Eastbourne
10-12 June	Cosford	18-21 August	Bournemouth
17-19 June	Kemble	19 August	Duxford
20/21 June	Stonehenge	20/21 August	Shoreham
22-27 June	Glastonbury	30/31 August	Sunderland
5 July	Isle of Man	3/4 September	Duxford
8-10 July	Silverstone	17/18 September	Kemble
		16 October	Duxford

## Emergency ADs

EASA produces [bi-weekly](#) summaries of the ADs they have issued or approved, which are available through their website [www.easa.eu](http://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 and the FAA; however, this list is not exhaustive and must not be relied on.

Number	Applicability	Description
<a href="#">EASA 2001-0031-E</a>	<a href="#">Agusta A109E</a>	<a href="#">Tail rotor drive shaft</a>
<a href="#">EASA 2011-0044-E</a>	<a href="#">AS 332 &amp; EC 225</a>	<a href="#">Cabin lateral doors limitation</a>
<a href="#">EASA 2011-0053-E</a>	<a href="#">DG-808C Powered Sailplanes</a>	<a href="#">Landing gear bellcrank bolt</a>
<a href="#">EASA 2011-0063-E</a>	<a href="#">Tecnam P2006T</a>	<a href="#">Emergency gear accumulator</a>
<a href="#">FAA 2011-07-13</a>	<a href="#">CPAC (Commander) 112,114</a>	<a href="#">Elevator spar cracks</a>

## Mandatory Permit Directives

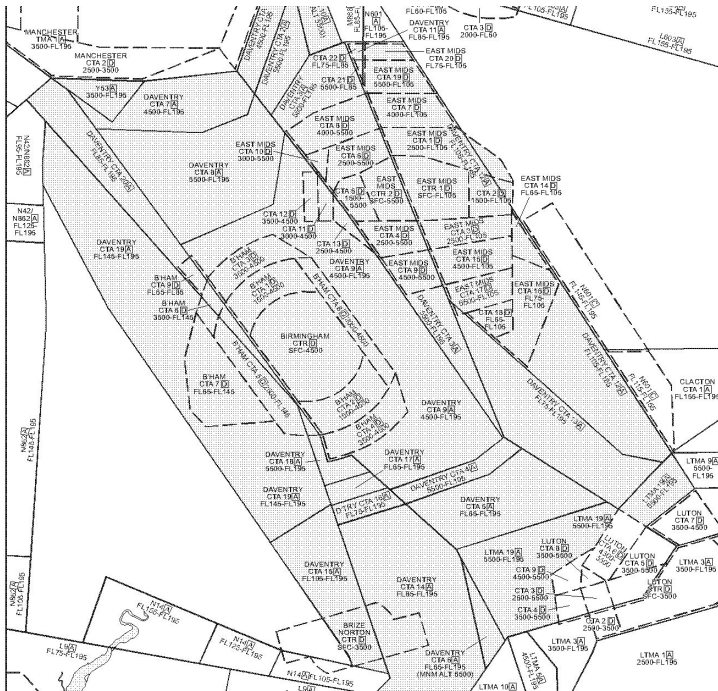
The following Mandatory Permit Directive (MPD) has recently been issued by the CAA. Compliance is mandatory for applicable aircraft operating on a UK CAA Permit to Fly. [MPDs](#) can be found at [www.caa.co.uk/mpds](http://www.caa.co.uk/mpds) and will remain on the website available for download until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

Owners of aircraft with Permits to Fly and their Continued Airworthiness Managers should register to receive automatic e-mail notification when a new MPD is added to the website, through [www.caa.co.uk](http://www.caa.co.uk) > Publications > Subscriptions > New User Subscription Registration, and choose the 'Safety Critical Information' category.

<a href="#">Emergency 2011-001</a>	<a href="#">Magny M24C gyroplanes</a>	<a href="#">Rudder pedal mounting block</a>
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# IFR beneath Daventry CTA

Although the Transition Altitude (TA) in UK airspace is generally 3,000 feet, this has not been the case within and beneath certain Controlled Airspace such as the London and Manchester TMAs for some time. More recently, and as advised in AIC Y 004/2011, the TA within and beneath the Class A Airspace of the Birmingham, East Midlands and Daventry Control Areas (CTAs) has been raised to 6,000 feet, and the latest edition of the CAA 1:500,00 charts includes the change. The base of much of the Daventry CTA is now defined as an altitude, and pilots flying in the vicinity should set the QNH of an adjacent aerodrome when flying at or below the TA.



In the past, pilots have been able to obtain a measure of collision avoidance by crossing from East to West, or in certain conditions from West to East, by climbing above 3,000 feet, setting 1013 hPa, and flying at the appropriate Quadrantal Level. Such Quadrantal Levels are currently only available above the TA.

Pilots needing to transit under such controlled airspace, particularly when flying IFR, should consider obtaining a radar service from a nearby LARS or other Air Traffic Control Unit before doing so. However, a full service may not be available, so pilots might also consider following the same Quadrantal Rules as before, but flying at the associated altitude with the appropriate QNH set on their altimeter.

This would mean that if the Quadrantal Rule was already being followed, and as the line on the chart marking the boundary was approached, the altimeter setting would be changed to the QNH of an aerodrome under the CTA (Birmingham for example) and altitude adjusted accordingly before crossing that line. Similarly, after reaching the line on the chart indicating an area where the TA is again 3,000 feet, the altimeter would be changed back to 1013 hPa and flight returned to the appropriate Quadrantal Flight Level.

## Familiarisation

When converting to an unfamiliar aircraft type or mark, the aircraft may possess certain characteristics which require formal 'differences training' from a flying instructor. However, if differences training is not formally required, many pilots would consider assistance from an instructor to be an unnecessary expense.

Nevertheless, flying a new type or mark of aircraft does require 'familiarisation training'. Often, careful study of the Pilot's Operating Handbook is all that is needed to prepare for that first flight, although a briefing from a pilot who flies the type regularly is always advisable. However, we should treat that first flight carefully. Do not attempt to carry out any sophisticated manoeuvres, or fly in marginal weather conditions, until you have become completely familiar with the aircraft's normal operation. Similarly, do not attempt to take off or land on a runway which is close to the aircraft's published performance limits until you are confident your own handling ability, in your own individual aircraft, will achieve the performance in the handbook.

It may be that the type is advertised as having excellent short field capabilities. The first flight is not the one to attempt a maximum performance take-off followed by a  $V_x$  climb! Apart from anything else, are you sure the seat is secure on its rail? At low speed, unbalanced flight can lead to serious problems. Become familiar with the aircraft in calm, steady operations and gradually work up to explore its capabilities as your knowledge increases.

## Wind again

In the article entitled 'Wind' we discussed being ready to divert if the crosswind component approaches your personal limits. However, even a wind down the runway may produce turbulence and control difficulties, and a gusting crosswind or tailwind has been known to turn over taxiing aeroplanes.

We continue to recommend that if the wind strength is greater than 2/3 of your aircraft's stalling speed, or 1/2 the stalling speed of a tailwheel aircraft, the aircraft should remain tied down or in the hangar. However, if (as in the case of some microlights) the Operating Handbook quotes a particular limiting wind speed (and not just a 'demonstrated' figure), operating outside that limit may invalidate the Permit to Fly and probably also the insurance cover.

## Balloons

Those who do not fly hot air balloons may not be aware of how they navigate. They are of course unable to travel in any direction other than that of the wind, so to another pilot it might seem they 'float' in the air as the wind drifts them along. It may be tempting to fly close and have a good look, perhaps even waving to the occupants as you fly by.

However, these giants are not inert. The balloon pilot is almost certainly attempting to travel in a particular direction, and because wind direction changes with altitude, he adjusts his track by climbing or descending. These changes in altitude can take place quite rapidly as he either burns fuel or lets air out from the top of the balloon to accelerate the aircraft and the mass of the air contained in the envelope in the desired direction. To stop the rise or fall requires an acceleration in the opposite direction, which takes time to have an effect. Give the balloon a wide berth!



## Restraint and forced landings

In the AAIB's Bulletin 2 of 2011, we read of an [accident](#) to an Avid Speedwing which apparently suffered a loss of coolant and subsequent engine failure. During the ensuing forced landing, it seems that the aircraft failed to clear the hedge on the approach to the field. The aircraft is reported to have stalled and fallen vertically from about 15 feet just short of the field. During the impact, the pilot, who was wearing lap and shoulder harness, suffered a broken arm and serious facial injuries.

While the report concentrates on the cause of the engine failure, readers may be concerned at the pilot's injuries. Restraint systems such as seat harnesses are designed to minimise injury from head-on impacts. If an aircraft stalls and descends very steeply (described by the pilot as 'falling'), the impact with the ground is unlikely to be head-on. While it might seem to be tempting fate to advise it, if a pilot is faced with a choice of trying to stretch a glide over an obstruction or fly into it under control, the attempted stretch is probably more likely to cause serious injury.

## RNAV (GNSS) Non-Precision Approaches

Instrument pilots may have noticed the statement released by the European Commission on 2 March concerning the EGNOS Declaration of Safety of Life Services. One consequence of this upgrade is that some satellite receivers are now able to receive and display vertical guidance during a published RNAV approach. This may be identified by "LNAV+V" appearing on the map display page.

While having vertical guidance available is an advantage, pilots are reminded that all of the RNAV (GNSS) approach procedures currently published for GA aerodromes in UK airspace are Non-Precision Approaches. Despite the availability of Advisory Vertical Guidance, the published minimum descent altitudes associated with LNAV minima and the missed approach procedures remain the same and must be adhered to.