

# GASIL

*General Aviation Safety Information Leaflet*



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

Issue no 11 of 2010

## Autopilots

Autopilots in aircraft are very useful tools when they are set up and working correctly. In the last issue we referred to possible problems associated with electric trims and autopilots. There were three instances of autopilot undemanded inputs reported in the Occurrence Digest sent with the same issue, including one instance of engaging without being selected. Know your systems!



File photo

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## That VMC article last issue

Once again, it seems that Human Factors have managed to catch out not only the editor but all the CAA employees who read the last issue in its draft form! For some reason, the original article entitled 'VMC' was written with an incorrect reference to Rule 28 of the Rules of the Air Regulations 2007. Only the fact that we referred to distances in different units when the editor did his PPL training could have accounted for his allowing the required separation from cloud under VFR above 3000 feet to be written as 1.5 nautical miles rather than 1.5 kilometres. However, the editor may be in trouble if he suggests that his colleagues who missed the error in the proof reading have the same excuse!

Yes, it shows that we are all human, just like the pilots and others whose experiences (they are not all mistakes!) are highlighted in GASIL and other publications each month. Unfortunately, of course, identifying such an error may lead certain people to think that the whole article is not worth reading. It must, however, not detract from the main message in the article that if we are unable to maintain adequate flight visibility and separation from cloud to avoid collisions visually, we must fly in accordance with the Instrument Flight Rules to provide what collision protection we can.

## Christmas cheer

We wish all our readers a Merry Christmas and a rewarding and SAFE 2011. Perhaps many of us will receive presents (or just treat ourselves) in the form of new gadgets to make our flying or navigation simpler, and we hope safer.

If you are fortunate enough to be one of those lucky recipients, do not just put the device away until the Spring encourages you to fly again. Use the long winter evenings to become familiar with your new device; read the instructions carefully, and if you have problems understanding them, get assistance from someone who does understand. You may be able to practise using it on the ground to become familiar

with it. If it is a GPS set, we suggest getting trained by an instructor using the syllabus referred to in issue 9 of 2010.

become familiar  
with your new  
device

In fact, why not use the winter evenings to meet up with other flyers and discuss how you can make your flying safer and more rewarding? A CAA/GASCo Safety Evening would be ideal, but if there isn't one in your area, why not organise your own using local expertise?

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 (01293) 573225 Fax (01293) 573973 e-mail: david.cockburn@caa.co.uk.

Distribution: FOI(GA) Admin, address and fax as above. Telephone (01293) 573525.

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## Controllers aren't superhuman

A reported incident of a light aircraft passing through an Aerodrome Traffic Zone (ATZ) within controlled airspace without contacting the tower controller highlights a possible misunderstanding. The controller of a piece of controlled airspace may well be controlling from a remote position (possibly scores of miles away), and possibly with no direct knowledge of what is happening in the traffic pattern of the aerodrome itself. He therefore would not be able to provide either the permission, nor the information necessary for safe flight, required to transit through the ATZ under Rule 45 of the Rules

of the Air Regulations 2007.

If we as pilots wish to fly through an ATZ contained within a Control Zone (or a Military Air Traffic Zone), it is important that we specifically ask for clearance to do so early enough either for the Zone controller to obtain that clearance from the Tower controller himself, or for him to authorise us to change frequency and do so ourselves. We must not assume that the controller will automatically appreciate our need for clearance through the ATZ.



File photo

## Final collision

According to an initial report from the BFU (German AAIB), a Cessna 152 and a glider collided this summer at less than 150 feet on the final approach to an aerodrome. Although both aircraft were substantially damaged, the pilots were able to land safely without injury.

Studies conducted in the US and supported by evidence from Europe have shown that most airborne collisions occur in the traffic pattern of an aerodrome. The final approach requires considerable concentration to maintain the correct approach path at a safe and steady airspeed, but we also have to avoid other aircraft whose pilots may also

be concentrating hard on their approach. Merely glancing around is unlikely to allow time to spot other aircraft, and we should concentrate a careful scan on the areas from which the risk and likelihood of collision are greatest.

Of course, joining the circuit as published, or as recommended in the CAA's Safety [poster](#) "Standard Overhead Join", should allow time to listen for, look for and identify all other traffic following that pattern. Nevertheless, we must remember that not all arrivals are guaranteed to follow that pattern.

## Gliders hill soaring

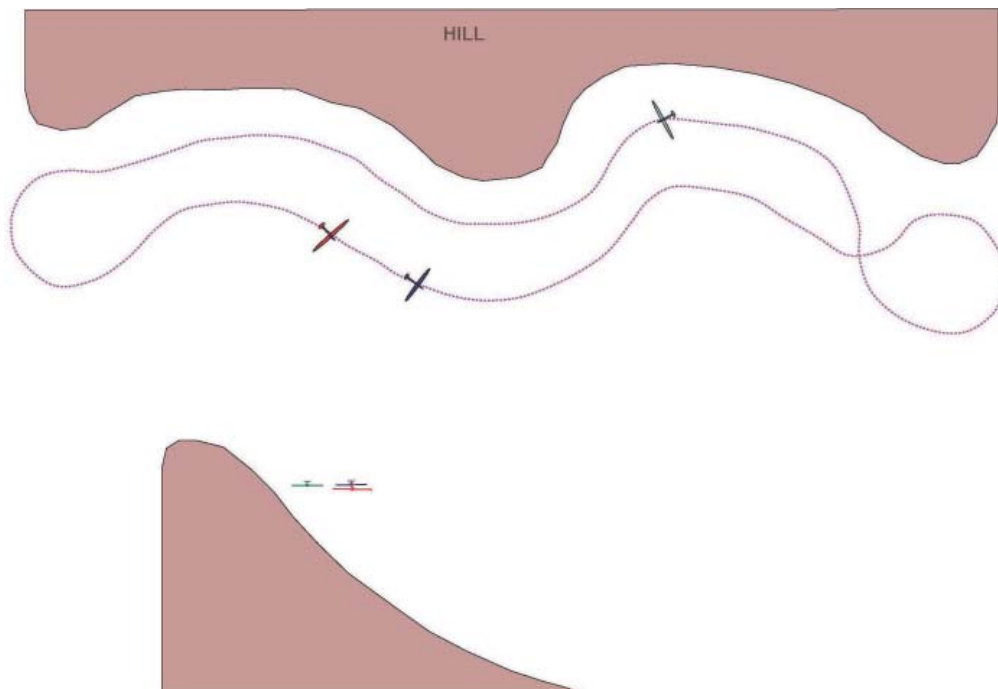
In the early days of the sport of gliding, almost all climbing was done in hill lift. The pioneers developed high levels of skill and knowledge about how to find and use the available lift to their best advantage. They also, perhaps by bitter experience, devised procedures to reduce the risks in that form of soaring. One of these (encapsulated in a current BGA operating procedure) was the modification of what is now Rule 10 of the Rules of the Air Regulations 2007, which in its entirety states: "When two aircraft are approaching head-on, or approximately so, in the air and there is a danger of collision, each shall alter its course to the right". It was fairly obvious that in the case of gliders hill soaring, only the glider with the hill on its left should alter course, because the glider with the hill on its right would either collide with the hill or fly into the turbulent "curl-over" were it to comply literally with the Rule!

Although hill soaring is practised much less frequently nowadays, the techniques for making best use of the hill lift have been passed down from pilot to pilot, and can be found in several textbooks. However, it is probably only the local pilots at hill-soaring glider sites who have maintained a 'corporate knowledge' of all the other procedures which were developed for reasons of safety. Judging from recent incidents, at least a few visiting pilots (or their instructors) have either forgotten, misunderstood, or never considered some of these safety procedures.

One of these is an extension of the collision avoidance procedure stated earlier. It is well known that gliders are difficult to see, especially when approaching head-on. There is therefore a risk of a head-on collision between two hill-soaring gliders. The more gliders that are attempting to soar on the hill, and the lower the maximum altitude that can be achieved, the greater the risk of such a collision occurring. To reduce that risk, historically, experienced hill-soaring pilots have organised their soaring in a standard pattern, in a similar fashion to the traffic pattern around an aerodrome.

When at or near the same altitude as another soaring glider, they organise their soaring to follow the other in line astern to minimise their frontal area and maximise an approaching glider's room for manoeuvre. They also fly close to the hill (in the area of the strongest lift) only when soaring with the hill on their right. When flying in the opposite direction, with the hill on their left, they maintain at least enough space between themselves and the hill to allow another glider to pass safely. This is especially important when approaching a spur, so that in the event that they spot the approaching aircraft (to which they are constrained to give way) late, there is no need for either pilot to take emergency avoiding action. Having checked carefully that it is safe to do so, they allow their aircraft to drift closer to the hill just before starting a turn back onto the 'starboard tack'. Despite being apparently contrary to the collision avoidance rule of changing course to the right to avoid, common sense dictates that they should then pass outside (to the left of) any glider following them before moving closer to the hill.

Other procedures have been developed, and these may vary between individual gliding clubs with hill sites. Visiting pilots should obtain a comprehensive briefing from local instructors. However, the standard pattern as described above and shown below should be regarded as the bare minimum of knowledge before any pilot attempts to hill soar in the presence of other gliders.



## Radial engines

The AAIB report into the fatal accident in a Piston Provost aircraft last year concludes that the initial engine damage which finally caused the accident may have been caused by a hydraulic lock during a previous engine start.

The investigation notes that at various times during this and similar aircraft's service, pilots had experienced hydraulic locks during the pre-start manual propeller turning which is intended to identify these. However, it seems that in an attempt to drain the excess oil from the bottom cylinder(s) and clear the hydraulic lock, at least some of these pilots had rotated the engine in the reverse direction until it was free to turn normally. The report notes that this technique may not actually cure the problem, as oil may subsequently be drawn back into the cylinder through the inlet valve port.

The CAA has issued AIRCOM [2010/14](#) on the subject, giving advice to engineers and pilots. It notes that the specific Operating Instructions for each radial engine design detail the procedures to be used to check for lock prior to engine start, along with the methods required to remove liquid from the lower cylinders if the condition is found or suspected. Normally, on vintage engines, these methods involve removal of a number of spark plugs to facilitate draining of the pooled fluid. Pilots need to be aware of and work to the particular aircraft procedures specified in the pre-flight checks to identify, and if necessary remove, collected fluid in the lower cylinders. If it is suspected that a radial engine has been operated without the correct pre-flight hydraulic lock checks being performed, then the engine should be removed from service and a shop inspection should be carried out for damage before further use.

## Information Dissemination

Following an AAIB recommendation, the CAA has reviewed the manner in which it transmits safety critical information, to ensure that it is clearly identified to the recipient and can be acted upon appropriately. With effect from the beginning of January 2011 information to all aircraft operators, engineers, air traffic service providers and aerodrome operators will be presented in a similar manner. The level of importance of the information will be easily identified by the title and logo the message carries.

A **Safety Directive** will, as the name suggests, contain material which must be complied with by law. It will inform recipients what action is required and by whom, and the time limit for compliance. Engineers and owners are already familiar with Airworthiness Directives and Mandatory Permit Directives, and Operational Directives to aircraft operators will also take this format. If in future the CAA issues Directives related to Aerodromes, Air Traffic Services, or Airspace the same format will be used.

A **Safety Notice** will highlight significant safety concerns where any required action is already addressed by established requirements and regulations. This document will deliver safety notices which have previously been distributed in a variety of forms to different recipients.

An **Information Notice** will not contain any significant safety issues and will principally convey information to all recipients who subscribe to receive them.

CAA Civil Aviation Publications (CAPs) will not be affected by this change and will continue to be available on the website and via The Stationery Office (TSO). Other regular newsletters (such as GASIL) will also continue to be published in their existing formats.



## 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 [www.caa.co.uk/ads](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
EASA 2010-0238-E	Eurocopter EC 225	Repaired main rotor blades
EASA 2010-0240-E	Agusta AB212	Main rotor hub inboard strap

## We can always turn back, can't we?

It seems the crew of a touring motor glider had planned a flight through hilly countryside. GA Met forecasts (GAFORs) in Germany divide the country into areas and provide simple descriptions of the flying weather to be expected in each. According to the BFU (German AAIB), the GAFOR for the general area indicated that flight conditions were generally 'M2' (visibility acceptable but cloudbase marginal for VFR flight), but 'X' (not fit for VFR flight) in one particular area through which they apparently intended flying.

Despite the forecast, the aircraft was seen in that 'X' area, travelling South down a valley which followed the general direction of the planned route. It then disappeared into or behind cloud. Shortly afterwards it reappeared heading Northwards before it was again hidden by orographic cloud. Very soon afterwards, other witnesses heard a loud crack as the aircraft flew into a sheer wooded hillside 60 feet below the top, killing the occupants.

A met forecast is a warning as to what the forecaster considers we are likely to encounter. Experience teaches us that the actual conditions we encounter may sometimes be better than those forecast, but similarly they may turn out to be worse! It is tempting to believe that we have the ability to detect deteriorating conditions in time to turn back before they affect us. In certain cases, where our options are not restricted by terrain or airspace restrictions, that might indeed be possible, but circumstances often change insidiously. As the number of safe options open to us reduces, we need to anticipate deteriorations sooner and take action earlier.



Photo - Police & BFU

## Ground collision

In the AAIB's Bulletin 10 of 2010 we read of an aeroplane being taxied to the fuel pumps and colliding with another - stationary - aeroplane. It seems the sole occupant of the taxiing aircraft was a student pilot with a total of seven hours' flying experience who had completed the syllabus exercise on taxiing and had been assessed as having 'good ability'.

Instructors need to be confident that a student is fully capable of exercising the responsibilities of a pilot-in-command before

allowing them to manoeuvre an aircraft on their own. We need to consider all aspects of the manoeuvre being attempted, and not just the physical handling skill. For example, a student may be able to fly around the circuit pattern without crashing, but if that is his sole capability (perhaps he does not look out for other aircraft, or ignores ATC instructions) he has not yet reached the standard required for flight as pilot-in-command. A similar assessment must be made before allowing him to taxi on his own.

## Occurrence Digest

For many years GASIL has been accompanied by a list of occurrences recently reported to the CAA's Safety Data Department. Much of the information contained in this listing has only been available to GA pilots by means of the printed document.

Amongst other proposed changes to the Digest, the CAA now expects to make copies of the Occurrence Digest available on its website each month. Once that is in place, the intention is to cease production of the hard copy for distribution with GASIL at a suitable date in the future.

## CAA Safety Evenings 2010-11

As previously announced, the responsibility for organising GA Safety Evenings for the coming season has been taken over by GASCo, the GA Safety Council, to which the CAA is a major contributor. The evenings will continue to be of value to everyone involved in general aviation, whatever they fly, operate or maintain, and logbooks will continue to be signed when requested as proof of attendance!

The events so far confirmed for the coming winter are listed below, although readers should note that one or two previously announced events may have date changes. For updated information see the CAA website [www.caa.co.uk/safetyevenings](http://www.caa.co.uk/safetyevenings). Organisations wishing to host a safety evening during the coming winter should contact GASCo on 01380 830584 or by email to [ce@gasco.org.uk](mailto:ce@gasco.org.uk).

<u>Date</u>	<u>Area</u>	<u>Venue</u>	<u>Contact</u>
09/01/11	Morpeth	Eshott Airfield	07703 032793
12/01/11	Elstree	Elstree Aero Club	See CAA Website
25/01/11	Leeds/Bradford Airport	Multiflight	01132 387130
26/01/11	Sandtoft	Airfield Terminal	01427 873676
27/01/11	North Coates	North Coates Flying Club	01652 618808
03/02/11	Penkridge	Staffordshire Aero Club	01889 882871
17/02/11	Plymouth	Plymouth Flying Club	01752 773335
22/02/11	Wellesbourne	TBN	01789 842007
23/02/11	Coventry	Coventry Aero Club	02476 301428
22/03/11	Kinross (Portmoak)	Scottish Gliding Centre	01383 729323
24/03/11	Inverness	Highland Aero Club	01463 713086
26/03/11	Prestwick Airport	NATS Prestwick Centre	01292 692730