

GASIL



General Aviation Safety Information Leaflet

www.caa.co.uk/gasil

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Tone

Last year, the editor received a complaint that many of the articles in GASIL had a patronising tone. Sadly, this is probably quite true about every safety information magazine or leaflet, but it is difficult to see what can be done about it. The articles frequently describe the actions of pilots who should not have been doing what they did, probably because they should not have put themselves in the situation. We know that everyone can make slips, lapses and mistakes. We try to draw people's attention to those because we want everyone to consider how they individually can reduce their own chances of making them, and if we can suggest some simple guidance we do so. However, since there is nothing new in aviation accidents, regular readers read the same advice repeated at relatively short intervals.

That advice is almost certainly simple, and something that if we sat down and thought about, any one of us could suggest. Nevertheless, because it is human nature to make such basic slips, lapses and mistakes, we have to continue to give basic guidance. It is repeated so that, hopefully, when stress starts to reduce our capacity for thinking, the repetition helps us to remember what course of action is likely to be safe (or perhaps what course of action is likely to be unsafe!).

Were the editor to try to make his comments more interesting for pilots with experience and knowledge, there is a danger that the inexperienced would miss the message. Since the whole aim of GASIL is not to entertain but to try to reduce the accident rate, the advice may continue to appear patronising to some, although that is not the intention!

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Returning from Europe

Apart from filing a Flight Plan, UK or EU residents who intend flying from the UK into Europe do not need to follow any specific procedures other than making their first point of landing on the continent a notified (customs) aerodrome. However, the UK AIP at GEN 1-2-1-5 contains specific requirements for those entering or returning to the UK from another EU country. They are required to leave the continent via a notified aerodrome and inform the UK Border Agency of their intention to land in the UK at least four hours beforehand by submitting a General Aviation Report (GAR). An electronic copy of the [form](#), and [guidance](#) on when it is necessary and how to submit it, is available from the UKBA website: www.ukba.homeoffice.gov.uk/travellingtotheuk/beforetravel/general-aviation.

Flight to and from the islands

Pilots who are going to or returning from Northern Ireland, the Irish Republic, the Channel Islands or the Isle of Man are reminded that the Terrorism Act 2000 requires them to depart from or land at a designated aerodrome. However, if they wish to use another aerodrome, they may apply to the Chief Police Officer for that area (in practice the local force Special Branch), but in most cases this requires at least 24 hours' notice.

The specific requirements are contained in the AIP at GEN 1-2-1-5. The designated aerodromes are listed at GEN 1-2 Appendix A, and contact details for UK police forces are listed in the guidance for completion of the General Aviation Report, which pilots are required to submit 12 hours before departure or arrival.

Straight-in approaches

We have in the past mentioned that many pilots have difficulty judging the correct descent slope from a long straight-in visual approach. It seems there may be other difficulties also. It appears that some pilots have difficulty judging how their approach is going to affect others already in the traffic pattern.

This would seem to be borne out by a recent incident. When several miles away from the runway on a straight approach, at least one pilot recently seemed unable to judge the exact position of another aircraft already established on the downwind leg of the runway he was approaching. Although his own landing would require him to backtrack the runway, he apparently considered that he would be able to land, stop, and backtrack all the way to the threshold before the other aircraft was in a position to land itself.

Fortunately for the other pilot, he had the judgement and good airmanship to realise that the pilot on the straight-in approach was conflicting with the pattern he was already established on, and so he extended his downwind leg (not a manoeuvre we normally recommend) in order to make the landing he intended. Since judgement in such circumstances is difficult, perhaps someone can advise the pilot of Foxtrot Whiskey to make an 'overhead' join next time the circuit is occupied, or at least give way to other aircraft already established in the traffic pattern?

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Haze problems

Anticyclonic conditions similar to those which occurred over many parts of the UK in April are likely to return during the summer. Several pilots encountered haze during these April days, and it is worth passing some of their experiences on to others.

Reports indicate that several trips to the East coast, with the sun behind or to the side of the aircraft and poor but acceptable visibility, were followed by rather frightening return flights into the sun, with in-flight visibility which was barely legal. Three thousand metres is not very far, and many found trying to maintain straight and level a challenge with no horizon, nor even ground features to aim at. Many were very grateful for the LARS service; but, with reduced radar availability on weekend and holiday evenings, not everyone could obtain a Traffic Service.



SafetySense leaflet 11 'Collision Avoidance', available like all such leaflets in LASORS and free for download from www.caa.co.uk/safetysense, encourages pilots to climb above a haze layer if possible, to provide increased in-flight visibility. However, the ability to identify ground features is reduced through the haze and, as on several occasions this year, there may be no defined haze tops and no horizon visible below Controlled Airspace.

Careful planning can reduce the likelihood of encountering problems in hazy conditions. Calculate the maximum altitude you can fly so you can take advantage of any haze top. Take note of the sun's position at the times you intend to fly, and consider inserting one or more extra turning points to avoid flying directly into the sun when you need to identify features. GPS can be very helpful, but only if you have included it in your planning and have the route loaded correctly. Take advantage of radar services, and try to complete your flight before the LARS service closes. Consider the effect of glare on approach and landing when your destination runway points into a low sun.

If things get bad, remember that the Distress and Diversion service is always available on 121.5 MHz. If you have navigation difficulties, especially if fuel is low or you may be close to Controlled Airspace, call them, and since you have an urgent message to transmit concerning the safety of an aircraft, call PAN PAN before you reach a state of distress!

Emergency ADs

EASA produces [bi-weekly](#) summaries of the ADs they have issued or approved, which are available through their website 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.

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 2011-0087-E	Thielert TAE 125 engines	Friction disc
EASA 2011-0095-E	Agusta A119	Pilot's control box assemblies

Aeroplane forced landings

Engine failures are fortunately relatively rare in modern aircraft. However, if and when they do occur they present the pilot with a situation he or she has probably not practised since their most recent rating validation flight with an instructor or examiner. We frequently advise pilots to consider the possibility of failure when choosing heights and areas over which to fly, so that they have an opportunity to select a suitable field in which to make a forced landing if the engine fails. You may be able to comply with Rule 5(3)(d) and glide clear of the congested area over which your planned route takes you, but to minimise the danger to yourself and your passengers you also need to be able to make a safe landing afterwards.

Forced landings are taught and practised during PPL training, and there are several ways in which a pilot can achieve a safe landing. Instructors teach the techniques which they have found effective and appropriate for the individual student, so there is no 'standard' way of carrying out a practice (and consequently a real) forced landing, nor is there a standard pattern.

However, there are some factors which should be considered by all who are presented with landing what was an aeroplane but is now a glider. After "fly the aircraft", the first priority is to avoid landing with a tail-wind or excessive cross-wind. We should always be aware of the wind direction when flying. The direction smoke from chimneys is blowing may be misidentified, so don't jump to conclusions. It may assist if you have used a wax pencil to draw a wind arrow on your map, and/or possibly on your direction indicator. You may have set your take-off runway direction on a navigation instrument, but don't just land in that direction - remember what direction the wind was coming from as you took off. If the sun is visible, try to relate the wind direction to it before take-off; "I must land with the sun in my 10 o'clock".

Achieve glide speed and trim the aircraft so you can relax - well, relax your grip at least! The wind direction (and your height above ground) dictates what fields are available to you. You need to know how far your aircraft can glide with the propeller stopped or windmilling. Perceived wisdom suggests that if the field appears closer than your wingtips you will probably be able to reach it in still air, but perhaps not with enough height to complete a pattern, and remember that wind! Once you have chosen your field make a positive effort to make sure you can identify it later; it may become hidden during your manoeuvring.

Many instructors recommend considering a series of 'S'es: Size, Slope, Surface, Surrounds, and Stock. 'Size' is probably the most important consideration. Long thin fields pointing approximately into wind are possibilities, but reduce your options if your approach is too high or too low. Squatter fields allow approaches from corner to corner, perhaps not directly into wind but with enough headwind to allow you to stop before the far hedge. If there are other, perhaps less suitable but 'OK at a pinch', fields adjoining your chosen one, you have the option of using them instead. However, only change your mind if you're sure they really are a better option and you have enough energy to alter your approach path safely - hitting an obstacle may hurt but spinning in will kill you!

Although looking at 'Surface' colour changes can identify hidden fences, do not be too concerned with the field surface unless it is obviously unsuitable. You must expect to suffer airframe damage from crop, stones or rabbit holes, but your aircraft should be able to absorb the damage without seriously injuring the occupants if they are correctly strapped in and you touch down at the correct speed. A similar argument can be made for 'Stock'. However, any 'Slope' visible from two thousand feet or more may be as important as the wind direction; do not land down, or more importantly across, any obvious slope.

The 'Surrounds', referred to by some instructors equally correctly as the 'Approach', must be seriously considered. Hitting a power cable or telegraph wire on final approach has resulted in fatalities. Approaching over obstructions will reduce the length of field available in which to land. Rivers run through low-lying ground, so they, or meandering hedge lines around streams, can help with slope identification. Railway or road cuttings and embankments can also provide an indication of the lie of the land.

A straight in approach to a field, as in the engine failure after take-off case, gives virtually no room for error. A curved approach as practised during glide circuits (we do practise these, don't we?) offers much more chance of landing in the chosen field, because you can control your descent path by adjusting your angle of bank. There is no power available for a go-around or to compensate for last-minute sinking air, so aim initially for a point about 1/3 of the way into the field. This also helps in avoiding unseen low wires between trees on the approach. Once certain of crossing all obstructions, you can steepen the approach with flap or sideslipping (previously practised at a safe height) to round out before your aiming point. Make a normal touchdown - too fast or stalling can both lead to injury.

If height permits, fly a pattern around the field to set you up for the turn onto final. The pattern allows consideration of the 'S'es, and offers time to try a restart if available, but beware of setting yourself up too close on the downwind leg. Carrying out a modified set of pre-landing checks can make the aircraft safe. When you come to 'mixture' select fully weak, 'fuel' selected OFF, and



the magnetos can also be selected OFF. The importance of 'Harness' being tight and locked goes without saying, but know the Flight Manual or Operating Handbook recommendation for the position of the door or canopy locking handles for a forced landing. If you have been trying to restart the engine, or have restricted power still available, these checks will prevent a possible temporary surge in power upsetting your approach path, and moving the problem towards a less suitable field.

After touchdown, brake as hard as you safely can with the control column fully back to reduce the risk of tipping over in soft ground. Steer away from obstacles, remembering that the cockpit area, with its human contents, is your only concern. Having come to a halt after landing, ensure the aircraft is safe (magnetos, fuel, and electrics OFF), and leave the aircraft as quickly as possible with your passengers, even if there is no apparent damage - the engine failed and you cannot see what is happening beneath the cowling.



Aerodrome approach minima

Those registered with the CAA to receive e-mail notification of publications may already have received CAA Safety Notice SN-2011/03 relating to aerodrome approach minima. As a result of the introduction of EU-OPS, there will shortly be an amendment to the AIP Aerodrome section which instrument pilots should read.

Article 109 of the Air Navigation Order (2009) prohibits pilots from descending below 1,000 feet above aerodrome level at an aerodrome with a notified instrument approach procedure if the relevant runway visual range for the runway is at the time less than the specified minimum for landing. The major change which will appear in the AIP at AD 1.1.2 is the method of calculating the specified RVR minimum from the pilot's already calculated Decision Altitude or Minimum Descent Altitude.

EU-OPS encourages the use of continuous descent profiles on non-precision approaches, and this will be reflected in an increased RVR requirement if the approach is conducted differently.

GPS training

Readers may remember that the Royal Institute of Navigation (RIN) last year produced a detailed training syllabus for the use of GPS for visual navigation in aircraft. A copy of the Students' [Guide](#) was distributed with GASIL and GASCo's Flight Safety Bulletin, and is available through the ASI website www.airspacesafety.com, where much other useful material can also be found. The Instructors' Guide was at the time only available through the RIN.

The syllabus has the backing of the joint CAA/NATS/MoD Airspace Safety Initiative (ASI), and thanks to the generosity of several of the industry organisations who are members of that Initiative's Communications and Education Programme, copies of the Instructors' Guide have now been printed and are being distributed to training organisations, including microlight instructors, gliding clubs and all aeroplane and helicopter Registered Training Facilities. Pilots are encouraged to obtain training from instructors using the syllabus in order to make best and safest use of their equipment before relying on it in flight.

Priorities

Pilots training for Instrument Ratings will have been given, indeed probably had it hammered into them, a procedure for the correct use of a radio-navigation aid. The pilot must ensure he or she has selected the correct aid, often using a mnemonic but in any case it is a requirement to identify the coding transmitted by the aid before relying on the information displayed.

It is therefore not surprising that when an instrument pilot recently realised during his initial climb that he had failed to carry out his normal instrument checks before take-off properly and had not correctly set up the navigation aids for his departure, he decided to carry out the full pre-use procedure he had been taught. Unfortunately, as he frankly admitted, while concentrating on that procedure he allowed his instrument scan to break down, and when he looked back at his artificial horizon the aircraft attitude was not what he had intended. In fact he was in a descending turn at quite a low altitude, in cloud.

The pilot in question is the first to acknowledge that correctly carrying out his instrument checks prior to take-off would have prevented the problem in the first place. However, it is probable that other instrument pilots will have found themselves in similar situations, and we are grateful to the reporter for his honesty. In no way do we wish to criticise him, either for his initial error or for being distracted. Rather do we want to remind everyone that such situations can occur, and that despite previous teaching, there may be occasions when that teaching should not be followed slavishly. If for example the instrument indications confirm our previous knowledge of our position, it is unlikely that we have selected the wrong navigation aid. Aviate first - then navigate!

Volcanic ash

It is to be hoped that the recent eruption in Iceland will have ceased to cause concern by the time this is published. On 10 February this year the CAA produced a [guidance document](#) on Flight Operations in the vicinity of volcanic ash, which updated their previously published advice for aircraft owners and operators, and also for aerodrome operators. Paragraph 3 of the document is specifically intended for General Aviation pilots and operators. The guidance has been further updated by Safety Notice [SN-2011/04](#). These documents are available through the CAA website www.caa.co.uk/publications.



USING GPS IN AIRCRAFT for Visual Navigation

A syllabus for training



Instructor's guide



Unusual procedures

The pilot was flying a test to revalidate his multi-engine piston rating. Although the flight had so far reached the standards, the aircraft and instruments were unfamiliar and the flight had lasted longer than anticipated. The final stage of the flight was visual circuits, and two remained to be flown: a flapless circuit and an asymmetric circuit. When the examiner suggested that the two could be combined, the pilot, conscious of the costs of twin-engine flying, agreed instantly.

The circuit would be a challenge, because the runway was not long and there was little headwind, and the approach would have to take account of the other aircraft in the pattern. Having climbed on one engine from the simulated engine failure after the previous take-off, the aircraft was positioned on the downwind leg. As in many twin piston aeroplanes, the pre-landing downwind checks left the gear selection till the descent on final approach.

The pilot felt quite pleased that he had managed his pattern in such a way that he had rolled out on final in the position he intended. However, in attempting to maintain both the approach speed and approach path, the power setting seemed wrong. It was difficult, indeed very difficult, to reduce power sufficiently to achieve both. Eventually, before reaching asymmetric committal height, the pilot made the sensible decision to go-around, on one engine of course with the attendant rudder load, because the examiner was not going to let him off the hook that easily.

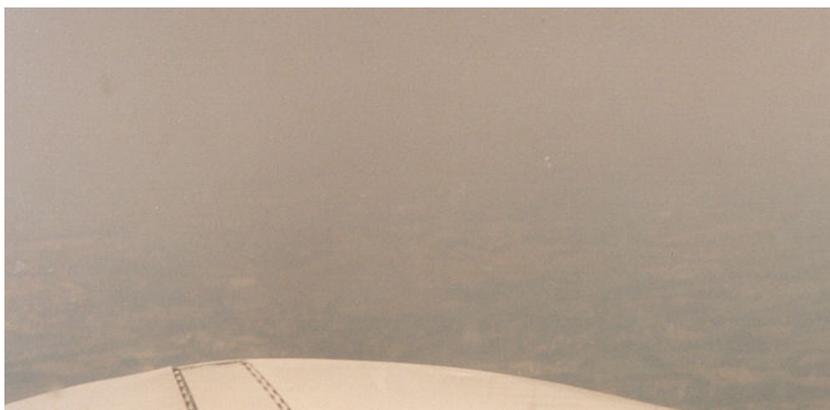
As the pilot's hand went to the gear selector, all became clear. The constant background noise which had been present since the engine had been retarded had been attempting to remind him that at least one engine was at low power and the gear was not down.

We thank the pilot for his honest report, and include it, not to criticise, and not even to remind everyone of the hazards of attempting to cut corners, although instructors and examiners should note the need to be more alert than usual. The real point to remember is that if something appears wrong, we should fly our aircraft into a safe situation before attempting to work out what the problem is.

More haze problems

One of the experiences reported by a pilot during the hazy conditions occurred as he was flying just below the haze tops. He felt an increasing amount of vibration through the airframe. It felt like stall buffet, but at cruising speed and attitude that was unlikely.

Perhaps it was an engine problem? Instrument indications appeared normal. Carburettor hot air had been exercised at regular intervals throughout the flight, and fairly recently, so he felt that was an unlikely cause, but he selected 'fully hot' anyway as he turned towards his base aerodrome. The aircraft checklist was consulted, and he considered the option of switching off the magnetos one at a time in case that might solve the problem.



After what seemed a very long time, but which was probably only about 30 seconds, with the carburettor hot air selected, it was apparent that the vibration had reduced markedly. A short while later, everything was back to normal. On reflection, the pilot remembered that the top of a haze layer is an area where moisture accumulates, and the carburettor icing was indeed likely at that altitude. He now intends carrying out his carburettor hot air checks more frequently in such conditions, and perhaps leaving the hot air selected in the cruise if forced by airspace or other considerations to fly close to the haze top.

Silverstone Grand Prix

AIC [M 019/2011](#) gives details of restrictions of Flying during the Silverstone Grand Prix between 8 and 10 July 2011. The CAA has issued Information Notice [IN-2011/26](#) to provide information for helicopter pilots and operators intending to either land at, or fly in the vicinity of, Silverstone during that period, and includes a reminder that the helicopter operating area at Silverstone itself has recently changed.

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, 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:

17-19 June	Kemble	15 July	Shawbury
18 June	Cranleigh	15-17 July	Cholmondeley (SW Manchester)
19 June	Margate	20 July	Culdrose
20/21 June	Stonehenge	21 July	Cranwell
22-27 June	Glastonbury	22 July	Silverstone
24 June	Leith (Edinburgh)	22 July	Wittering
25 June	Lossiemouth	23 July	Lyme Regis
28 June – 3 July	Waddington	23/24 July	Southport
30 June – 2 July	Chichester (Goodwood)	23/24 July	Windermere
4 July	Feltwell	30/31 July	Sunderland
5 July	Isle of Man	11/12 August	Lowestoft
7-18 July	Fairford (RIAT)	11-14 August	Eastbourne
8-10 July	Silverstone	18-21 August	Bournemouth
9 July	Yeovilton	19 August	Duxford
9/10 July	Duxford	20/21 August	Shoreham
9/10 July	Swansea	3/4 September	Duxford
12 July	Greenock	17/18 September	Kemble
14 July	Shrivenham	16 October	Duxford

Mandatory Permit Directives

The following Mandatory Permit Directives (MPDs) 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 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.

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/subscription > New User Subscription Registration, and choose the 'Safety Critical Information' category.

Number	Applicability	Description
Emergency 2011-004E	Thruster T600	Propeller flange attachment

Words of wisdom

"Either be lucky, or think ahead!"