GA FEEDBACK

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EDITORIAL

As we go to press, we have received 55 reports in the five months since the GA Programme was launched. Most of these have been related to powered aeroplanes and, so far, we have received few reports related to gliders or microlights. We would welcome reports from these groups. Don't worry if you haven't got a reporting form. Send a letter by Freepost or e-mail to the addresses below. Alternatively, telephone us on our Freephone number.

WHICH DIRECTION?

Many take-off and landing accidents occur as a result of pilots not being sufficiently aware of the effect on the aircraft's performance of the runway/strip surface condition or, as in this case, the runway slope and wind conditions.

Some years ago I was flying my Tiger Moth to a strip, with which I was familiar, but on the day presented an interesting problem.

The strip was 500m long orientated N/S with a pronounced 3% slope up on "RWY 36". On the day the wind was southerly at 10 knots. The problem was - Do I land uphill with a 10-knot tailwind component or downhill into wind? Trying to remember the rules of thumb for performance in the case of wind vs slope, I elected to land uphill with a 10-knot tailwind. The landing was made as slowly as possible, but as the tail came down I realised that the wind was pushing the aircraft uphill and it wasn't slowing down. Fearing that I wouldn't stop (no brakes on the Tiger Moth!) I elected to apply full power, get airborne and try again. Now I experienced first hand the effect of tailwind on take off. The tail came up immediately due to the prop-wash but the aircraft's air speed remained very low - around 20 knots. Committed to take off by now I just cleared the end of the runway by a matter of feet and staggered into the air slats fully extended.

Shaken, I landed at another strip nearby to recover my nerves. This time, I called the strip and arranged for volunteers to "wing walk" the Tiger if I landed downhill but into wind. They were duly waiting for me approximately halfway down the strip on the next landing, which this time was downhill, but INTO WIND. This landing, even down a 3% downslope with no brakes, was uneventful with the aircraft stopping about two-thirds down the 500m strip.

This was a lesson I'll not forget. In a Tiger Moth at least a combination of no brakes and a large wing area presented to the tailwind when landing makes a very strong case for accepting even a 3% downhill slope on landing if a headwind component is available.

The effects of various factors on take off/landing distances are described in both Aeronautical Information Circular (AIC) 12/1996 and General Aviation Safety Sense Leaflet No.7B. The information is essential reading for GA pilots. In the above example a 5-knot tailwind would increase landing distance by approximately 20%, whereas a 3% down slope would increase landing distance by around 15%. Also, remember that most light aircraft performance is UNFACTORED. Therefore it is the BEST that you can achieve.

The AIC and GASSL are available on our web page.

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TOO CLOSE FOR COMFORT

We lined up on the departure runway for a return flight to home base.

The R/T instruction from the Tower was "G-#### with a helicopter crossing left to right, take off at your discretion".

I saw a helicopter as described and opened the throttle after the helicopter had passed.

After completing about a quarter of the take off run, I saw another much larger orange helicopter lifting from the grass on the left. It turned and headed on a track to cross directly in front of me. I closed the throttle and started to brake. The large helicopter banked steeply and turned at the edge of the runway and headed south. Thinking the danger had passed, and there was enough

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runway left to safely continue, I opened the throttle and continued the take off ..... Big Mistake.

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As I got level with the point that the helicopter had turned, I was just airborne and hit severe turbulence caused by the rotor downdraught. Full control input was needed, but it was impossible to stop the port wing lifting to a dangerous degree. Fortunately, a few seconds later I was able to climb away normally.

I now treat helicopters with some trepidation and some Air/Ground controllers warily.

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In the last issue of GA FEEDBACK we published a report detailing the failure of a recoil start assembly on a Rotax engine. Following distribution of the newsletter, SKYDRIVE the UK distributors for Rotax engines, who have delivered over 5,000 engines contacted us. Their comments are summarised as follows:

The particular failure reported is only one of two we have ever heard of, in all the years we have been Rotax Distributors. Rotax themselves say they have had no reported failures of the specified part. A failure such as this could be an isolated case of faulty material, or could be due to operational factor or maintenance shortcomings. If, for example, the failure occurred due to excessive vibration from an unbalanced propeller then, unless the reporter is warned, a failure of the replacement part could occur, possibly with worse consequences next time. For this reason, when an aircraft owner reports an unusual failure to us, we like to gather as much information as possible, in order to try and establish a cause, and prevent a recurrence. The minimum information to be of use would be Aircraft Type, Engine Type & Serial Number, Operational Hours and a copy of the engine log with its service history.

Our computer records show that we have never supplied an individual starter cup of the latest type for a 532 engine, although we have supplied complete rewind starter units at a very much reduced price (not for any goodwill reasons, but because we have a surplus stock from when customers of new engines request an electric starter in place of the rewind starter).

Turning to your published report, I note that there are a couple of errors, probably originating from the quoted web site. We are already receiving phone calls from confused engine owners. The part Number quoted for the starter cup is incorrect. This part was originally used on the 532 engine and was discontinued in approximately 1993. The current part Number for the 532 engine is 852422. The original cup fitted to an old engine can continue to be used, but should of course be inspected for damage or cracks when it is removed to service the ignition system (every 75 hours on 532 engine).

Contrary to the information in the article, the above part (852322 old, or 852422 new) should not be used on 503 engines, or on late 582 engines fitted with a hydrodamper. These engines have a starter cup of different depth, and a catastrophic failure of the starter, leading to an engine seizure similar to the one reported, could occur if the wrong part is used.

We take safety very seriously and frequently issue service information and safety bulletins. We have prepared an information pack for PFA and BMAA inspectors, to help inspection of newly built aircraft and to assist with annual permit renewal inspections. We will supply copies to anybody for a nominal charge to cover photocopying and postage. Copies of all the bulletins referred to in the pack are also available.

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NEAR MISS

As I approached ###, I called ### Radio for the airfield information and a standard overhead join at 2,500 feet". I was asked to call when overhead, and was given "Runway 24 right hand circuit, QFE 1000".

Later, on calling "G-## overhead at 2,500 feet", the reply came "Call downwind and final; be advised non-radio aircraft at the threshold and taking off". I identified this aircraft visually and acknowledged the call. I flew a wide dead-side descending turn. I heard only one call from another aircraft during this descent - a very distorted signal with a lot of background noise. It sounded like a downwind call but I could make no visual contact. The aircraft must have been a mile or so ahead anyway. I commented to my co-pilot that it was probably a microlight with a low-power hand held radio. A few minutes later, I made my "downwind" call and flew the leg at exactly circuit height. I received no radio information from the tower of traffic nearby or ahead. I was apparently No 1 in the circuit at that time.

This was my first landing at this airfield, and I had been warned of the tricky final approach to 24. Added to which, a right hand circuit in a high wing Cessna has its own vision problems. My workload was therefore higher than normal, in spite of which I endeavoured to maintain a good lookout, as the airfield and circuit were evidently very busy with a light aircraft Fly-in. My co-pilot gave me additional lookout support and correctly kept me informed of anything he thought I might not easily see.

As I turned on to base leg I heard a call from an unidentified aircraft "Cessna! What do you think you are doing! You are supposed to be No 2!"

The Cessna concerned was unidentified in the message, which seemed to relate to some action behind me in the circuit. As I called "finals" another message asked the tower to "speak to that Cessna on short finals". This was the first serious clue I had that I was the object of these anonymous calls. Trying hard not to be distracted from

the job in hand, I continued my approach and landed. After landing, I was advised that I had flown sufficiently close to a microlight to frighten the pilot.

Reflecting on this incident, as we had no visual contact of the microlight at all on the downwind leg, this means he must have been below me and therefore below circuit height. Added to which, there is no direct downward visibility from a Cessna. I am quite clear that there was no aircraft ahead of me at any visible height during that leg.

Further thoughts:

1. When approaching an unfamiliar airfield for the first time, be prepared for the unexpected.
2. Keep an especially good lookout when close to airfields popular with microlights, and bear in mind that microlights may be flying non-standard circuits and procedures. They also fly very slowly!
3. A radio call from a microlight may be difficult to read; assume it could mean anything and act accordingly.
4. Bear in mind an aircraft directly above you cannot see you.
5. With hindsight, and in the absence of visual contact, I might have been better off calling the aircraft concerned in this instance to establish his/her height and position.

The reporter makes several good points about this incident that are worthy of consideration. Also, it is important to remember that one of the main purposes of the descending turn on the dead-side is to identify traffic on, or approaching the downwind leg. Right-hand circuits particularly in high-wing configurations make this task more difficult. If in doubt don't assume; make an R/T call to confirm the situation.

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IT WILL NEVER HAPPEN ...

I installed a passenger for a first time flight then took my place in the left seat. It was a cold day and I experienced some difficulty in starting. I re-primed the engine, which backfired and started a carburettor fire.

Action:- To passenger "Get out"

Reply: "How do I undo straps?" This I did.

"How do I open door?" This I did.

Now to tackle the fire. I found the fire extinguisher behind the front seats, but needed to exit the aircraft and lower the seat back to gain access to it (no access to fire extinguisher in flight). Fortunately during this period someone had extinguished the fire with an independent fire extinguisher.

Lesson Learned: These incidents do not only happen to other people.

Remedy: Take flight safety very seriously - I now brief all passengers on how to evacuate the aircraft - and the fire extinguisher is now positioned on the front floorboard and accessible in flight.

No damage was done to the aircraft but the time lost in myself getting to it could have been disastrous, as could an in-flight fire - but that only happens to other people!

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BUSINESS -V- SAFETY?

During a stop-over, while on a cross-country jolly, myself and a friend, who is an ATPL holder with over 8,000 hours, found ourselves stranded by bad weather. The weather was 8/8ths cloud @ 300ft a.g.l, with visibility below cloud 5km varying from nil wx to light rain. Having decided neither of us were comfortable flying in this, we found a pub with B&B nearby and sat it out.

Throughout our period of enforced tea drinking the local club/school was flying continuously including circuits/lessons and air experience flights. This necessitated 250-300ft agl circuits with 45°-bank turns within 200ft of the ground. Polite questions indicated that this was normal.

Given that there were farm buildings and a road under this low level circuit, I don't quite see how the 500ft rule was complied with. However, disregarding the law, pilots would appear to have left themselves very little room for manoeuvre in the event of an emergency - also the safety of the low level joins being practised in marginal visibility, nil with no RADAR or AFIS is open to question.

I've no particular axe to grind but I seemed to spend a couple of days waiting to see an accident!

What sort of example does this set for student pilots?

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A GOOD EXAMPLE?

Whilst taking three friends for a local flight in a Club Cessna, I noticed at the pre-take off power check a large drop of 500 RPM and rough running during the magneto check. I checked three times and also ran for one minute with a leaned mixture to clear the offending plug(s), but the problem remained. I returned after informing ATC and abandoned the flight.

On returning to the Club, the Senior Flying Instructor was going to take three persons for a pleasure trip in the same aircraft, so I mentioned the large mag drop and difficulty getting smooth running. He brushed this off as easily rectified by leaning regularly in flight and went ahead with his flight and did not comment in the faults

notified on the daily flight log for the aircraft. My passengers were grateful to me for cancelling the flight and I took them up some time later. Another instructor confirmed that he would have practised what he preaches and cancelled!

The moral surely is "Practice what you Preach", and don't let arrogance and confidence cloud the decision to go! If there was an incident and an inquiry into his flight, he surely wouldn't have a leg to stand on, as I reported the defect in the aircraft's flight log, which would have been produced in evidence.

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RUN OUT!

While flying a Mainair Blade in a rally, the map reading workload was high and I was preparing to cross a MATZ. I was about to change fuel tanks when I ran out of fuel and had to make an emergency landing.

Some time later, flying an old Mainair Flash on a cross-country, whilst on late downwind at the destination, with 4 litres of fuel visible, the engine stopped! I made a quick turn into wind and landed in a field. The old plastic fuel pickup pipe had curled upwards with age. Upon the return flight, I was switching tanks with 6+ litres visible in the tank, when I had the same problem.

I had new pickup pipes fitted and at the same time I fitted an AVLEC fuel gauge and a small "reminder" flashing LED.

Just think, you wouldn't consider driving a car without a fuel gauge, but an aeroplane, we all do.

When I talk to other pilots, they all admit to having run "short" if not "out" of fuel due to unexpected head winds or just engine performance being greedy.

What is the cost of a set of replacement pickup pipes and a fuel gauging system against an unsuccessful forced landing, or worse?

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Of the 15 fatal accidents that occurred in the UK last year involving aeroplanes up to 5700 Kg, loss of control would appear to have been a factor in five, poor weather a factor in three and high ground also a factor in three. The following item appeared in Transport Canada Aviation Safety Letter Issue 1/2000 and is reprinted with their permission.

178 SECONDS

If you're ever tempted to take off in marginal weather and have no instrument training, read this article before you go.

If you decide to go anyway and lose visual contact, start counting down from 178 seconds.

How long can a pilot who has no instrument training expect to live after he or she flies into bad weather and loses visual contact? Researchers at the University of Illinois found the answer to this question. 20 student "guinea pigs" flew into simulated instrument weather, and all went into graveyard spirals or rollercoasters. The outcome differed in only one respect: the time required until control was lost. The interval ranged from 480 seconds to 20 seconds. The average time was 178 seconds - two seconds short of three minutes.

Here's the fatal scenario:

The sky is overcast and the visibility is poor. That reported five-mile visibility looks more like two, and you can't judge the height of the overcast. Your altimeter says you're at 1500 but your map tells you there's local terrain as high as 1200ft. There might even be a tower nearby because you're not sure how far off course you are. But you've flown into worse weather than this, so you press on.

You find yourself unconsciously easing back just a bit on the controls to clear those non-too-imaginary towers. With no warning, you're in the soup. You peer so hard into the milky white mist that your eyes hurt. You fight the feeling in your stomach. You swallow, only to find your mouth dry. Now you realise you should have waited for better weather. The appointment was important - but not that important. Somewhere, a voice is saying "You've had it - it's all over!"

You now have 178 seconds to live. Your aircraft feels in an even keel but your compass turns slowly. You push a little rudder and add a little pressure on the controls to stop the turn but this feels unnatural and you return the controls to their original position. This feels better but your compass is now turning a little faster and your airspeed is increasing slightly. You scan your instrument panel for help but what you see looks somewhat unfamiliar. You're sure this is just a bad spot. You'll break out in a few minutes, but you don't have much time left.

You now have 100 seconds to live. You glance at your altimeter and are shocked to see it unwinding. You're already down to 1200ft. Instinctively, you pull back on the controls but the altimeter still unwinds. The engine is into the red and the airspeed, nearly so.

You have 45 seconds to live. Now you're sweating and shaking. There must be something wrong with the controls: pulling back only moves that airspeed indicator further into the red. You can hear the wind tearing at the aircraft.

You have only 10 seconds to live. Suddenly you see the ground. The trees rush up at you. You can see the horizon if you turn your head far enough but it's an unusual angle - you're almost inverted. You open your mouth to scream but ...

... you have no seconds left.