

GA FEEDBACK

No: 12

June 2002

OPERATIONS IN POOR WEATHER

A significant number of GA accidents are weather related. In some of these pilots encounter poor conditions unexpectedly, but in others...

I am concerned about the standard of airmanship displayed by some of the private aircraft owners operating from ### airport. Recently, a group of pilots arrived at the airfield and we were surprised to see them depart to pick up another aircraft, as they disappeared from view in mist and low cloud at around 100 feet.

Upon their return I witnessed the two aircraft land in conditions that were completely unsuitable for VFR flight, the visibility was in the region of 1,000-1,500 metres and the cloud base was 200-300 feet. The airport has no published instrument approach procedures. One of the aircraft emerged from cloud at around 200 feet due north of the runway, having missed the active runway on its initial approach, before turning steeply towards the airfield close to a built-up area and joining from the dead side at 100 feet prior to landing. The other aircraft completely overshot the runway on its first approach, presumably having caught sight of it at the last minute. The airport authorities take the view that, as ### is not a controlled airport, such approaches are purely at the discretion of the pilots involved.

I myself have witnessed several such incidents involving the same group of aircraft owners over the past year and am concerned not only by the safety implications of their actions but also by the example this sets to other pilots. Such actions leave virtually no margin for error and open the possibility of a serious accident. Just because they possess sufficient ability to land their aircraft in such conditions does not mean that they should!

For those aerodromes that have an Ordinary licence, any pilot operating into the airport is deemed to have been authorised by the licensee. As such an aerodrome would be entitled not to permit an operator or aircraft to land at the aerodrome, unless an emergency has been declared. This can be done on a tactical basis, with the Air Traffic Service issuing an instruction to this effect if necessary.

If it is considered that a pilot is operating below his minima, an aerodrome has recourse to report the occurrence to CAA (SRG), who will investigate and may take action if required.

RELATIVE HUMIDITY - A CAUTIONARY TALE

I flew my helicopter to a large country property that is owned by a friend. I landed at around 1600hrs on a late December day. As this was the first time I had landed at this site, I had a good look around so as to determine my take-off route. The best way out was to the North with a paddock running for about 100 metres before meeting a one-metre fence. About 250 metres past the fence there was several acres of dense woodland.

After our meeting and a couple of cups of coffee I returned to my helicopter about 1½ hours later. Despite it now being night the visibility was good with a clear night and still air. I had landed in a couple of inches of snow and about 50 metres from a lake. As I sat in the cockpit I noticed a slight mist appearing along the lower edge of the front screen. A check of the O.A.T. showed just above freezing. Part of the pre-flight checklist requires that the bleed air heat/demist is selected OFF for take off. This is to maximise engine power and minimise T.O.T. (Turbine Outlet Temperature). The misting in the cockpit, which I assumed was from my breath, was still showing along the lower screen but did not present a flight hazard at this time.

Right, I am now ready to go. Landing Lights on, a cheery wave to my friend and up in to a high hover to check VSI (*Vertical Speed Indicator*) and DI (*Direction Indicator*) response. Everything looking good, a peddle turn to put me onto a North heading for departure and away I go. To my horror within five seconds the entire screen froze over like a white blanket and I was quite literally flying blind. At the point of 'white out' I estimate my height as about 20 ft and forward airspeed around 40kts. There was absolutely no possibility of carrying out a safe landing so a continued take off was the only option. An immediate check of the VSI (*Vertical Speed Indicator*) showed a positive rate of climb and the I.A.S. (*Indicated Air Speed*) was good. I waited

A General Aviation Safety Newsletter

from the Confidential Human Factors Incident Reporting Programme

CHIRP, FREEPOST (GI3439), Building Y20E, Room G15, Cody Technology Park, Ively Road, Farnborough GU14 0BR **Freefone**(24 hrs) 0800 214645 Fax 01252 394290

Confidential@chirp.co.uk - visit our website at www.chirp.co.uk

until I passed through 500 ft before fixing the collective with the friction and then reaching up and turning on the bleed air demist. This system is very efficient and within seconds the screen was clear and the rest of the journey was completed without further incident. I am not sure whether the screen froze up on the inside due to condensation from my breath or whether it froze up on the outside. The helicopter was parked near to a lake in near freezing conditions and there is a chance that moisture formed on the outside surfaces.

Misting/freezing of screens can occur rapidly in some ambient conditions and has been the cause of several fatal accidents.

If there is any possibility of misting/freezing occurring demist the screen before attempting to take-off and, if demist is not approved for use during take-off, reselect as soon as permitted.

RESTRICTED INFORMATION?

On a cross-country flight planned to a destination in Southern England with one passenger, I elected to divert to #### due to reducing visibility and lowering cloud base. The appropriate airfield plate was taken from the Airfield Guide and placed on my kneeboard. The Airfield Guide was handed to the passenger.

Joining and downwind checks were made as appropriate and flaps selected on finals. As aircraft approached the threshold, I attempted to raise the nose for a gentle flare. However, no movement was possible due to the Airfield guide having been placed between the passenger's control stick and his stomach.

On my instruction, the Airfield Guide was quickly removed and a safe landing achieved.

This report illustrates one of the potential hazards of flying with passengers. Use the passenger briefing to stress the importance of keeping hands, feet and objects clear of controls.

IN CONTROL? ... JUST!

In bed too late, up very early, brain fuzzy. Going from ### (Southern England) to Liverpool for early meeting.

Arrived for an early departure from an unmanned airfield. Dreadful weather, strong winds, heavy rain, too bad to go through the London Zone on SVFR, so I had to navigate round the edge.

Got soaked doing pre-flight.

Getting late, programmed GPS as I taxied out. Took off. Moderate to severe turbulence. Autopilot failed. GPS failed. Now navigating around the Zone using combination of VOR/NDB and occasional visual fixes,

having to work out everything off the map on the fly, while hand flying in atrocious weather.

Managed to reset GPS, programmed route back in, but the map display was still dead. Because I was to the west of London CTR there was no problem about Luton zone.

Found resolution of position increasingly difficult, VOR cross cuts simply not tying in with expected position. Becoming clear that I was heading for Birmingham Zone. Still struggling with turbulence and still hand flying.

VOR/DME had me five miles southwest of DTY. This was beginning to feel very odd, so I headed West and try to sort things out.

What had I done? Programmed LIC in instead of WHI. Why? Well you just have to read again from the top and you can see that it was almost bound to happen.

I started ten miles West of where I had planned, because I couldn't get the usual SVFR transit of the London CTR, so I had no accurate track in mind. Strong winds made heading calculation difficult. Unplanned loss of both GPS and autopilot meant that my already tired and fuzzy mind was in overload, especially as hand flying was difficult, both in holding heading and altitude. I reprogrammed the GPS while almost fully occupied with flying and navigating. I do often route via LIC, and I guess "NDB with an I in it" just triggered the wrong response from the addled brain.

Luckily I didn't just fly it blindly but continually cross-checked against other sources; else I might have been a statistic.

This report amply demonstrates the importance of good pre-flight preparation, with a properly planned route on a map utilising all available navigation aids. GPS, albeit an excellent aid to navigation, is not a substitute and can be notoriously difficult to reset in flight.

If you become unsure of your position, remember the option of a 'Practice Pan' on 121.5 MHz.

PRACTICE FORCED LANDINGS

The flight detail was to be a local flight out of ### (Southern England) with the owner and return for some circuits to cover normal and Practice Forced Landing (PFL) approaches.

The local flight was uneventful and the conditions were good, clear skies and good visibility, with the surface wind 210-220/10 increasing through the flight to 210-220/18 with the Southwesterly runway active.

On completion of the local flight the aircraft was positioned overhead the field and the first PFL was executed from that position. A small amount of power

was needed to achieve the field so a climb out back to the overhead was done. An aircraft occupying the active runway interrupted the next PFL and a go round off this approach was flown. The following landing was undertaken as a normal approach and no problems were encountered. After clearing the runway it was decided to practice one more PFL and the aircraft was taxied back to the runway in use.

The climb was undertaken to 1200ft and the circuit was then continued with the power being taken off downwind to practice the PFL. The approach angle, speed and rate of descent were all good, the aircraft crossed the threshold with a small amount of sideslip at 55kts. At approximately 50 to 60 ft a significant sink rate increase was encountered and full power was applied, this did not arrest the sink rate enough and the aircraft made heavy contact with the runway. The ensuing bounce put the aircraft back into the air. Good airspeed for a go round was evident so a go round was called for and committed. Having re-trimmed the aircraft and taken stock of our situation the port wings landing wires looked stretched and bent. It was evident the aircraft had sustained structural damage and a normal but careful circuit and landing was made.

No injuries were incurred, but the accelerometer had registered 4g.

It is my opinion and that of others that we encountered wind shear, and having spoken to some flying instructors back in the clubhouse after this incident, it would appear that some of them had also encountered it that morning.

It is good practice to carry out PFLs on a regular basis, but when doing so in strong wind conditions it is important to consider the possible effect of local wind characteristics on a glide approach.

It is also good practice to report windshear or turbulence, if encountered, for the benefit of others.

TAKE OFF TROUBLE

I am a trainee pilot, rather long in the tooth, with about 40 hours dual and five solo, and was operating from a grass field. My instructor and I set off for a navigational exercise.

As I lined up on the numbers, I was distracted by realising that I had cut off about 30 metres of the runway (quite rightly ticked off) and although I did not realise it at the time my attention was not fully focussed. It was a short take off distance, so remembering to note no red light from the tower and the windsock showing a slight cross wind, it was feet on the brakes, full power and off we go.

Halfway down the runway, Ts and Ps OK, revs OK, but the aircraft was still firmly on the ground, the speed

stuck at 40 knots and we were going nowhere. 'I have control' said my instructor, so I took my hands off the yoke - AND my feet off the brakes.

My instructor was remarkably cool and supportive, although he told me afterwards it was the hairiest moment of his 500-hour career. It won't happen again, my heels will stay firmly on the floor. But, of course, it should never have happened at all - and what if I had been flying solo ?

UNCLEAR DEPARTURE

I was given a Standard Instrument Departure (SID) from the short runway at a major European airport. In order to keep me clear from a commercial aircraft departing on the main runway, I was instructed to turn onto a heading of 200° shortly after take-off instead of the Southwesterly heading required by the SID routing. After a few minutes I was obviously clear of the other traffic and ATC instructed me to "Resume as cleared" or something similar. I read back exactly as instructed, but I did not fully understand what I was meant to do. Was I to:

- 1 Continue radar heading of 200°?
2. Re-establish on the published routing of the SID?

or

3. Route direct to the first SID waypoint?

The frequency was very busy and I did not query the instruction. I was hoping and expecting that I would be given a new heading very shortly, which would remove the uncertainty. However, I wasn't and I found myself in "no man's land" not following 200° and not on the SID routing. As each minute passed it became more embarrassing to own up to my failure to understand ATC instructions. Fortunately, conditions were VMC and after a few minutes I was indeed re-routed. Looking back on the situation, however, I should have requested clarification of the instruction immediately. I recognised the ambiguity straight away and the longer I delayed, the more dangerous the situation potentially became.

Don't assume that it is always your fault if you don't understand an ATC instruction. If an instruction is not clear, request a clarification

PROPELLER WAKE TURBULENCE

With 15 hours experience at the time, I was carrying out dual circuit training using the left grass runway at ###. Operations switched to the right runway, which has a tarmac section, when a twin became bogged down at the threshold of the grass runway.

We turned base behind a Tiger Moth, who announced his intention to land long on the left runway so that he could remain on the grass. Turning finals, I had closed the gap to less than a 3/4 mile, but wasn't the slightest bit concerned - we were using the right runway, we had a lovely view of the Tiger Moth (now slightly above us), and it was a beautiful clear day without a breath of wind.

All was well until about 300'agl when - out of the blue - the port wing dropped 45 degrees in under a second. I managed to catch it easily enough, and the rest of the landing was completely normal - albeit with a slightly faster heart rate than before.

Prior to this event, I had only associated wake-turbulence with following a larger aircraft, and certainly not something the size of a Tiger Moth. With hindsight it is clear we had hit his wake, and - if we had been any closer to the ground - the incident could have been much more serious. As well as treating preceding aircraft with a great deal more caution, I would also now consider an immediate go-around if wake turbulence is suspected, as there is always a chance I could re-encounter it closer to the threshold.

A lesson well learned!

Whereas vortices associated with large aircraft are principally lift-induced and thus are shed at the wing tips or the outboard ends of flaps, all propellers produce a similar vortex as a product of the thrust they develop. A propeller vortex has similar characteristics to a lift-induced vortex in that it descends slowly behind the aircraft and dissipates more slowly in calm wind conditions. Microlights are particularly sensitive to vortex encounters.

The characteristics of vortices and their effects are well described in the CAA GA Safety Sense Leaflet 15B, which is published on the CAA (SRG) website.

STARTING - ANOTHER LUCKY ESCAPE

Long time no fly. Well, I dragged myself and my kit to the airfield and got the aircraft out of the hangar. Then after a thorough check, I began the process of starting the engine. Things did not go well at all because for some stupid reason I had the throttle position ENTIRELY REVERSED in my mind. Three spectators must have had a field day at my antics, trying this and trying that; my arms must have visibly lengthened. On the point of giving up the VW started at FULL BORE. The tail began to rise and I dashed back to sit on it; only then did I realise my error, the throttle was 6MM BACK FROM FULLY OPEN instead of 6MM FORWARD OF THE CLOSED POSITION.

I sat there quite calmly trying to work out what I could do, but of course I could do nothing because if I moved

the result would be a prop-strike and a wrecked engine. I looked toward the spectators and waved and gestured frantically for their assistance; they came on the trot. But what to do? The only way that I could think to stop the engine was to switch the magnetos off or close the throttle, but to do that one person would have to lie on the canopy to stop it flying off whilst a second would reach in through the small aperture and turn the switches off; a third person would add weight to the tail. That was done and there was a sudden silence followed by a very heavy sigh of relief from me and suggestions that I might have been injured maimed or killed, or the aircraft could have flown off on its own. Well, none of that happened, so accept what is: I am alive and I am an idiot. The brakes had held and the stick was held back by the harness, but the tail lifted due to the a/c wanting to move forward.

A microlight flying instructor offered the advice that part of the start up procedure should include a simple spacer clipped to the throttle to limit the tendency to open, or, perhaps better, a string line tied to the ignition switches and anchored to the ground at the rear of the a/c so in the event that the aircraft moved forward the switches would be closed by the string thus stopping the engine. I accept I was a proper twit but I definitely learned something from that.

A common factor in this type of incident is simply forgetting the correct procedure, particularly when not having flown frequently in the recent past. A simple written checklist, set out on a post-card or similar piece of card/paper and containing the most important pre-flight/in flight and post-flight actions, is a most useful reminder.

Whenever possible, a competent person should always occupy the cockpit during engine starting.

TAXI LOOKOUT - A REMINDER

Whilst in the hover on the General Aviation Apron I called ATC for taxi, they replied that after a light fixed wing aircraft that was taxiing onto the Apron, I was cleared to taxi via Alpha to the runway holding point. After the light aircraft taxied through Alpha, it taxied directly towards its normal parking position in the centre of the Apron. This was past the rear of a parked helicopter and directly towards my hovering helicopter. The pilot at this time was looking directly towards his parking spot and NOT looking where he was taxiing which was directly towards me. At this point I pulled collective pitch to increase the hover height and the aeroplane wing passed directly beneath my helicopter. In my view, had I not climbed, I feel certain that the aircraft would have continued its course and collided with me.
