

GA FEEDBACK

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OVER PRIMED!

This afternoon, I took a #### over from another instructor at my club. He reported that the engine had been rough running at approach rpm (approx 1,500) and he was unable to close it down using the idle cut-off, so had to shut it down by turning off the magnetos. It was decided between us that it was probably a mixture problem (on the rich side) and that I look at it on my trip, and land at the maintenance airfield should it need investigating by an engineer.

When my student started the engine, he did not prime, as the engine was still warm. However, it failed to start. I suggested priming, and as his hand reached down to the manual primer, I noticed that it was out $\frac{3}{4}$ of an inch. We may have picked it up in the Pre-Take Off checks, but I think it needs to be stressed that this is an essential check.

On the technical side, the engine was running rich, (hence the rough running at low power settings), and the limited extra fuel flow the primer system allowed to three of the cylinders by the primer knob being slightly out prevented the engine from being shut down by starving the carburettor of fuel. This particular primer knob was of the non-locking variety, the club Pre-Take Off checks state 'Primer - Locked'. *(The reporter subsequently confirmed that the primer was capable of being locked.)*

The Technical Office of the UK Distributors for the aircraft manufacturer was contacted. The Chief Engineer confirmed that leaving the primer out would cause the reported problems. A positive Pre-Take Off check that the primer is fully 'in' and locked was endorsed.

A LITTLE SNOW- A LOT OF TROUBLE

I had been working on my flexwing microlight under the hangar, but with the right wing sticking out. While working there had been a light snowfall.

The next day, when doing the pre-flight check, I had noticed a slight covering of snow still on the right wing. I did not attempt to remove the snow thinking it would just blow off.

On reaching take-off speed, the left wing lifted, the aircraft turned violently to the right, and then turned over upside down resulting in the aircraft being damaged beyond repair.

The presence of any amount of snow or ice on a wing surface can significantly impair its ability to develop lift, whether by modifying the aerofoil shape or increasing the surface roughness. What can appear to be loose powder snow can actually be frozen to the wing surface. Even where this is not the case, the boundary layer effect will allow snow particles to remain up to reasonably high speeds. Even a light dusting of snow will produce a 'sandpaper' effect, which can significantly reduce the lift coefficient of the wing.

Additionally, the presence of snow on the top surface of some flex wing configurations can prevent the wing from taking up the correct aerofoil section and thus, in a case where only one wing is contaminated, an uncontrollable rolling moment can develop as soon as the uncontaminated wing develops sufficient lift.

NEW AIRCRAFT, OLD DESIGN

The Flying Club that I instruct at recently bought a new C172SP. I rarely fly this aircraft but recently when carrying out a conversion onto type for a PPL, I noticed what I think is a fault with this aircraft, or maybe it is general design. When the doors are locked correctly for flight from the inside it is not possible to open them from the outside. In the event of an emergency the doors have to be unlatched from the inside, then the doors can be opened from the outside if the occupants are incapacitated. If the doors are not unlatched for some reason the result could be rather nasty in the event of a fire. I have checked this matter with a licensed engineer but he thinks this is normal with the C172.

GA FEEDBACK is available on the internet at www.chirp.co.uk

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After more than 30 years of commercial operations am I too sensitive?

We referred the reporter's query on door locking to CAA (SRG), who responded as follows.

The original aircraft design was certificated to FAA requirements CAR 3 (1949). Even as recently as FAR 23 (1971), the requirement for certification of this type of aircraft remained the same and states, in general, only "... the aircraft is to be equipped with a door, not near the propeller ..." The most recent update of FAR 23, and indeed JAR 23, now require that doors on new design aircraft are "... to be capable of being opened from both inside and outside ...". It has not been considered practicable to have this requirement made retrospective.

It should be noted that certification requirements permit new-build aircraft of an established design to comply only with the original initial type design standards, unless a change is specifically mandated. Several other aircraft types in this category have doors of a similar design.

WAKE TURBULENCE

A colleague and I were conducting a series of flights in two vintage high-wing, tailwheel aircraft. We were leaving AAA airfield at about 18:30. The radio service had closed for the evening, there was no other traffic and we both lined up alongside each other at the hold for the Westerly runway with a headwind of less than 5 knots. We both knew the airfield and the local area well.

My colleague completed his checks first and lined up to the right of the centreline, I lined up to his left and slightly behind him. This would be the seventh sector flight that day, four into various grass strips, and I was relaxed and confident.

My colleague rolled, the tail came up quickly and he was off the ground in around 250 yards, calling his intention to do an early right turn out. The aircraft I was flying can take off very short with the right technique. I started to roll as my colleague lifted off and was off the ground myself in about half his takeoff run, and kept the nose down to build up speed.

As I eased the nose up at around 65 knots and at about 75-100 feet the aircraft just seemed to stop flying. The controls were sloppy and seemed to have no effect. The aircraft rolled to the left and sank, I couldn't get the nose up but thankfully the bank angle didn't increase.

After what seemed like an age, but was probably only about five seconds, the controls crisped up, the nose came up and it was if nothing had happened.

As I gingerly climbed away, straight ahead, it took me about another five seconds to realise what had happened.

I had taken off very soon after the other aircraft, downwind of him, and left the ground sooner. I hadn't climbed at the same rate as him and so had flown straight into his wake turbulence.

The only experience I'd had of wake turbulence before was on aerotow in a glider. That had seemed rough but the directional control was probably being maintained by the pull of the rope and it hadn't occurred to me that the controls on the glider would probably have been doing very little.

I had read about wake turbulence, I'd even waited a judicious time before departing after a big twin, but it didn't occur to me that the other light aircraft could have created the wake that it did.

As we left the next grass strip that evening for the final leg back home I again took off second - but this time upwind of the other aircraft, a good 30 seconds behind him, and out-climbed him

I was prompted to write to you after hearing of another similar incident.

To avoid encountering wake turbulence, if required to perform a take-off following a preceding aircraft, whenever possible use the upwind side of a runway. Vortices descend and move outwards in still air near the ground after being formed, therefore plan your initial climb to be at least level and preferably above, the preceding aircraft's flight path. If your aircraft's performance does not permit you to climb at the same rate as the preceding aircraft, separating yourself laterally upwind as soon as safely airborne will normally avoid any adverse effects.

Alternatively, and particularly in light wind conditions (Headwind less than 10 knots, Crosswind less than 5 knots), consider delaying the take-off to permit the wake vortex to dissipate.

An additional point worth noting is that a propeller also creates a vortex-like wake and thus can create a similar effect to a wing vortex.

In relation to aerotowing the type of turbulence normally encountered in gliders under tow may be associated with either the prop wash of the towing aircraft, or lift induced vortices. In either case, the significantly greater wingspan of a glider compared to the tug will normally permit any asymmetric rolling tendency to be controlled more easily than is the case in wake encounters involving an aircraft of a similar size or smaller than the preceding aircraft.

CAA General Aviation Safety Sense Leaflet No.15B - Wake Vortex, and Aeronautical Information Circular (Pink) No.17/99 - Wake Turbulence, contain additional information on this subject.

AN UNTIMELY DECISION

Although I am a 3,000 hour PPL, I have never done any instructing, and I am not particularly good at analysing what another pilot is doing wrong. On the day in question I was not PIC, but merely going along for the ride next to another member of our syndicate (we have owned the same aircraft for 15 years). We are based at a 500-yard grass strip, the aircraft is a motor glider, the grass was short and dry, and the wind virtually calm. There are many days of the year when I assess the take-off performance very carefully, often electing to operate without a passenger, but this was not one of those days, and I settled back to admire the view.

Nothing about the take-off run raised any concerns, after all, all things being equal, we would be certain to be in the air after 350 yards, and the (substantial) hedge is only 5 feet tall. I did notice when we reached the usual take-off point that my colleague was bumping the tailwheel on the ground and that we were not showing any signs of becoming airborne. A quick check of the ASI showed between 40 and 45kts - ok because anything over 45kts will be enough to get airborne and we still have 150 yards of runway left. It passed through my mind that, if I was flying, I would raise the tail again and try for a more positive rotation, but no matter, the aircraft takes off from high or low tail attitude with no previous difficulties. I idly checked a few other points, throttle fully open, choke off, carb heat off, pump on, rpm 2900, all normal.

What really made my hair stand on end was my colleague closing the throttle completely. A quick check ahead convinced me that there was no way we would stop before the hedge. He told me later that he thought we did have room to stop, and in any case, we were not showing any signs of becoming airborne, so it was the best option.

Normally at this point in a story, the writer lists the lessons he has learnt, the vital actions he will in future pay more attention to, advice to other pilots, etc. etc. Unfortunately, I cannot report any of these things, since I am still completely at a loss to explain what happened. Almost concurrently with the closing of the throttle, perhaps best described as a direct result of closing the throttle, and despite the fact that the pilot had applied the wheelbrakes, the aircraft took off and flew (glided actually) over the hedge, pretty much at the speed we should have had (50-55kts), and not that much lower either. All that was required was to open the throttle again, and to continue as if nothing had happened.

As I said at the beginning, we have owned the aircraft for 15 years, operated it from this strip for five years, and nothing remotely like this has happened before or since (it was 18 months ago). I can only guess we suffered a strong downwind gust which terminated as suddenly as it started. I like to think that, had I been the pilot, I would

have abandoned the take off when we had just enough room to stop, something both he and I have had to do on marginal days at our strip, usually due to the surface being softer than it seemed. But who knows? This was most definitely not a marginal day.

A significant number of GA incidents/accidents involve a late decision to abort a takeoff. No matter how familiar you are with the strip or the aircraft, always work out the point at which you can stop the aircraft safely. If the aircraft is not airborne or accelerating normally on the ground when you reach your decision-point - Stop and investigate the possible cause.

CAA GA Safety Sense Leaflet 7B contains advice on this and other aspects of Aeroplane Performance.

ANOTHER CASE OF PRIORITIES

Inspired by "The Right Priority" in the December issue of GA FEEDBACK, I am led to confess the following, which did not result in a mid-air, but could have.

I mostly fly gliders but am also a tug pilot. I have a lapsed US instrument rating, so am reasonably familiar with R/T procedures. One day I decided to fly to AAA, a nearby busy GA airfield, for fuel, as the crosswind was a bit too much at the usual place.

As I approached AAA airspace, I contacted Approach. Didn't seem to be much going on, I identified myself and said I was approaching from the North. "Join downwind," they told me, and instructed me to change frequency to the tower. What happened next was my fault. I looked down at my little old radio and set the new numbers in. All of them. Then I looked up ... and there was a low-wing light aircraft just in front of me. I don't think he had seen me at all, just turned and went on his way.

I didn't have time to do anything but dodge him, and I was feeling like such an idiot for having failed to keep a proper lookout at a critical time, I said nothing to the tower either.

I had forgotten what my Instrument Instructor had drummed into me during my training in Texas. "Piecework, dummy. Don't spend long at any task. Piecework. Change a number and lookout again. Don't get fixated on any instrument and forget the big picture."

And then I got told off for turning base in front of some spam can that was doing a five mile final approach!

We tend to be intimidated and fearful of controllers. And do what controllers tell us, sometimes to the detriment of flying the aeroplane. Remember, controllers are there to serve us, not the other way around. And if you are busy, say "Stand by." And if you can't do it, say "Unable." Listen out for other traffic to

get the big picture. Set your transponder. Think before you talk. Keep it short and simple and clear. If they want something else, they'll come back to you.

There are probably few experienced pilots who would not recall from some time in their own flying careers a similar experience to that of the reporter. It is very easy to become distracted with events inside the cockpit, particularly when operating in an unfamiliar environment. If you do make an error, give yourself the opportunity to settle down and sort the situation out without compounding your problems

In relation to the role of controllers, the modern ATC environment can be an intimidating experience for many individuals, particularly those with limited experience. Whilst strict adherence to ATC procedures is essential to maintain safe operations, particularly in busy airspace, remember that ATC is a service provider and in Law the pilot-in-command retains the ultimate responsibility for the safety of his/her aircraft. So, if you question the safety of complying with an ATC instruction, tell the controller as soon as possible and explain the nature of your concern.

INCONVENIENT, BUT THE SAFE OPTION

I was operating a private flight in a single engine helicopter from a Midlands airfield to a destination in northwest England. On approaching the high ground west of Birmingham, it was evident that we were unable to cross the Cleve Hills because of rapidly developing low level fog/cloud, therefore we remained on the leeward side and maintained our height.

We proceeded North, where it became evident that we could not proceed any further and therefore decided to make a precautionary landing, as continuing would have forced us down too low. We landed for the purposes of safety in an open space.

A COMMON AERONAUTICAL LANGUAGE?

We have received many air transport reports about problems encountered by UK airline pilots in France and elsewhere in Europe, as a result of either a poor command of English or R/T messages being passed in two languages on the same frequency. For those readers who venture across the Channel, this report will serve as a useful reminder of both problems.

As a CPL holder I have followed for several years the numerous reports in CHIRP of incidents involving poor R/T and also the use of other languages by both ATC and crews. This incident took place a couple of years ago and I had thought of reporting it to CHIRP at the time. Now that the GA community has been involved, (in my opinion not before time), in the CHIRP process by means of "GA FEEDBACK" I thought I would take the time to report it through this medium. This is a seemingly never-ending

problem and perhaps this report will remind other pilots, especially those flying single crew IFR, to be on their guard.

I was departing from a French airfield on an IFR Flight Plan, returning to the UK. This is a route which I flew frequently and therefore I was totally familiar with the departure procedure which involved a call to Villacoublay Approach (Military) as soon as airborne for further clearance (entering the Paris TMA). My departure clearance had been on a Standard Instrument Departure with an initial clearance to climb to 3500ft QNH.

On first contact with Villacoublay the clearance was confirmed. Some time later whilst at 3500ft in broken IMC the Villacoublay controller passed the instruction in a heavy accent "PROCEED TO CISARO". I had not heard of this before and, assuming it was a modified routing, started scanning the Aerad for this point whilst requesting a repeat of the routing (I remember actually using the word ROUTING in my request). The controller repeated "PROCEED TO CISARO". Not finding the waypoint, I was about to ask him to spell the name when, somewhat agitated, the controller asked me to report my altitude. On reporting "3500ft", the controller then said "EXPEDITE CLIMB TO FLIGHT LEVEL SIX ZERO" which I immediately initiated while reading back. Only when, through a hole in the clouds, I caught sight of an A320 crossing "not that far" below me, did the penny drop that "CISARO" was intended to have been a climb clearance to FL60 which, because of the combination of poor English and appallingly non-standard, and in this case clearly ambiguous, RTF phraseology had nearly caused a disaster. The airliner was presumably working a different Departure frequency, as at no time was I aware of the conflicting traffic on the Villacoublay frequency. That said, ALL other RTF transmissions other than to me were in French.

SMOKE DRILL

The aircraft was the subject of Air Test for the purpose of renewing its Permit to Fly. About three minutes after take-off, whilst in level flight, smoke was seen and smelt coming from the instrument panel. An airstrip known well to the pilot was close to hand and so an immediate descent to land was initiated, switching off unnecessary electrical items on the way. A normal landing was carried out.

Subsequent inspection revealed that a cable loom in the instrument panel was drawn fairly tightly across the back of an engine instrument and the knurled securing nut had chafed through the insulation of the wires effectively shorting the positive and negative bus bars. This was before any fuses or CB's thus no protection was given. Several wires had burned out.

The instrument panel has been returned to the original installer for rectification.

If smoke or fumes appear always land as soon as possible. Chafing can cause serious failures. Consequently, it is good practice to periodically check for chafes in wiring piping and control cables.