

CHIRP GA FEEDBACK

Issue No: 47

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COMMENT ON 'AN INFRINGEMENT LESSON' (GAFB 46)

Report Text: Having just read GAFB 46, the item 'An Infringement Lesson' prompts me to make the following observations.

Some years ago, having called Farnborough Radar for what was then a Radar Information Service and been given a squawk, the radar controller politely asked me to switch from Mode C to Mode A, since my altitude was showing as 1,000ft under the ground.

Back at base the transponder field test set showed that my altitude encoder had failed. I replaced it with a newish spare of the same make / model. Our local avionics man was able to adjust it to a best value of 125ft above reference height. After that experience I took to occasionally asking radar controllers for a Mode C altitude check. Most times the result was 100 - 150ft above what my altimeters said (it's a VFR-only LAA Permit aircraft but with 2 altimeters which are checked annually on a calibrated test rig).

However about two years after the replacement encoder had been fitted I received a Mode C check that put me about 500ft above altimeter indications - quite enough to erroneously show on radar major vertical infringements in various areas around (for example) the London TMA. Back at base the field test set confirmed that the encoder was reading approx 500ft high. There was no possibility of adjusting a discrepancy of this magnitude so the encoder was scrapped and a new one (different make / model, and one highly rated by avionics people) fitted.

I have continued to ask controllers for Mode C altitude checks from time to time, when they are not busy. Based on my experience I would strongly recommend that other GA pilots do the same. It might help avoid spurious infringements and their consequences, and also spurious TCAS / TAWS alerts. In the case of valid encoder operation, it could highlight an altimeter problem that needs urgent attention.

CHIRP Comment: It is essential that any aircraft derived information provided to other agencies is correct. It is important to remember that not only will an incorrect Mode C cause spurious TCAS/TAWS alerts but TCAS avoidance also relies on TCAS equipped aircraft receiving an accurate transponder readout.

Although a Transponder Mode C check is required on the initial check flight for the issue of a Permit, it is not required for the renewal of a permit. The CAA Check Flight Handbook recommends that the transponder be checked. Whenever possible it is good practice to include a Mode C check during a renewal check flight.

CHIRP OFFICE RELOCATION - IMPORTANT NOTE

AT THE END OF OCTOBER 2010, WE MOVED TO NEW OFFICES IN FARNBOROUGH AS A COST SAVING MEASURE. HAVING MADE ARRANGEMENTS WITH ROYAL MAIL FOR A REDIRECTION SERVICE, WE WERE SUBSEQUENTLY ADVISED AFTER MOVING THAT ROYAL MAIL WOULD NOT PROVIDE A REDIRECTION SERVICE AS OUR PREVIOUS LOCATION WAS WITHIN THE QINETIQ SITE AND WOULD REQUIRE ADDITIONAL WORK AT THE LOCAL SORTING OFFICE.

REPRESENTATIONS BOTH LOCALLY AND TO THE CHIEF EXECUTIVE ROYAL MAIL WERE NOT ACKNOWLEDGED.

WE HAVE ARRANGED REDIRECTION ON AN AD HOC BASIS BUT THESE ARRANGEMENTS CANNOT BE GUARANTEED; CONSEQUENTLY IT IS IMPORTANT TO REMEMBER THAT WE ALWAYS ACKNOWLEDGE RECEIPT OF CONFIDENTIAL REPORTS. IF YOU HAVE SENT A REPORT TO OUR OLD ADDRESS AND DON'T RECEIVE AN ACKNOWLEDGEMENT, PLEASE CONTACT US AGAIN AT THE ADDRESS BELOW.

A HOT START

Report Text: Having flown into an airfield in Southern England from my home airfield with no issues, the aircraft was parked for less than one hour on the ground. On start up, everything appeared normal until I went to transmit my 'Taxiing' call on the radio. The radio just clicked back at me, and clearly wasn't transmitting. I tried a few times, adjusted squelch, etc. No joy.

I then checked other instruments and noticed 'BAT' flashing on my XPD. At the same moment the GPS displayed a 'Low Battery' indication. I checked the battery gauge; it was showing less than 10 volts. I then noticed that the 'Starter Engaged' light was lit. I shut down the engine, and then could hear a very loud high pitched whine from the starter motor that was spinning very fast whilst clearly not engaged to anything. I switched everything off, and even pulled wires off the back of the starter button to ensure the circuit was broken. Still no joy and now a light smell of burning.

I got a screwdriver out and removed the 6 screws and 2 piano wire hinges to get to the engine, unfortunately not a quick process. I then rapidly removed the earth terminal from the battery at which point I could take a breath! By now, a reasonable amount of smoke was coming from the motor and the wires from the battery were very hot indeed.

A phone call to a friend and between us we worked out that it was the solenoid/starter relay that was stuck. I honestly think if I hadn't been in mad panic, fairly technically aware, and also very familiar with how to access the engine I could have had a bonfire on my hands.

As it happened, a firm 'whack' with a screwdriver and the solenoid unjammed. Once everything was cooled,

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and I had performed a number of tests, I put it back together and the next start up was all systems good. I'm now replacing the solenoid and will carefully review wiring and the starter motor.

Lesson Learned: Pilots should ensure they are aware of accessing basic components such as this.

CHIRP Comment: Identifying a condition such as that reported as soon as possible is important. Immediately on starting an engine it is good practice to check: 1. Oil pressure rising; 2. Starter Light OUT.

It is worth noting that in the case of a jammed starter solenoid, the battery will continue to supply power to the starter irrespective of whether the aircraft is fitted with a Master Switch.

This report is a good reminder that there are occasions, fortunately relatively rare, when rapid access to the engine/electrics is required. Would you be sufficiently aware to cope?

Also remember, if you are the owner of a Permit aircraft, the sole responsibility for the airworthiness of the aircraft is yours, even if you use engineering assistance. It follows that, if you suffer any electrical overheating problem, ensure that a thorough check of the electrical integrity and insulation of the wiring is carried out before you fly again.

RUSHED TAKE-OFF

Report Text: I As I taxied out, the parachute support plane called, "Five minutes to drop". As I did not wish to be held up waiting for the chutes to be on the ground, I rushed my T/O checks including the VP (variable pitch) Prop checks and the magneto checks. Calling "Checks complete; ready for take-off" I turned onto the runway and rolled.

I felt that acceleration was a bit sluggish but still OK with tons of runway, and although lift-off was made at the usual speed, acceleration and climb were definitely sluggish. Turning downwind (still climbing) and looking round for the problem I realised the magnetos were selected to "L" - rapid selection of "Both" and she climbed away, happy at last!

The obvious lesson? Don't rush your checks and when you call "Checks complete" make sure they really are.

CHIRP Comment: As the reporter correctly notes, checking the magnetos and confirming that both are ON is one of the pre-flight vital actions. When conducting a magneto check on types with a rotary magneto selector a positive check in the sequence 'Left-Right-Both' will assist in ensuring that both magnetos are ON.

'BASIC SERVICE' - CLOSE ENCOUNTER

Report Text: Cruising at 1,500' and in contact with an Air Traffic Services Unit (ATSU) and with their squawk, I was handed over twice to another ATSU with a change of frequency and squawk on each occasion. I received no warning of conflicting traffic until the controller notified me of reciprocal traffic at ½ mile and slightly lower! A Lynx helicopter went past the left hand window as both it and I turned right. Three controllers with handovers had failed to warn me of the traffic.

Later I contacted the ATSU manager to ask why I had only been given ½ mile traffic warning. He stated that ATC were under no obligation to warn of conflicting traffic. It was the duty of Captains to maintain separation.

I asked why they did not warn me before ½ mile and suggested that 1 or 2 miles might have been reasonable but I got the same answer - Captains are responsible for own separation.

Why bother to talk to zone controllers in the first place! This is now happening with VFR traffic skirting zones - not talking on frequencies hence increasing the chance of a collision!

Lessons learned: Even though on frequency and squawking relevant code for military ATSUs do not assume that you will get any assistance.

CHIRP Comment: We have received several similar reports of a pilot expecting to receive traffic information from an ATSU whilst receiving an ATSOCAS Basic Service.

The ATSU manager was entirely correct in pointing out that a controller has no responsibility for providing traffic information under a Basic Service; a controller is not required to monitor a specific aircraft's progress under a Basic Service and may be too busy with other aircraft under his/her control.

If you wish to receive information on other traffic you must request a Traffic Service and, remember, even under a Traffic Service, you are still responsible for maintaining your own separation from other aircraft.

The only ATSOCAS service that will provide you with avoiding action from any known traffic is a Deconfliction Service.

BASIC SERVICE - TRAFFIC INFORMATION

Pilots should not expect any traffic information from a controller/FISO as they are under no obligation to do so outside an ATZ and due to higher priority given to other tasks, might not monitor traffic receiving a Basic Service for significant periods.

The pilot remains responsible for collision avoidance; consequently pilots must maintain an adequate lookout at all times to avoid other airspace users.

A pilot who considers that he requires specific traffic information should request a Traffic Service.

[www.airspacesafety.com/content/ATSOCAS refers]

EN ROUTE ENGINE PROBLEM

Report Text: On a cross country flight to a private strip in the Midlands in a Robinson R44 we experienced turbulence following which I noticed a misalignment of rotor RPM and engine RPM readings. I initially thought that we were losing rotor RPM and prepared for an autorotation. After a little thought, I realised that all other readings were OK. I made a call to a nearby airstrip requesting a precautionary landing.

On commencing a descent passengers could smell burning. I made a PAN call to the airstrip and stated we may have a fire. The runway and circuit traffic were speedily cleared and the 'fire truck' alerted (fire truck happened to be present due to a helicopter doing

pleasure trips). On the final part of the descent passengers complained of a stronger burning smell, resulting in me making a very swift landing.

After making several checks and a phone call with my mechanic we deduced that the rotor/engine RPM gauge had become faulty. The burning smell was attributed to the (drive) belts slipping.

Belts checked - OK. We elected to fly home; aware of constant disparity between rotor RPM and engine RPM.

Lessons Learned: If the aircraft is flying correctly and a gauge tells you it shouldn't be, THINK - Look at the big picture and all other available information.

CHIRP Comment: The reporter acted entirely correctly in electing to carry out an en-route precautionary landing as soon as the problem became apparent.

By making an early decision he avoided the necessity of having to make an autorotation landing; these should only be carried out if there are no alternatives available.

After making a precautionary landing, careful consideration should be given to conducting a further flight without a full engineering inspection.

CIRCUIT JOINING - DISTRACTION

Report Text: I was flying in a PA-28 from my home base to an airfield in Southern England. The weather was a bright, sunny autumn day with a little haze looking towards the sun which was to the Southeast at the time. The runway in use at the destination was north westerly with a right hand circuit; the surface wind was westerly at around 10 knots. The published circuit height is 1,200ft AAL. My home base has a circuit height of 800ft AAL so this is higher than I am used to, and also requires small, tight oval military circuits.

Approaching from the NW a downwind join would have been possible but as I could hear that there was other circuit traffic and visibility to the SE into sun was not particularly good, I decided to join overhead at 2,000ft. As this was a right hand circuit I was leaning across to the right hand seat to look down to confirm my position overhead and when I reached the runway threshold and began my deadside descent I realised I had descended to 1,900ft AAL already.

As I began descending on the deadside I became aware of an aircraft beginning its takeoff roll. As it appeared to be a microlight (C42 or similar) I became concerned that I would catch up with it in the circuit and I became fixated on it. I glanced back at the altimeter and saw what I thought was the needle passing through 1,900ft. In retrospect I now realise it was passing through 900ft. I looked back at the departing aircraft, throttling back and side-slipping to reduce speed to avoid overtaking it. I then realised that I was much too low - lower even than the 800ft I am used to - and looking at the altimeter realised I was passing through 600ft. I immediately applied full power and climbed, turning onto crosswind. The rest of the circuit and landing went without incident (and the microlight was in fact departing so I didn't need to worry about catching up with it.)

CHIRP Comment: It is very easy to allow yourself to become distracted when joining a circuit with which you are unfamiliar.

Maintaining a good instrument scan and continually checking this information with outside visual references will assist in avoiding a loss of situational awareness such as that described [LOOKOUT - ATTITUDE - INSTRUMENTS]. It is also important to ensure that the aircraft is correctly trimmed, particularly in pitch.

ALTIMETER ERROR

Report Text: I arrived at the airfield for a 30-minute local pleasure flight on a nice VFR afternoon. My local airfield is unlicensed, and was quiet despite the good flying weather. My pre-flight checks were performed as normal, and included setting the altimeter to the airfield elevation (120ft).

Take-off was normal. On climbing from the circuit I was slightly surprised at the speed at which we reached our cruising altitude of 3,000ft but as I hadn't flown for a month, I put it down to the cooler air of the autumn and didn't think any more of it.

After an enjoyable flight over the local area, I turned towards the airfield. I set the altimeter to the airfield QFE by subtracting 4mb, and descended to 1,500ft AGL for an overhead join. Circuits at our airfield are 500ft.

At this point I felt the houses below were larger than expected. I put it down to not having flown for a month, but as there was very little traffic, stayed at 1,700ft AGL in case I had not set my altimeter correctly.

Over the airfield I started to descend on the dead-side and realized I was at 500ft AGL rather than 1,500ft. I immediately levelled off and joined downwind, and landed without incident. On landing my altimeter read exactly 1,000ft. Evidently during my pre-flight I had set my altimeter to 1,120ft rather than 120ft.

I suspect that on my previous flight the pressure had been significantly higher. On my 3-hand altimeter the 1,000ft hand had been masked by the 100ft hand, and 1,120ft therefore looked very similar to 120ft.

CHIRP Comment: This is a well known problem with three-pointer altimeters. One way of avoiding mis-setting the altimeter prior to flight is always to set the altimeter to zero before setting the airfield elevation.

Also, pilots should develop the ability to estimate height visually during their initial training to assist with situational awareness. (There are numerous ways of estimating height visually, such as 'Cows' legs discernable at 500ft; sheep's legs at 250ft').

FOOLED BY THE WINDSOCK

Report Text: Three pilots decided to fly two aircraft to a small grass airfield (630m) in Southern England. I phoned for PPR before departure and was told that there were aero modellers flying and nobody would answer the radio (destination was A/G radio).

The wind was 240/08 when we departed and the destination was only about 30 nm away. The cloud base was over 3,000ft, the visibility over the route was >20nm and there was little turbulence.

Both aircraft flew in rough formation until reaching the destination. At that point the other aircraft made a low pass over the runway to alert the modellers to our

intention to land. I made blind calls on the A/G frequency but there was no response.

The pilot of the other aircraft announced that the runway was clear of the models and that the southeasterly runway appeared to be favoured.

Looking down, the windsock appeared to be hanging vertically so the other pilot's announcement did not seem unreasonable.

We were positioned to make an approach before the other aircraft had finished going around from the low pass so we joined on a right base. The approach was very bumpy and the ground speed on short final appeared to be higher than normal. The runway is like a roller coaster and the perspective makes it look different to an approach to a level runway.

We landed but it was more of an exciting arrival! We taxied to the parking area and as soon as I opened the canopy it became obvious that the wind was blowing strongly from the opposite direction! The accompanying aircraft had already gone around twice and so I quickly passed the wind information to him over the radio and he landed safely in the opposite direction on the northwesterly runway.

We later discovered that the windsock had recently been changed and when waterlogged it just hung vertically.

Lessons Learned: What was interesting was that there were 3 experienced pilots between the two aircraft and none of us realised that the windsock was not indicating correctly. The wind at the departure aerodrome was in the opposite direction to the southeasterly runway which should have given some warning.

Luckily nobody came to any harm but there are definitely some human factors involved here. I think that the combination of the windsock not indicating correctly coupled with another pilot suggesting a runway to use was too much to be ignored in spite of the signs on approach.

If your approach looks and feels wrong then it probably is and you should go around! I think that between us we topped up the 'experience bucket' without digging too deeply into the 'luck bucket'.

CHIRP Comment: The reporter is to be commended for submitting this experience. In addition to reviewing the Met briefing for the day, there are other cues available to assist in assessing the surface wind; these include the en route wind, smoke sources and with a GPS comparing airspeed and ground speed.

MAYDAY - WHAT TO DO?

Report Text: I picked up a MAYDAY transmission this afternoon - and made a complete hash of it; I'm passing this on because it's worth us all knowing.

I'd just departed my base (Northern England) and switched to an adjacent airfield frequency, just listening out - when I heard "Mayday, Mayday, G-## Engine Failure".

It was transmitted in a completely relaxed tone and on the airfield frequency rather than 121.500, and I took it to be a practice engine failure exercise.

It wasn't - it was real; the aircraft landed with slight damage.

Between hearing the call and thinking "I wonder if I should be passing that on" I realised;

1. I'd only part-heard the message at receiving quality 4; I didn't have any more than 'the above' which is pretty useless
2. I'd nothing to write with to make a note or to take instructions.

As it happened, about a minute later I heard the Controller respond, asking if the crew needed assistance when they landed; shortly afterwards the aircraft itself called 'safe on the ground' and a bit later another aircraft overhead reported two crew in sight and apparent damage to front cowling.

I guess I'd have failed my radio exam.

I've learnt, though, that after the 30 seconds of silence I should have asked the airfield if it WAS real - and if they'd got it.

For information, I put the above around my flying club e-mail net & got a variety of responses to the effect that "you cannot practice a Mayday, only a PAN".

I have, as a result of this, put up a handwritten notice on the Club notice board "A MAYDAY is ALWAYS REAL - it is NEVER a practice" - I think that a properly produced notice to that effect could usefully be circulated in the flying magazines.

CHIRP Comment: The club notice is an excellent initiative on the part of the reporter.

The correct procedure if already in contact with a military or civil Air Traffic Services Unit is to make your MAYDAY call on the frequency in use.

If you hear a MAYDAY call on the frequency that you are using, you must maintain radio silence until the MAYDAY is cancelled or terminated. CAP413 - Radiotelephony Manual: Chapter 8 - Emergency Phraseology contains further details and is available on the CAA website.

ANYTHING TO REPORT?

Due to publishing/distribution costs, we have not included report forms with this issue of GA FEEDBACK.

We welcome reports on GA topics. If you would like to submit a report to CHIRP, you can do so by the following means:

- Submit an electronic report via our secure website
- Download a report form from our website and post/fax it to us (see P1 for details)

www.chirp.co.uk

If you require information or assistance with a report, you can telephone us on 0800 214645 or send an e-mail to: confidential@chirp.co.uk