

CHIRP GA FEEDBACK

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EDITORIAL

Data Chips

An investigation into a CHIRP report about avionics data chips revealed that the original data chips had to be replaced because the database grew too large. This only became apparent to users when the database could not be uploaded at one of the planned refresh dates; users were required to purchase the larger chips in order to download current data. Clearly manufacturers need to keep the user community better informed but even with better information there would be a temptation to fly with the old chips and out-of-date database. This would be as unwise as operating with out-of-date charts, approach plates etc. Software updates can cause similar issues. In one example a software update for tablets was incompatible with cockpit remote GPS receivers. This was not evident until connections were attempted in the cockpit. There are two lessons associated with this. First, after any software update, and preferably before any flight, undertake a thorough check of the functionality and connectivity of your equipment and devices. Second, always have a backup in case electronic devices don't work. You know what is coming next – it is always advisable to carry a paper chart with a line on it.

RT

A comment we received about FEEDBACK mentioned the quantity of RT that makes it difficult to make timely transmissions to ATC and difficult to communicate within the cockpit. ATC procedures around aerodromes seem to contain far more repetition of information than hitherto and ATCOs are more likely to speak than not, prompted by their duty of care. Meanwhile pilots do not always use standard RT phraseology and often add superfluous words such as please, thank you and 'Sir' (yuk!). It behoves all of us to minimise our RT to the essential minimum using standardised phraseology; also to know what we are going to say before we press the transmit button. For those of us devising ATC, FIS and A/G procedures tailored to our specific locations, we need to minimise repetition of information on the ATIS and eliminate entirely warnings about hazards and restrictions that are published in the AIP or other appropriate publications. Then we will have time on the RT to pass the messages that are really important.

VFR & IFR

A recent CHIRP report has highlighted the problems that can arise when IFR and VFR traffic mix in Class G airspace. The feather on VFR charts provides an indication of where this can happen but there are no such obvious clues about the instrument holds or patterns. If there are instrument procedures flown at your home base or neighbouring aerodromes, researching where they are is a good idea. You don't have to avoid such areas – it's Class G where you have every right to be and where the normal rules of the air apply. However, self-preservation as well as airmanship make it a good idea to minimise the time spent

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in any IFR hold or thoroughfare and to call the relevant ATCU on the RT. Also, transponders (when fitted) should always be ON and squawking with Mode C selected.

Ian Dugmore - Chief Executive

NARROW SQUEAK IN THE TWILIGHT ZONE

Report Text: I wish to express my gratitude to one anonymous air traffic controller who recently saved my bacon. I was on the final leg of my three-cornered cross-country solo navigation exercise. All had gone well except I was late heading back, thanks to delays at []. I was returning to base and contacted Approach with a Basic Service. It was still at least half an hour from sunset but the sky quickly grew very dark as thick clouds arrived overhead from the west. Even so, at 12 miles DME I confirmed my position by reference to a motorway junction which I could recognise even through the gloom. Navigating by map and eyeball is not easy by twilight, even when car headlights show you the lie of the roads below. It didn't get easier. I was following a VOR radial, as I had done several times before. I had recently checked the Direction Indicator (DI) against the compass, which was becoming increasingly hard to read and it was also swinging about a bit; so the DI adjustment was my best guess rather than a certainty.

This is where I made the mistake of following the DI to maintain heading rather than the VOR, whose needle started to move to the left. I must have moved on to a real track some 10 or even 20 degrees off from my desired track. The VOR was telling me the truth: that I was off course by two or three miles. The DI was wrong; but with the compass impossible to see in the dusk, I couldn't correct it. And laughable though it might seem in the cold light of day, I didn't know how to turn on the instrument panel lighting that would have illuminated the compass! Neither I nor my flying instructor had ever envisaged that I would need to do so. Nor is checking the panel lighting part of the standard PA28 checklist, and I was loath to start pressing unknown buttons in the dark.

At which point the DME cut out on me (a fault I reported on landing). But out of the blue - or black, by this stage - the Approach controller called me and said I was in danger of infringing Controlled Airspace. He advised me to head south east immediately. I acknowledged the message and turned but admitted I was unsure of my position (doubly unsure because of the DME failure, though I didn't say so). So we did the QDM routine, and he gave me a heading to fly. I wasn't sure, with a misaligned DI, how much that was going to help. But not long after that - and thanks to the darkness - I could clearly see the runway lights dead ahead. I told him so, and he authorised a straight-in approach.

Lessons Learned - Students should be shown how to turn on instrument panel and cabin lighting even when no intention of flying at night. This knowledge should be tested in the final PPL/NPPL/LAPL exams and should be included in the pre-flight check list. Pilots should be advised to carry small torch in top pocket, even when not intending to fly at night and don't be ashamed to ask for QDM at the first sign of trouble.

CHIRP Comment: A really good report in which several slices of the Swiss cheese aligned to create a difficult situation and a good save by ATC. The reporter is commended for this honest report and for correctly identifying important lessons with which we agree. We would also emphasise the importance of explaining to ATC as completely as possible the nature of any problem; help them to help you! Dealing with ATC can be intimidating for inexperienced pilots but students should be encouraged to highlight their student status and use plain English to explain a problem if the situation requires it. In the circumstances described by this reporter more explanation could have helped at the departure and destination airfields.

There are also some good lessons here for instructors and ATCOs. The reporter had been told to be airborne on this last leg of his cross country by a specified time in order to make it back to base in daylight. He was held up by ATC delays during his arrival at [] but checked in with his flying school Ops Manager (his own instructor was airborne with another student) with time to spare prior to starting up for the last leg. However, he was held up for 25 minutes after starting and eventually took off 9 minutes after the deadline. From a Human Factors perspective it seems likely that most pilots would do the same for the sake of 9 minutes: the domestic issues of having to retake the test, leaving the aircraft away from base, getting home by public transport would all lead most of us to press on for the sake of just a few minutes. Arguably the deadline was too tight but during the winter months it would likely have been difficult to fit everything in to accommodate the student's availability, good daylight and suitable weather. One measure

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that might help avoid similar situations is for instructors to telephone the ATC supervisors at land-away destinations to alert them to unusual factors regarding student flights. ATC at the departure airfield should have been aware of the status of the flight anyway from the call sign prefix and might have questioned the departure so late in the afternoon; however, a phone call could have raised the profile and, in this case, perhaps ensured departure before the deadline. Furthermore it is good practice for any pilot planning a land-away to telephone his destination shortly before departure to introduce the movement and check on late warnings etc. For another example see the report later about Communication and Cockpit Organisation.

CAUGHT ABOVE CLOUD

Report Text: I went to the airfield yesterday with a friend of mine. The idea was to fly to the coast, land out at a local field for a cuppa, then return to base.

The weather wasn't brilliant and a low cloud base delayed our departure, but it started breaking up as forecast and the blue bits of sky started opening up all around us. So, we got in the [flex-wing], and set off for a quick circuit. The cloud base was about 1000ft and we quickly went through a hole and climbed above, and were above at about 2000ft, looking out over this very clear layer of cloud, but all time in sight of the surface. We dropped down under the cloud, then scooted back to base to fill the tank and make sure we were all set for the trip.

Off we set, climbed above again, it was much nicer up there, and I navigated to the coast via Sky Demon and the roads on the ground. However, as we approached the coast the cloud thickened and we started to lose sight of the ground, so we turned round and went back home. When we got there, it was completely closed in. We could not see the ground at all. In a panic, I went for a gap in the clouds that looked like a deep valley does from the air. My thoughts being that it wouldn't be far through that valley to the underside of the clouds. We were then totally blacked out in cloud and at that point I thought "stuff this" and decided to climb. I jammed my foot on the throttle and pulled the bar straight and watched the compass to try and keep flying straight. This I couldn't manage because the compass was the other orientation, and turning left had the wheel going the other way. I didn't have a clue what sort of speed we were doing, or which way was up, but we must have been close to VNE, the wind noise indicated it.

Now we weren't going up with my foot jammed on the throttle, we were going down, and reflecting on it now, we must have done a sort of wing over as I tried to climb, but anyway, suffice to say we popped out of the bottom of the clouds within about 10 or 20 seconds. As soon as I saw the ground I steadied the ship and scooted back to the airfield with my legs literally shaking.

It could have easily been fatal. The airframe was under a lot of stress, I've just checked the log on Sky Demon and the maximum speed reached on the flight was 124 mph. That must have been in the spiral dive.

Note to self: stay close to the airfield in those conditions, and if the holes start closing up, find one and get below ASAP. That's what I would have/should have done differently and all would have been fine.

Lessons Learned - If climbing above cloud, always keep an eye on the clouds and if it starts to close up, get down ASAP and land out if necessary. Better to be alive hitch hiking than dead flying.

CHIRP Comment: A close shave! Thank you for this honest and open report which contains some excellent reminders about the dangers associated with climbing through holes in the cloud. We agree with the reporter's summary of what he should have done differently and add a few additional points for anyone who, despite their best efforts, is caught out in a similar way. The overriding point is that anyone who is not qualified to fly in cloud should avoid risking having to do it. This would begin with a good aviation met forecast. For those who have not seen it, the Met Office offers a free [General Aviation](#) service which provides textual and graphical information. When considering the weather, the legal limits for VFR must be adhered to but it is important to consider what is sensible and fun; flying in very poor weather is unlikely to be enjoyable.

Once you are airborne, NEVER climb above cloud with a base so low that you can't pick a landing field when you get back down through the gaps, and carry enough fuel to allow for having to divert around the cloudy areas. If above cloud always look around, including behind you, to make sure the gaps are still big

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enough; do not rely on “it was OK when I left”. ‘With the surface in sight’ should mean you always have a landable field visible, not just a bit of ground. How much cloud cover you accept is down to your own personal risk appetite. A reasonable compromise is that scattered cloud may be acceptable but broken would not, so if you can’t see more ground than cloud, don’t push it.

If you do get caught out, don’t panic. Stay in visual flight conditions and consider your options. It may be best to climb higher if you can to allow you to see gaps at a longer range (you do have lots of fuel, don’t you?) If you have a radio call D&D to check for an area of gaps, or of suitably high cloud base. There can be a natural reluctance and embarrassment to admit on the RT that you need help but this is a crucial decision point. It is far better to seek help early than to wait until you are out of options. Remember, D&D and all the resources they can bring to bear are there to provide you with assistance as soon as you ask for it.

If you decide you have to descend through cloud, set the aircraft up straight and level in trim. Reduce power steadily and sort out yaw prevention and control positions while still in clear air, and try to stay relaxed as you descend. Do not watch the cloud segments passing you. Flex-wings are very stable and provided the cloud is not too turbulent the aircraft will descend nicely in a straight line without any intervention from the pilot. Try it for yourself and practise in clear air to gain confidence. Hopefully you will never need to do it for real!

COCKPIT ORGANISATION/COMMUNICATION

Report Text: Preparing for the flying season, I created new Word documents to better organise my flights. My first time using these new documents was a flight to []. Weather was CAVOK and 40k+ visibility. On approaching my destination, service was terminated by [Area] Information and I contacted [] using my shiny new sheet of frequencies, created just a couple of days before on xxx.475. This frequency was incorrect and I should have been xxx.45. A typo.

However, I have flown into [] many times before and the A/G service is not always manned. So, I continued with blind calls on the wrong frequency, keeping a good look out as I have done before.

Surprise. I was met by the airport manager who challenged me about my actions (he did, however, accept my explanation). There was parachuting at the aerodrome that day, so he was obviously concerned for safety.

Lessons Learned - Be careful when creating self-briefing documents. I see myself as meticulous, but made a mistake in transposing a frequency from Map/Pooleys to the Word document.

Double check frequencies against the Map/Pooleys if no 2 way comms made. I trusted myself in this case as I was quite used to [] not being manned. Unfortunately, it was one of those times where contact was almost a necessity due to the parachuting.

No real safety issues as I maintained normal good look out on approach and in the circuit, and it was at my discretion (A/G 'Radio' frequency). However, I think a couple of lessons on organisation and communication well learned today.

CHIRP Comment: How frustrating that well intentioned and conscientious preparation for the new season should turn out badly! The majority of accidents in aviation are the result of human errors and transcription errors are very common; it is always better to cut and paste if possible. Alternatively NATS publishes cockpit-size frequency charts as part of the 28-day AERAC updates; for details follow [this link](#). It is good practice to telephone any land-away destination – just in case. In this occurrence the reporter would most likely have been told about the parachuting and would then have been more suspicious when there was no reply on the RT. Whenever there is no reply on the RT the assumption should be that there has been a mistake dialling the frequency or there is a problem with the radio. That there is nobody there is the last option because it has potentially the most serious consequences if incorrect.

INFRINGEMENT OF CLASS D ZONE

Report Text: Yesterday as the instructor i/c I infringed the class D airspace at []. How did I allow this to happen and what could I have done to prevent it? The purpose of the flight was to give the newly qualified PPL, who had learned to fly at a non-radio site, experience talking to controllers. I felt we had planned very

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thoroughly - meeting the day before the flight to plan, which included calling [] to discuss the most convenient level for us to transit and even looking at landmarks on Google Earth. The outbound flight went well transiting the Zone (the controller was clearly busy but went out of his way to accommodate our non-transponder equipped aircraft). Over extended coffee at [land away airfield] we planned the return to our departure airfield. My student wanted the way back to be 'lighter' on the radio work and so we planned a route that would be outside CAS but parallel the boundary of the Class D. Nevertheless I insisted that we still get a Basic Service from the LARS frequency as I believe that contact with relevant controllers always enhances safety – as it happened this was my one good decision. The first half of the leg which mirrored the zone boundary about 3 miles distant went perfectly so much so that the handling pilot could not see the mid-point ground feature so I did a very steep 360 turn to let her see what was below the aircraft and then let her continue on heading. Knowing we were close to the boundary I monitored the DI carefully and she stayed on heading. I had just started to think we were a little off track but discounted the evidence of my eyes as P1/S had been keeping a constant heading (which had worked-out so well thus far). Things then started happening quickly, the [aircraft] we had been watching on our left was turning right towards us (about 8 miles – similar level), and the controller called us telling us we had strayed into the zone (about one mile) and turned us right. Throughout the flight and once home, I kept trying unsuccessfully to understand how it could have happened. Finally it has 'dawned'; I now believe the very steep 360 orbit over the mid-point took the DI out of sync and so even though P1/S appeared to maintain heading we were in fact flying left of track.

Lessons Learned - The return flight is worthy of as much detailed planning as the outbound and I should not have planned a route with such a small margin of safety from the zone boundary. It would have been wise to have had a fool-proof way of monitoring proximity to the boundary (for example saying, 'I must always have a specific feature e.g. road /railway on my left') and as soon as I suspected we were drifting north, knowing how close I was to the boundary, I should have acted. Finally to check /re set the DI after any extreme manoeuvre. I am now buying a NATS AWARE GPS set.

CHIRP Comment: The reporter has said it all. Thank you.

NOT RESPONDING TO PANPAN

A recent report from an ATCO explained how he missed a PAN call in which the word 'PAN' was omitted from the start of the transmission and added to the end of what began as a routine non-emergency RT message. The controller accepted responsibility for not reacting to the word PAN but there was a lot going on in the control room at the time and he simply did not assimilate the word PAN. The lesson from this is to make the declaration of an emergency as clear as possible by using standard RT phraseology and, in this case, beginning the transmission with, 'PANPAN PANPAN PANPAN'.

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