

# CHIRP

Confidential Human-Factors  
Incident Reporting Programme

# Aviation FEEDBACK



Edition 90 | Nov 2021

# GENERAL AVIATION



## So, what almost happened?

Are there things that others would benefit from knowing about when you 'saved the day'?

There's an understandable tendency in aviation safety to focus on retrospectively fixing things that have gone wrong when what we really need to do is anticipate problems before they arise so that we can prevent such failures in the first place.

Incident reporting often retrospectively generates reactive lessons that are known as 'lagging indicators'. Modern safety management systems also try to focus on precursor lessons (also known as 'leading indicators') from reports about the behaviours, cultures and corrective actions from routine, normal operations before an accident or incident occurs.



Director Aviation:  
**STEVE FORWARD**

In short, we also need to focus on reporting 'what went right' when problems were dealt with during normal day-to-day activities rather than simply 'what went wrong'.

Looking at hazards, previous accidents and incidents to prevent future bad things from reoccurring is of course necessary, but learning from what people have done to prevent such deviations in the first place means that we can promote real safety management over simple risk assessment as we try to ensure that as much as possible goes right. That requires people to report things that 'almost happened', therefore highlighting safety-related issues that could draw attention to potential

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### CONTACT US

01252 378947  
mail@chirp.co.uk  
reports@chirp.co.uk  
chirp.co.uk



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problems that have yet to manifest themselves. But, in order to do so, we need healthy reporting cultures where people feel that they can report without fear and in the knowledge that concerns will be actively considered and addressed.

So, as we emerge from the pandemic, we must not lose sight of 'what went right' in our activities over the last few months as well as 'what went wrong'. It's tempting to be lazy and opine that "not much went right" but that would belie the significant achievements made by all those who were battling against a previously unexpected phenomenon in very uncertain circumstances.

Those lessons, and the ones we've experienced as we return to flying, need of course to be documented for the future so that we don't begin the next crisis from a standing start. But we can also all look ahead as the aviation world wakes up again and try to identify 'leading indicators' that might serve to highlight things that could be about to become a problem. What went right when resolving problems during your last flight, engineering activity, controlling period, ground handling task etc?

How can you make sure that those lessons are brought into yours and others' routines? Are there things that others would benefit from knowing about when you 'saved the day' that one time when things started to get a bit uncomfortable? CHIRP stands ready to help publicise issues where we can, including those that may already have been formally reported elsewhere, so that the wider community can benefit.

One of the best ways of learning can be from using the experiences and tales of those who have been there before. This edition sees the first of an occasional feature titled 'I learnt about flying from this' (ILAFFT). I'm sure that there are plenty of things that happen that don't necessarily get written up because the situation didn't escalate and was dealt with at the time but which might just give someone else pause for thought in a similar situation. If anyone has any more such engaging tales that have a definite safety message then please do send them in, we promise full confidentiality!

Finally, looking ahead to next year's flying season, on top of the usual rustiness that will set in over the winter period where flying activities tail off, there will be many new faces in aviation and its supporting roles as we emerge from the pandemic, and plenty of others who were pretty inexperienced before the pandemic and will need refreshing in the many nuances of what it's all about.

Cut them some slack if errors are made, and make sure that within your TEM (Threat & Error Management) assessments you're alive to potential mistakes from all areas in the system: ground handling, flight operations, engineering, ATC and, perhaps most importantly, you and other pilots. Now is a good time to sit by that warm fire and review those procedures and manuals so that you're ready to leap into the air with confidence and clarity of thought next Spring!

### Stay safe!

**Steve Forward, Director Aviation**

## I LEARNT ABOUT FLYING FROM THIS (ILAFFT)

### Can you hear me mother?

I've rented aircraft for the past years and many have been fitted with different avionics that are typically fairly intuitive to operate if only for the basic functions. No need to bother looking at the manuals, how difficult can it be to use a radio?

On the day in question, I was flying in the circuit at a controlled airport, with an instructor, revalidating for the 90-day rule and club currency. The first few circuits were without incident. On the next circuit, having just turned base-leg and about to call the tower for clearance to land, I noticed that the screen on the Garmin 430 Nav/Com unit was blank. This was slightly distracting for both of us so turning away from base leg to extend the downwind leg was a bit messy. The second older radio did not appear to function either and, at this point, we should perhaps have twigged that it was not the box but more likely

an airframe issue. On going back to the first radio we heard a response who, after we had identified them with some surprise, turned out to be Distress & Diversion, who fairly quickly patched our call through to the tower in order that we could be cleared to land.

Upon landing it transpired that the battery was completely flat — we had been flying circuits with the landing light on and the alternator field had tripped at some point. The alternator field circuit breaker was immediately behind the control column and had not been noticed. The fault was, I was informed, later traced to a "wiring issue".

### What did I learn?

1. I had no idea of any reversionary functions for a Garmin 430 when the screen goes blank, or indeed any other radio that I have flown with over the years. Neither did a few fellow pilots who I spoke to. In future it may well be useful to know, assuming a manual is available.
2. The haste/pressure of being in the circuit meant that I failed to check the alternator/ammeter at any point before or after the screen went blank. A quick downwind check in each circuit would have highlighted that all was not well and might have saved us the embarrassment of trying to work out what to do when everything went dark. The wiring issue meant that resetting the circuit breaker may not have returned the alternator and radio to service, or possibly worse.
3. With hindsight, and bearing in mind the reliability of electronics, it was silly to ignore that the older airframe was the more likely cause of the problem than the relatively young/modern box.
4. And the ultimate get out of jail in this case... we both had mobile phones and my instructor had the ATC number in his phone's memory. It would have been the speediest solution to obtaining the clearance but again we failed to use it - I will carry one in future.





## “ CHIRP Response ”

Thank you to this contributor for their frank, honest and thoughtful submission. It's easy to be wise after the event, but do you read through in detail the associated manuals for all the kit in every aircraft you hire? One might have hoped that the instructor would have been more aware of the Garmin's functionality, but there are also some great videos on YouTube these days that run through the basics of many bits of kit.

The pilot hit the nail on the head when they commented that a check of the ammeter downwind would have

identified the problem before things got to the stage they did. Not every aircraft has a voltmeter/ammeter, but most have a low volts warning light so, even if you're working hard in the circuit, don't neglect those important warning light checks just because 99% of the time you do them there's no problem.

Finally, it's worth refreshing your understanding of your airfield's radio failure procedures so that you know what to do if it happens to you or others — the winter lay-off is a good time to review these and other emergency procedures.



## COMMENTS ON PREVIOUS FEEDBACKS

### Comment No 1 – GA FEEDBACK Ed 89 Report No3 – GA1296 – Airspace infringement

Altimetry – What's the point of all those settings? Once again, altimetry issues feature in CHIRP. In FEEDBACK Ed 89 Report No 3, the pilot owns up to infringing controlled airspace because they failed to change from QFE to QNH. It's an easy mistake to make and I can sympathise. What I don't understand is why (apart from the Standard setting for flight levels), we in the UK have no less than THREE altimeter settings (QFE, QNH and RPS) whilst in the USA, they manage with just ONE for everything! The single setting they use over there is the equivalent of our quaintly-named QNH, but on the radio they call it simply "Altimeter".

So what's the point of QFE? If you know the airfield elevation (and it's shown on the chart), then you know the circuit height. No need to fiddle with the altimeter, no cause for confusion! In America they get on perfectly well without it. And what's the point of RPS? The military likes to use it and claims that it assists deconfliction.

Out of interest, I just checked the Barnsley RPS versus the Manchester QNH. The difference?

4hPa - equivalent to 104 feet. Is that the margin of separation that the military are using when we transit their airspace? Of course not – just another needless opportunity for altimeter fiddling, confusion and potential infringement.

If the powers that be are serious about reducing infringement of controlled airspace, they could make a start by simplifying our ridiculous altimeter procedures.

### “ CHIRP Response ”

The debate over QNH vs QFE has probably been going on since flying began in the UK. Practically, the use of QNH in mountainous countries such as the US can partially be traced back to the fact that it's either not possible to set QFE for very high altitude airfields, or to do so would take a long time to wind the altimeter setting from QNH to QFE to set 0ft.

In that respect, the UK is in the fortunate position that most airfields are nearer to sea level and so it's possible to set QFE without much effort — there is a view that it makes sense to do so because, although the use of QNH in the visual circuit holds little fear for those with plenty of experience, it can cause mistakes to be made for those who might be less practised.

We already see plenty of Airprox between aircraft in the visual circuit without people having to do mental sums in the air to calculate circuit height when they join an airfield, so the use of QNH is not without problems. That being said, a number of airfields that are located underneath controlled airspace do use QNH successfully in an attempt to make airspace infringements less likely so its use is not without precedent.

As for the use of RPS by the military, they use it because at the speeds fast-jets travel at low-level they'd have to be constantly setting a new QNH every few minutes. Hence they set the lowest forecast QNH for a region (i.e. RPS) so that they know that they'll be safe if they encounter bad weather and have to pull out of low-level to a safety height. Military controllers therefore also use RPS by default because they're set up to deal with military aircraft that are travelling large distances where there can be quite a significant difference in QNHs.

Whilst on the topic of altimetry, we agree that a raised and harmonised Transition Altitude would avoid a lot of the faff with QNH/RPS vs 1013, but that's another discussion that seems to have stalled in regulatory terms!



## Comment No 2 – GA FEEDBACK format

Sadly CHIRP remains unreadable on a tablet and needs to be printed out. The AAIB has already (a year or two ago) updated its reports to be easily read on a tablet or screen. Please would you do the same.

### “ CHIRP Response ”

When we changed the format of FEEDBACK our intention was to make it more engaging to read with a fresh new format for print and electronic readers. We hope we've achieved the latter, but the result is that there's a compromise in using a 3-column format. We looked at developing an html version that would be responsive to the size of the screen that it's being viewed on but, sadly, resources (money!) are tight and we need to limit the hours and costs spent producing different versions of FEEDBACK.

However, there is a work-around. If you open FEEDBACK in Adobe Reader (which is a free App) on a mobile device then there's an option called 'Liquid Mode' that can be accessed by selecting the ink-drop symbol shown. Whilst not quite as pretty as the published version, this will convert the document into a single-column, indexed document that will be more readable on smaller screens. Unfortunately, Adobe have not yet introduced 'Liquid Mode' on its PC version.



**Legal action is not necessarily an automatic outcome from an MOR**

## Comment No 3 – GA FEEDBACK Ed 89 Report No1 GA1292 – Transponder purposely rendered unserviceable

With regard to Report No.1 in GA FEEDBACK Ed 89, one of the founding principles of MORs (Mandatory Occurrence Reports) is that they are not to be used for any legal action, so the CAA saying that they will carry out such investigations is hardly going to help flight safety.

If they hold to this point of view, I think that the number of MORs and Airprox raised by GA pilots will fall. Moreover, pilots will not even feel inclined to share experiences for fear that the CAA will hear about it, identify the pilot/aircraft concerned and possibly prosecute the individual or anyone else involved. So much for the "Just Culture"! Anything that could possibly be the source of a prosecution will become a personal secret that is never told to anyone.

### “ CHIRP Response ”

The CAA comment in Ed 89 says that 'MORs of airspace infringements are analysed and investigated, and appropriate safety actions are taken to prevent recurrence'.

[Reg \(EU\) No376/2014](#) Article 15 allows MOR information to be used for the 'maintenance and improvement of aviation safety' and that is how the CAA argues it applies to infringements. Occurrence reporting simply provides a vehicle for reporting any safety issue by anyone involved in any aviation occurrence, not just infringements.

Within this, 'MORs' are part of the overall CAA occurrence reporting (OR) system where some types of occurrences require 'mandatory' reports (airspace infringements being one such type of occurrence). Importantly, legal action is not necessarily an automatic outcome from submitting an MOR or other occurrence report — the CAA primarily use them to understand and log safety occurrences; subsequent decisions that are made are not designed to apportion blame.

To put it into perspective, the CAA receives in the region of 30,000 occurrence reports per year from all of the UK's aviation sectors, with most simply being logged and aggregated for information and statistical trends for associated policy and safety teams.

As our article in Ed 89 goes on to state, very few infringements result in a prosecution, and the AIWG (Airspace Infringements Working Group) oversight of the CAA processes is now firmly focused on education and prevention. The most recent statistics from the [CAA Infringements](#) website show that, in October 2021, of the 125 infringement incidents dealt with, only 17 (14%) resulted in further action, 94 (75%) received an advisory letter about the incident, and 14 (11%) were closed with no further action. So the idea that the CAA are actively seeking to prosecute pilots is not reality.

Finally, 'Just Culture' does not mean that those who break the rules or have an incident that results in an MOR should not be investigated, it simply means that if an incident is subsequently considered to have been a genuine error or one-off mistake then any response should be proportionate (i.e. usually education); the corollary being that those who are found to have flagrantly, wantonly, or negligently broken the rules can expect to be penalised even within 'Just Culture'. Out of interest, the CAA have just installed a 'Just Culture Champion' within the GA/RPAS Unit whose remit is to promote trust in the occurrence reporting system and the associated processes.



[Reg \(EU\) No376/2014](#)



[CAA Infringement Website](#)



## Reports

### Report No.1 – GA1302 – Below issued altitude

**Report Text:** We were on arrival to [Airport] doing the ILS. We had been issued a late descent and I had speed brakes out trying to get down to 3000' prior to intercepting the final approach course. As we approached the localiser course the FMS (Flight Management System) did not capture the course and we started through final. I turned the autopilot off to fly back on course at about the same time we should have levelled at 3000'. We were also at the base of the clouds. As I was turning and retracting the speed brakes we hit some light turbulence and continued descent to 2750'. We quickly recovered and were asked about the altitude deviation by ATC.

#### Lessons Learnt:

In the future, I will leave the autopilot engaged to ensure altitude level off. I would also ask for vectors for a more stable approach. ATC did ask if we were able to make the descent and I thought that we could; however, it was a bit too tight and I should have asked them for a turn to lose altitude.

#### “ CHIRP Comment ”

This report from the bizjet community provides a timely warning for all of us about task prioritisation, especially as we return to flying from the post-COVID, post-winter lay-off period.

It's very easy to become quickly overloaded by a succession of tight turns, descents, marginal weather and late instructions, especially when recency and currency might not be what they were in the past. If you are not current, avoid taking on too much at once, and use the automatic systems to maximum effect whenever appropriate if you have them.

The reporter's identification of lessons learnt are spot on, and there are only a couple of things we have to add. Although most GA pilots won't be conducting IFR approaches to the same extent, even

during VFR recoveries and approaches it's worth having a set of predetermined 'gates' such that if you're not stable and sorted in height, speed and heading as you approach your gate, or it's all getting too much at that point, then go around for another circuit or return to the overhead for another join to give yourself more time and space.

A gate could be at the start of the downwind leg, base leg, established on final or any other point in the recovery where you really want to be settled and on parameters.

As those wise instructors say, a good landing starts from the beginning of the downwind leg, so know what you should be aiming for and, if it all looks wrong, then throw it away early and start again. Finally, if you are flying with another pilot then brief them about what you intend to do and make full use of them to monitor what's going on and call it out if a gate or checkpoint is about to be missed.

### Report No.2 – GA1303 – SkyDemon route planning

I was asked to take two club members (an instructor and student) to [Airfield 1] to collect another aircraft from maintenance, and return to [Airfield 2]. I planned a route in SkyDemon for the outbound trip routing east of the East Midlands CTA.

The route, planned at 3000ft, showed as clear of CAS in SkyDemon. As a result I thought that the entire route was clear of CAS at 3000ft – I was wrong. For the return flight I reversed the route in SkyDemon but did not notice that the route now infringed the East Midlands CTA. This is because SkyDemon includes climb and descent planning.

On the outbound route, the planned descent started before the edge of the CAS. On the return however the climb rate meant that I flew into the CAS before the edge of its boundary with Class G airspace. Because the outbound route was planned in SkyDemon including the CAS transit, and I had warnings

suppressed for planned airspace, SkyDemon did not warn me of the CAS.

As I climbed, ATC told me I was in CAS and I turned and descended to leave CAS as quickly as possible: the SkyDemon log shows I entered CAS for 2mins. The supervisor advised me they would have to file a report and, after landing, I called and spoke to them. I was relieved at least to hear that no other traffic had had to be rerouted as a result.

#### Lessons Learnt:

1. When using SkyDemon or other moving map software to plan a route, don't assume just because it is clear of CAS in one direction the same will apply when you reverse the route. Check!
2. Don't assume SkyDemon will always warn you of CAS: if it thinks you have planned to transit it, then that warning may be suppressed. Check the settings.

#### “ CHIRP Comment ”

Route planning using electronic aids has undoubtedly revolutionised the whole process but, as with all things computerised, it's vital that you understand both how they work and the implications of the settings you choose.

The reporter probably won't have been the first person who has been caught out by the reverse-route function, and it's certainly something that deserves to be highlighted as a trap for the unwary. Climb and descent profiles differ greatly in their track distances and so what might be suitable in one direction may not be in the other (especially with strong head- or tailwinds). As a result, it's important to plan both your climb and descent, and fly the plan, because if that planned climb or descent passes under CAS and you don't follow the plan exactly, it's possible to find yourself unexpectedly inside CAS. Unfortunately, in this case the problem was compounded by the reporter selecting the controlled airspace warning off, which meant that SkyDemon assumed that the pilot was happy to enter CAS.

One of our ongoing themes has been understanding the function of the







electronic planning aids that are in use, and this report provides another useful reminder for those who might otherwise also be caught out.

Ultimately, planning aids are a tool and, with or without them, the pilot bears full responsibility for flight planning; over-reliance and complacency regarding planning systems may cause you problems so always do an overall sense check to make sure that what it's telling you is what you really want to do.

In this respect, SkyDemon has a 'simulate' option that will run through the route in sequence, and this should highlight any errors or points of interest — if you have the time, then this provides a good way of confirming the validity of your planning. Fundamentally, the system will assume that you'll do something in accordance with the parameters you set; if you don't do what it expects then you are operating beyond its assumptions and it may not look after you. That includes use of such systems in the air, think ahead and don't just wait for it to warn you about issues and items of interest such as NOTAMs and controlled airspace.

## Report No.3 – GA1308 – Aircraft moving on the ground

**Report Text:** Last Saturday I arrived with my passenger at the clubhouse 20 minutes before the scheduled take-off time to complete all associated pre-departure paperwork. As I arrived, I saw the aircraft depart for the previous sortie and, after checking the auth

sheets, I noticed they would be going way over into my slot time.

As you will appreciate at this time of year, we are now up against twilight, weather conditions and maintaining currency. The aircraft landed and we had a rapid handover, being informed that the aircraft had only 60 ltrs of fuel left. We departed some 50 minutes late (the slot was only 60mins long) and, due to twilight times and fuel remaining, we curtailed the planned sortie. We did however safely achieve currency, so all was not lost.

So we then had to taxi to fill up (low fuel state due to the previous sortie) so as to allow flying the next day not to have to start off by doing a refuel and starting late. All was now beginning to be a little more rushed as we were trying to get refuelled and get back to the hangar before it all got dark — we probably had a good 45-55 mins before it got dark but we needed to get it done.

Refuel all went exactly to plan: no hiccups, pushed the aircraft back across the pan, tidied up, and got in. Now, we were only going from the refuel pan to the hangar, definitely not flying, so I guess the checks were a little "brisk". Mmm, now have you never been there? So it was with a little surprise when on engine start we moved forward, the handbrake was either not on or not fully on — oops. We probably only moved forward two feet, but it was enough to make me stop and really think have I done everything else? What if I'd been right next to the bowser and

not pushed back halfway across the pan?

Learning points for me and maybe others: pressure – was it self-imposed versus real pressure to get it done?; thoroughness – did 'definitely not flying' justify brisk checks?; chain of events – should I have thought about the distractions and knock-on effects of being late, then refuelling to get the aircraft back to the hangar in time?

### “ CHIRP Comment ”

Our thanks to the reporter for this frank and honest report. It's easy to be wise in hindsight but when things start stacking up against you and the clock is running down then that's the time that alarm bells should be ringing and a pause taken for a time-out to look at the bigger picture.

Task focus is a well-known human factors issue where one's horizons narrow down to the immediate task at hand at the expense of almost everything else. In this case, the refuelling and time constraints meant that the pressure was on to cut corners and abbreviate the checks.

In critical situations where we know that certain things are vital, we all no doubt have our own personal 'last chance' anti-embarrassment checks as a catch-all in case we've missed something. A pre-start habitual check of the brakes/chocks/handbrake is one of those situations given that this is one of the first opportunities for the aircraft to 'bite you'!

# CHIRP

Aviation and Maritime Confidential Incident Reporting

## Steve Forward

Director Aviation – ATC, Flight Crew and GA

## Jennifer Curran

Cabin Crew Programme Manager – Cabin Crew

## Phil Young

Engineering Programme Manager – Ground Handling and Engineering

## Rupert Dent

Drone/UAS Programme Manager - Drone/UAS

CHIRP, One Kingdom Street, Paddington Central, London, W2 6BD

01252 378947 | [mail@chirp.co.uk](mailto:mail@chirp.co.uk)  
[reports@chirp.co.uk](mailto:reports@chirp.co.uk) | [chirp.co.uk](http://chirp.co.uk)



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