

# YOU REPORT IT, WE HELP SORT IT

*Posted on 31.05.2023 by Steve Forward*



**Category:** [General Aviation](#)

**Edition** GAFB 96

**Editorial**

## **Publicising occurrences, serious incidents and accidents is the life-blood of learning for others**

As summer rapidly approaches, we're all no doubt looking forward to what will hopefully be a season of good aviation weather and are dusting off our flying kit and equipment as we prepare to launch into the air. Part of the preparation activity is also to dust off our minds and think again about all those aviation complexities and our ability to deal with them. In the spirit of 'Prior Preparation Prevents Poor Performance' what can we learn from our activities last year and also from those who may have been unfortunate enough to have experienced an 'occurrence'?

The [AAIB publications](#) are always an interesting read when it comes to learning from others' misfortunes (their monthly bulletin is published on the second Thursday of the month and you can receive them by [subscribing to AAIB emails](#)). The various association magazines are also a good source of information (too many to name here and I'd risk censure from those I didn't!), as are the

CAA [Clued-up](#) and [Safety Sense Leaflet](#) publications. The collegiate nature of flying has always been a strong source of tips and advice about traps for the unwary, but the reporting of occurrences, serious incidents and accidents is the life-blood of learning, as is the wide dissemination of associated lessons that might be identified.

Thankfully, aviation accident rates are extremely low but they have remained relatively constant over the past few decades and a major challenge has been to develop effective processes to identify key causal factors that in some circumstances might lead to an accident, before the accident occurs. One element of this has been to improve the quality of feedback through not just the reporting of incidents but also the reporting of things that nearly happened (but were averted or didn't develop into a reportable incident) in order to provide additional important information related to contributory causal factors. With aviation being a fundamentally human activity for the most part, some themes recur because we humans are ingenious in our ability to thwart attempts to eliminate errors and mistakes.

Unless things are reported, nothing is likely to change: just moaning in the bar or making anecdotal comments after the event will rarely result in things changing. Modern safety systems recognise 'Just Culture' these days, which means you won't get into trouble for reporting concerns and so we all need to look beyond the 'what's in it for me?' mentality so that issues are passed into and recognised by the 'system' (be it local club or more widely). Anyone can submit a report via the [ECCAIRS2](#) Aviation Reporting Portal as the formal route for aviation reporting in UK, and more guidance on the use of the reporting portal is available in [CAP 1496](#). However, although formal reporting systems make an important contribution to the feedback process, they are less successful in gaining information on Human Factors related aspects. Confidential Human Factors reporting systems were introduced to address this. It is important to understand that the confidentiality part applies to the identity of the reporter, not the information; whenever possible the information is disseminated as widely as possible, but in a disidentified manner so that the reporter cannot be recognised, and only with the reporter's consent.

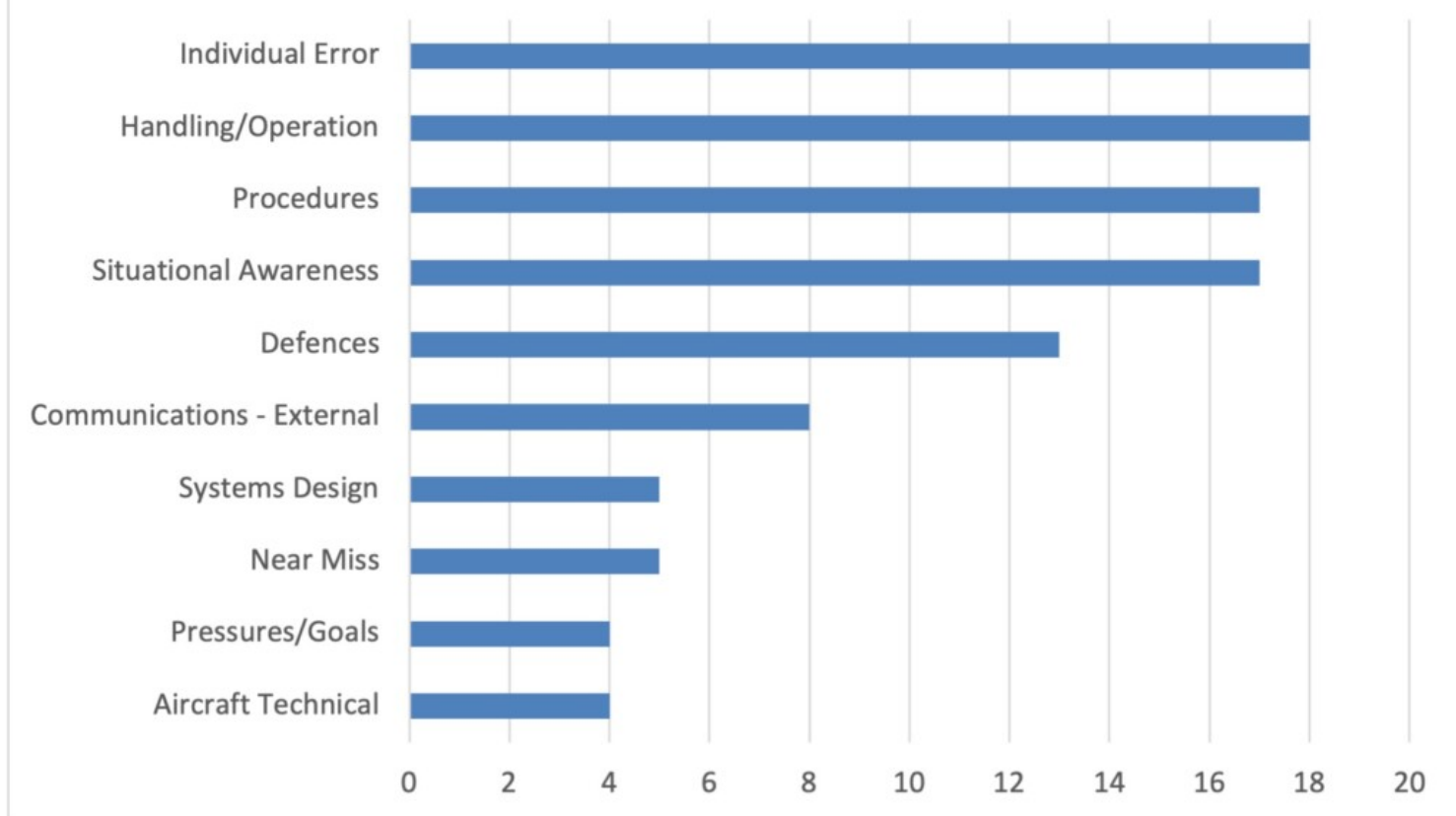
The [UK State Safety Programme](#) acknowledges CHIRP as the UK's independent confidential voluntary reporting scheme. Broadly speaking, CHIRP provides a vital safety net as another route to promote change when all else fails, and for collecting reports that would otherwise have gone unwritten with associated safety concerns therefore not being reported. Reports generally fall into two broad categories: those indicative of an undesirable trend; and those detailing discrete safety-related events, occurrences or issues. We also often act as an 'Agony Aunt' for those who seek our 'wise' counsel or just want altruistically to share with others lessons from what may not have been their finest hour. Beyond that, we often provide information and point people to the right sources/contact points for them to resolve their own issues and, depending on the concern and our resource availability, we also champion causes and act as an advocate or the 'conscience' of industry and the regulator where we can.

A member of the [GA Partnership \(GAP\)](#) group, CHIRP was recently the subject of their 'Community in Spotlight' initiative which highlighted the key elements of our work in the associated [CAP2521](#) information sheet. Essentially, CHIRP operates through the use of four volunteer-based Aviation Advisory Boards comprising members from the principal relevant aviation interests in the UK who provide specialist expertise in the understanding and resolution of issues raised in CHIRP reports.

The four Advisory Boards are titled 'Air Transport' (dealing with all aspects of commercial aviation other than cabin crew), 'General Aviation', 'Cabin Crew' and 'Drone/UAS' (with their associated obvious focus for each). The Advisory Boards are panels of peers who have rigour and credibility as experts in their own right and one of their principal roles is to review reports and issues raised and to provide counsel on the most appropriate way in which specific issues might be resolved. Report information is formally submitted to the Advisory Boards on a confidential basis with all personal details being removed from reports prior to discussion. The Advisory Boards also review the responses received from third-party organisations to assess the adequacy of any action taken in response to a reported concern.

The Advisory Boards are the great strength of the CHIRP process because they provide the breadth and depth of expertise that bestows on us the specialist intellectual horsepower and professional credibility to our work. In addition, the Advisory Boards provide feedback to the CHIRP Trustees on the performance of the Programme.

## General Aviation Key Issues FY2022-23



The bottom line? CHIRP relies on you to report Human Factors related aviation safety concerns to us so that we can both help in their resolution and highlight relevant issues to others. We need your reports! Reporting is easy by using either our [website](#) portal or our App (scan the appropriate QR code shown or search for 'CHIRP Aviation' – avoiding the birdsong apps that come up if you just search for CHIRP and the legacy version that we are about to remove!). In our reporting portal you'll be presented with a series of fields to complete, of which you fill in as much as you feel is relevant – not every field is mandatory, but the more information you can give us the better. Although you'll need to enter your email address to get access to the portal, none of your details are shared outside CHIRP, and we have our own independent secure database and IT systems to ensure confidentiality.



**Steve Forward, Director Aviation**



## **I Learned About Flying From That (ILAFFT)**

### **NIGHT FRIGHT – A minor distraction with some oil loss and a misbehaving autopilot becomes a crisis when a warning light comes on...**

I had been looking forward to the trip for some time. The sortie was from my home airfield in the south-east of England, collecting two people from a local airfield fifteen minutes away and then a day trip to Liverpool to watch a football match. All to be followed by a sunset arrival back at base. My friend was bringing along an acquaintance who was flying for the first time and had agreed to cost-share. Our aircraft, a PA-32R, was fresh out of its fifty-hour check. The autumn morning was crisp and sunny. I had plenty of time to collect my friend and his mate, and even to share a fry-up, as kick off wasn't until 15.00.

During the pre-flight I noticed a few drips of oil on the nose-wheel. The POH stated a minimum of three quarts, recommended eight and gave a maximum of twelve. The dipstick showed nine. Having owned the aircraft through several annuals and fifty-hour checks I knew that overfilling the oil would lead to some being purged overboard, so I moved on, looking forward to the 'full English' awaiting me at my friend's airfield.

After an uneventful take-off I turned on the autopilot. Like painting the Forth Bridge, keeping the AP serviceable was a never-ending task, the most recent issue being a tendency for it to periodically perform a gentle and un-commanded roll to the right. The problem was still present, so I turned it off and enjoyed hand flying the remainder of the flight, performing my FREDA checks which were all OK.

Following breakfast and an uneventful flight to Liverpool the day got better, with our team winning! Conscious that the departure time would get us home thirty minutes before sunset, we exited the stadium only to find the taxi-rank empty. A little annoying but not a show stopper, as I had my IR(R) and night rating, which was current and, priding myself upon my diligence, had planned for a night approach to both airfields. The passenger was a keen photographer and wanted to get some sunset shots over the Mersey so we didn't waste any time at the airport. However, there was more oil on

the nose-wheel and the dipstick now read 7.5. This confirmed my diagnosis that the oil was overfilled and had purged down to about 8 quarts, which is the normal range. The power check showed the Ts and Ps all OK, confirming that all was well. However, the suction gauge was reading a little lower than usual at 4.9in (4.8 to 5.2 being the normal range according to the POH) but these gauges weren't always precise and I was perhaps being over-vigilant given the oil situation and the chance of a night arrival.

Take off brought a stunning view of the Mersey just as dusk approached. Settling to a calm but slightly over-cast evening, we made good progress and I was reminding myself how privileged we were to be able to fly like this.

Flying overhead [Airfield] in VFR, now at night, an orange light startled me. It was one of the three annunciator lights I'd tested during every pre-flight but never seen in action for real. Moreover it was very distracting never having seen how bright and out of place it was in a dimmed cockpit. Like the three green landing-gear indicators on the Piper family, these annunciator lights can be swapped over, but they are not truly interchangeable as they have embossed labels. From left to right, they read Oil, Alternator and Vacuum. At night in the dimly lit cabin, it seemed this one, tiny little light – the one marked Oil – was the brightest I'd ever seen.

After the initial clinching of certain body parts, I distilled myself back to basics as a way of figuring out what to do. Ts and Ps all in the green and cross-checked with the EDM700 engine data readout. If we had an oil leak, pressure would fall and temperature would rise, wouldn't it? I had two contradictory pieces of data – the warning light telling me there's a problem, but the engine and all other instruments telling me everything was OK. I was only twenty minutes or so from destination. My passenger needed to get home for an evening engagement and was asking what was happening. The next sixty seconds felt like a lifetime, trying to decide what to do, and climbing whilst we had full power available.

We were still below the scattered cloud base and in the climb when the AI toppled. What was going on? What has the oil system got to do with a dry suction system? Back to the checks! The suction gauge was pegged to zero! Yet more confusion.....!

OK enough is enough: between [Airfield] and our home base the only airfields I knew for sure were open were Farnborough and Heathrow. Thankfully, having passed over [Airfield], I knew it was open – though I didn't have any plates for it. A call to ATC to tell them I was diverting was followed by a 180° turn, resigned to the fact that I'd rather face a taxi ride home than having a cameo role in an AAIB article. Blue lights flashing at the threshold helped me find my way back to the airfield. After this successful diversion a quick check of the oil showed it still at 7.5 quarts. Tired and cold, we headed for the taxi rank, happy that we'd done the sensible thing, but still bemused – what had happened? How could dripping oil, a faulty oil warning light and failed vacuum pump be related? I didn't believe in coincidences. With the adrenalin still flowing I opened the wiring diagram for the

annunciator panel on my friend's smartphone. What I saw made him smile and made me groan.

What had I learned? A few things actually; I'd self-briefed for a night arrival but hadn't done adequate planning for the enroute portion – e.g. the airfields to which we might divert. I'd also failed to adjust the radio lights appropriately, being startled by the annunciator light.

The mystery of what went wrong was annoying: the annunciator panel has a vacuum warning light which should have activated if the suction pump had failed (and we know it had, given the suction gauge was pegged to zero and the AI toppled). The annunciator lights in a PA-32 are typically arranged from left to right in the order Vacuum, Alternator and Oil. However the Oil and Vacuum lights in my plane had been transposed!! It was the vacuum that had failed but the oil warning lamp had come on, as it was in the wrong socket. Dripping oil and an oil warning lamp coming on are too much of a coincidence for me to beat myself up about 'confirmation-bias' but looking at the first diagram in the POH – which detailed the cockpit layout – did show quite clearly the order in which the bulbs should be installed.

## Comments on previous GAFB editions

### Comment No 1 – Speechless?

Regarding GA FEEDBACK Edition 95 Report No.1 (GA1327a) 'Wrong frequency'. The implementation of the interleaved 8.33kHz channels was bound to cause confusion. Not appreciated by most pilots (who are interested in flying, not radio technology) is that adding 5kHz to a pre-existing 25kHz-plan frequency does not change the frequency (you might want to read that again!). It is actually a means of signifying a narrower channel on the same frequency.

Imagine two pre-existing channels as two houses on a street with a vacant plot between them. Now try to squeeze more into that plot by building two (not just one) new dwellings. You can't do this unless the new-style houses are narrower than the traditional ones. So with squeezing two new channels between each of the pre-existing ones. A 25kHz channel has more elbow-room to spread out compared to one squeezed into 8.33kHz. The functioning of the radio has to accommodate this. The closer adjacent channels have to be excluded by filtering them out. Transmissions on the new channels must also be restricted so as not to overlap their neighbours. A wide old-style transmission received on a new narrow-bandwidth set could sound distorted, this is not specific to any particular aerodrome.

What should have happened? The "Knowledge" human factor plays a part. Pilots might not understand the spectral bandwidth of the two sidebands of an amplitude-modulated transmission (and with all this jargon, they probably won't want to try!). However, training should clarify that the 5kHz apparent frequency difference only has the effect of making a transmission compatible with the new equipment. As to the ground station, the operator needs awareness of Speechless Code.



When the pilot called in by an unreadable transmission, the ground operator should have said "Station calling [xxx] unreadable, adopt callsign Speechless [One]" followed by pilot's responses being, principally, one (affirm), two (negative) or three (say again) dashes (sent by keying the mic/PTT, not speaking).

**CHIRP Response:** There's still much confusion and unfamiliarity about 8.33kHz radios and probably scope for better education as a result! With regard to an A/G operator just hearing noise on the radio then we agree that the use of the speechless code could potentially be beneficial subject to the usual constraints as to what AG/FISO/ATCO operators are allowed to do with regard to issuing instructions. At least there might be scope for determining who was calling and their intentions if the right set of questions were asked.

For those who may not be familiar with the speechless code, it was conceived as a military procedure used to enable a set of yes/no questions to be asked by ATC when an aircraft had a microphone/voice-transmit problem. The procedure can be initiated by either the pilot or the controller depending on who recognises there's a problem. If it's the pilot who realises they have no voice transmission then you initiate the procedure by pressing 4 times on the transmit button to send out 4 long bursts of carrier-wave (4 dashes being morse 'H' for 'Home'). The controller will then make a call along the lines of "Aircraft transmitting on [frequency] adopt the callsign Speechless 1, is this a practice?". The pilot responds to questions with one long press of the transmit button for 'yes', two presses for 'no' or 3 presses for 'say again'. The controller will then pass information or ask yes/no questions depending on the requirement (e.g. "Speechless 1, do you intend to land at [airfield]?", "Speechless 1, [airfield] is using runway [xx], circuit height 1000ft, do you have the airfield in sight?", "Speechless 1, are you G-ABCD" and so on). If given instructions, pilots use one long transmission (i.e. yes, I've done that) to confirm that a requested manoeuvre/action has been carried out (e.g. "Speechless 1, turn left heading 270 and confirm when steady" would result in a long transmission when you were on heading 270). If you have a further emergency then you transmit morse 'X' (long, short, short, long) to indicate this and the controller will then go into an additional routine which normally starts with the response "Speechless 1, do you have a further emergency?" and then if you respond 'yes', "Speechless 1, can you maintain height?" followed by further questions to find out what your problem is and your intentions as appropriate. Although it's not regularly used as a civil procedure and so some units may not be familiar with it, airfields could develop standard scenarios and associated yes/no questions pertinent to their operation so that they don't miss out key things if they decide to use it. See [CAP413 Radiotelephony](#) Chapter 10, Para 10.36 for further information.

### **Comment No 2 – Always treat propellers as live**

Thank you for another 'hi octane' informative Edition 95 – some 'been there, almost done that' revision. Unfortunately, it seems that, notwithstanding training, your warning report in the previous issue but 1 about the dangers of propellers is still risked. Coincidentally I was contemplating CHIRP-



ing an incident observed at [Airfield] last week. Many aircraft park on the northern part of the main apron (where the fuel farm is) and this involves a 90° turn, close down and push back. Two pilots and a dog opposite were doing so but, rather than push on the wing, used each blade of the propeller – with a warm engine. My error was not strolling over and in a fellow-pilot, post-flight-friendly-way mention your report/article. Thankfully the proliferation of posed photos of people by props has stopped but the warning needs to be repeated.

**CHIRP Response:** We can never say it enough, always treat propellers as live – especially with a warm engine. Electrics have been known to be faulty in the past and it doesn't take much for an engine to fire in such circumstances. In particular, unlike car engines which won't fire if there's a break in a cable to the battery, in many aircraft the magnetos are 'live' if disconnected and so the engine will fire if the prop is rotated.

### **Comment No 3 – It's all a bit hazy**

FEEDBACK graphics in Edition 95 were too small and fuzzy to read in the electronic version. They may be pretty, but where is the zoom function?

**CHIRP Response:** We offer two versions of our FEEDBACK newsletter, pdf (which can be downloaded to your device for reading or printed if desired), and electronic (which require an internet connection to view but can be read in a single-column format on devices with smaller screens). The pdf download versions of documents on the website and app are zoom-able in the normal manner on iPads and browsers etc but the electronic versions have an issue with zooming graphics at the moment which we're hoping to resolve in a forthcoming update of our app/website. However, our resources are limited and so it's something that we're aware of but waiting for our developers to agree a prioritisation amongst some other updates. That being said, some of the graphics we get sent are low-resolution themselves and so we're often stuck with what we can do anyway. Be assured though, we're aware of the problem and are on it to try to get it resolved.



**There are no comments yet.**