

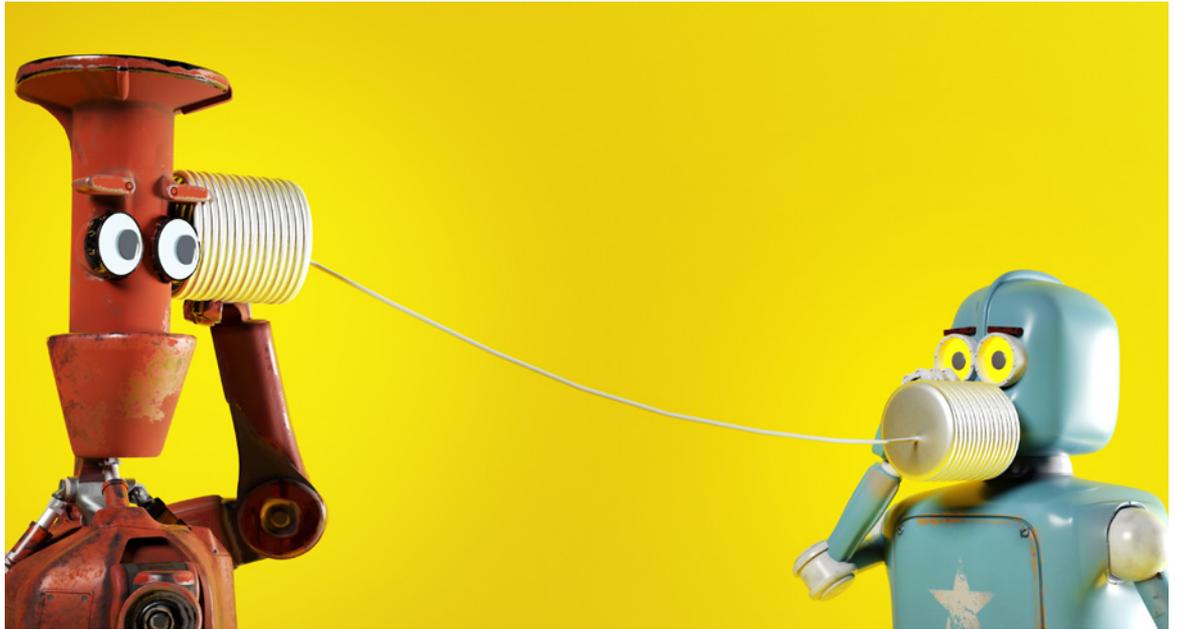


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Listen up!

You might have heard, but did you really understand?



Steve Forward
Director (Aviation)

As I was compiling the reports in this edition of FEEDBACK it struck me that one of the common themes in a few of the reports was communications and the issues that can arise when we either fail to communicate, mishear/misinterpret information or are not clear in the messages that we transmit ourselves.

Aside from the obvious inability to communicate when equipment fails, poor communication, lack of clarity or being at cross-purposes can lead to serious misunderstandings that can have significant safety impacts.

Communication is not just a process of sending and receiving messages, but also a process of interpreting and negotiating meanings, and the meaning you intend is not necessarily the one the recipient takes away with them. Furthermore, communication is always complicated by an almost infinite number of factors such as expectations, attitude, prejudice, history, values and beliefs, moods, likes and dislikes, etc.

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Information transfer is most efficient when all communication channels are available (i.e. aural and visual modes such as body language/gestures) – it's thought that we communicate 20% through aural channels and 80% through visual channels by interpreting gestures, facial expressions, body language etc.

We pilots are typically 'visually' focused (a picture paints a thousand words and all that) – what would you rather study, a graphic depiction or a few pages of text? Without all the visual channels being available (such as with R/T or textual documents), quite a complicated process of coding and decoding takes place before a message is received, interpreted and understood - the sender encodes the information and sends a message, the receiver decodes that message into information (hopefully the same information as was encoded!). For just that reason, with R/T we place specific emphasis on the use of standard pro-words with specific meanings that are easily decoded and understood even when transmission methods might be sub-optimal.

Understanding what might go wrong with communication and how to react when it does is therefore an important part of aviation resilience. How will the recipient perceive, interpret and reconstruct the information in a message? Has information been missed or misinterpreted? Are there unresolved uncertainties in the message?

What will happen if the message is not received at all? What capacity does the recipient have to process the message? (it's known that one of the first senses to be offloaded when under stress is hearing, and so aural communications must also be tailored to the circumstances of the recipient).

The introduction of the 'Student' prefix to callsigns was done with exactly this latter aspect in mind so that students who may be operating at capacity are given extra consideration, time and space to understand and act on any messages from ATC or other pilots.

All of these considerations are important when composing aural- or textual-only messages that will be transmitted without face-to-face contact, and we all need to be sure that on receiving such messages we are clear about their meaning; if not, or there appears to be ambiguity, ask questions, face-to-face if possible! In other words, 'don't assume, check' or, as our American cousins would say, 'assume makes an **ass** out of **u** and **me**'. The CAA have recently issued an updated [Safety Sense Leaflet 22](#) titled 'Radiotelephony for General Aviation pilots' that covers a wealth of useful information about radio communications and is well worth a read.

Safe flying in 2023,
Steve Forward, Director Aviation

I Learned About Flying From That (ILAFFT)

This edition's ILAFFT is taken from USA NASA's [Aviation Safety Reporting System \(ASRS\) 'CALLBACK' Newsletter](#) Issue 516, January 2023 (with associated American

terminology and spellings!). The article provides a good illustration of how the pilots' Threat and Error Management (TEM) thought processes should have taken account of the temperature and dew point spread when operating an aircraft that might be prone to carburettor icing, particularly if swapping between aircraft with fuel injectors and carburettors. For more information on carburettor icing see also the CAA [Safety Sense Leaflet 14](#) titled 'Piston engine icing'.

Carburettor Calories

My student and I decided to go out and practice VFR landings before low ceilings arrived later that evening. The temperature was around 4°C and the dew point spread about 4°C. We taxied out to [Runway] XXL and flew two right VFR [visual circuit] patterns, each landing on [Runway] XXR. I flew the first pattern to demonstrate, and the student flew the second pattern.

As we came in on final for the second pattern, the engine RPM dropped, and the propeller came to a stop at the end of the ground roll of the second landing. We quickly used the momentum to exit XXR onto Runway XY and hold short of XXL. I stated to Tower that my engine just quit, and the Tower Controller confirmed observing this over the Tower frequency. My student and I were immediately able to get the engine started on Runway XY to taxi back to the ramp.

In hindsight, I realize what likely occurred, but it is speculation. As my student performed the run-up before I took off of XXL, I recall noticing a 200 RPM drop when the student tested the carburettor heat. Having flown a fuel injected C172 a couple times before this flight, I was not in the habit of turning the carb heat on.... I did forget to turn the carb heat on during my first pattern and mentioned this out loud to the student while on final for XXR during my demonstration.

The student took the controls for the second pattern while on upwind for XXR. During the student's pattern, our downwind was extended for landing traffic, and he also forgot to turn the carb heat on as he configured for landing. I noticed this, but with this flight being a pre-solo evaluation, I decided to make a note of this for later and did not correct it immediately.

While on final for his landing, he pulled the throttle to idle for the entirety of final approach. As we continued the ground roll after his landing, the prop stopped turning about halfway down the runway. I do not recall hearing the engine quit, just that the RPM began to get pretty low. With the weather conditions, I strongly suspect carb icing. The engine didn't have time to warm up either after two patterns in these conditions.

To prevent further occurrence, I will be more diligent when switching between aircraft with different systems and identify differences before beginning a flight. I also need to emphasize the landing checklist while on downwind for myself and my students. I am fully aware of the consequences of not turning on the carb heat in conditions where carb icing is prevalent.

COMMENTS ON PREVIOUS GAFB EDITIONS

Comment No 1

Regarding FEEDBACK Edition 94 Report No 4 [GA1321 – Dual-reading ASI] where the pilot of a glider tug reported flying MPH airspeeds believing the indication to be in knots. That type of ASI is potentially lethal; it says 'KNOTS' in large letters in the centre of the instrument face. The inner scale is somewhat obscure although that is the one the decal refers to. The outer scale is clear and obvious but is calibrated in MPH. The 'MPH' sign is small and located near the bottom of the instrument face. This error has no doubt been made thousands of times. I would suggest recommending removal and replacement of these ASIs within a certain timeframe.

CHIRP Response: This is an unfortunate classic Human Factors trap that is waiting to catch the unwary – what is known as a 'latent failure' in safety terms which goes unnoticed until circumstances conspire to raise its profile (in this case, someone rushing to get airborne; instrument markings that were not obvious; and a situation which felt 'nearly right' and so alarm bells weren't ringing). As a known long-term issue with legacy aircraft, replacing the ASI with one that is better marked is certainly one way of solving the problem but may be beyond the short-term finances of some operators so a clear warning placard near the instrument stating something like 'Outside ring – MPH; Inside ring KNOTS' may be one way of highlighting the problem if a more permanent solution can't be sourced.

Comment No 2: [FEEDBACK Edition 94, Report No.5 – Incorrect pressure setting]. Every month there is an infringement from an aircraft departing the circuit with QFE set. Standard procedures at GA airfields are to use QFE for flying circuits and QNH when intending to leave the circuit. I would recommend never using QFE in line with all commercial operations, most other countries including the EU and North America. Altimeter setting errors do not only affect infringements. If QNH is always set, only small changes will be needed which are less error prone. We are using a procedure which is error prone, non-standard and unnecessary.

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 or EU 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 Off.

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 by 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 especially with students or when there are mixed traffic patterns at different heights. That being said, although it's true that QFE has benefits in the visual circuit, it also brings with it the requirement to be diligent about changing settings when leaving or joining the circuit, and there are a number of airfields that are located underneath controlled airspace who do use QNH successfully in an attempt to make airspace infringements less likely so its use is not without precedent.

Comment No 3: Regarding FEEDBACK Edition 94 Report No 6 [ATC825 – Use of Guard channel for practice PANs]. I suggest monitoring multiple RT frequencies while two crew should be a basic competence. In Australia and the USA, single crew, it is normal to monitor and quite probably transmit on two frequencies given the need to be both in touch with ATC centre and local traffic on the CTAF. Monitoring of guard by high-level commercial traffic and low-level GA in remote, oceanic or militarily sensitive regions is valuable and occasionally a life saver but in UK airspace its utility is minimal. I suspect the UK is the only country that offers a triangulation service. Surely with widespread use of moving maps, transponders and PLBs, triangulation is a historical oddity that could be discontinued.

CHIRP Response: Whether or not 'chatter' on Guard is distracting is probably dependent on the circumstances at the time but it seems to CHIRP that it would be relatively simple to set up a VHF Practice Emergency Training Frequency (PETF) that would then remove a significant part of the problem. Some folk have also commented that having a separate PETF may well encourage and give confidence to GA pilots to practise this important feature more often, knowing that they are not in any way interfering with commercial flights. But what is the view of you the aviation community? Let us know and we'll include your thoughts in any future PETF work!

Comment No 4 – EC Rebate: Responding to FEEDBACK

Edition 94 November 2022, I was interested in the notion of extending the EC rebate to student pilots, and the DfT response in relation to the review in March 2023. As an ATS provider and student pilot, I believe a change of direction in March 2023 would be beneficial.

The goal here surely is to provide EC conspicuity for the aircraft airframe, why then do individual pilots need their own EC device, a good proportion of which probably spend most of their time in a flight bag, in the boot of a vehicle? If the goal here is to reduce MAC incidents and airspace infringements, we need registered aircraft owners/operators to fit these devices and make them available to all pilots flying those aircraft. Crunching

numbers may allow for one fully funded EC device per airframe, which seems easily audited and accounted for.

CHIRP Response: We agree! CHIRP absolutely supports the purchase and fitment of appropriate EC devices in all aircraft and have represented that view to DfT and the CAA. Compatibility of devices is currently an issue though, with no 'silver bullet' being available at present as different sectors of the aviation environment have different needs, but that's a whole debate of its own.

Comment No 5 – Flight Priority:

With regard to the latest GA CHIRP publication [FEEDBACK Edition 94 Report No3 – ATC829 – A/G Operator], I believe there is some significantly misleading information in the report concerning Air/Ground operations. It is stated that "Although ATCOs have defined priorities for handling such aircraft in controlled airspace (see CAP493 Section 1 Ch 4 Para 10C), these priorities do not extend to Class G airspace and its associated requirements for giving way." Having provided ATC in Class G on and off for almost 40 years and currently working for the ANSP with the most ATC units in Class G, I assure you that the Flight Priorities table applies in all classes of airspace not just "controlled".

CHIRP Response: It's a fair cop...I take full responsibility for some slightly vague wording that didn't properly reflect what we were trying to say. CAP493 Edition 10, Section 1 Ch 4 Para 10C 'Flight Priority Categories' (as recently amended within SI 2023/01 effective 18 April 2023) do indeed apply when you are under the control of an ATCO irrespective of the class of airspace (for example when under an Aerodrome Control Service in Class G airspace). What I was trying to say was that they do not apply in circumstances when you are not under control in open Class G airspace (irrespective of whether it's an ATCO, FISO or AGCS) such as operating at an A/G airfield or even in receipt of a Basic Service or Traffic Service in Class G airspace when a controller can only give you information and not instructions relating to emergency services aircraft who also have to adhere to the rules for giving way in such circumstances.

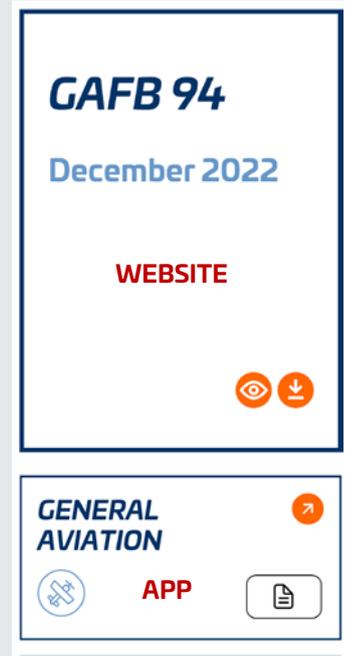
Comment No 6 – Downloading FEEDBACK:

I have been a reader, and occasional contributor, to CHIRP since its inception. Originally as a commercial pilot but now, having recently retired, as a private pilot. The current layout is excellent and more engaging than previous incarnations. However there doesn't seem to be a download facility, enabling it to be read offline (such as whilst travelling). If I'm correct, could a download facility be added please? CHIRP is a significant contributor to flight safety, and a first class publication. Please keep up the good work!

CHIRP Response: We're glad that you find that the new website and format for FEEDBACK more engaging. It is indeed possible to download FEEDBACK for reading offline. There are 2 icons within the selection tile for each edition. On the website, click on the 'FEEDBACK Newsletters and Publications' tile, then the 'General Aviation' 'View all' icon. As shown in the graphic, each edition has a tile within which the 'eye' icon is for

accessing the electronic version of the newsletter (which can then be read in 'single-column' interactive mode), and the down-arrow icon is for accessing the pdf version (that can then be downloaded to your device for reading offline if desired).

On the app, selecting 'Latest FEEDBACK Newsletters' takes you to a similar screen where the orange arrow icon in the tile accesses the most current electronic newsletter and the picture of a document below the arrow accesses its pdf version.



We would encourage all our readers (especially flying clubs, associations and other organisations) to download the pdf version of FEEDBACK and send it on to others who might not have our app installed. And if you can, please print off a few copies and leave them on the crew-room/tea-bar coffee table - everyone is encouraged to read and use our material for safety purposes, so you can reproduce or print FEEDBACK without worrying about copyright issues.

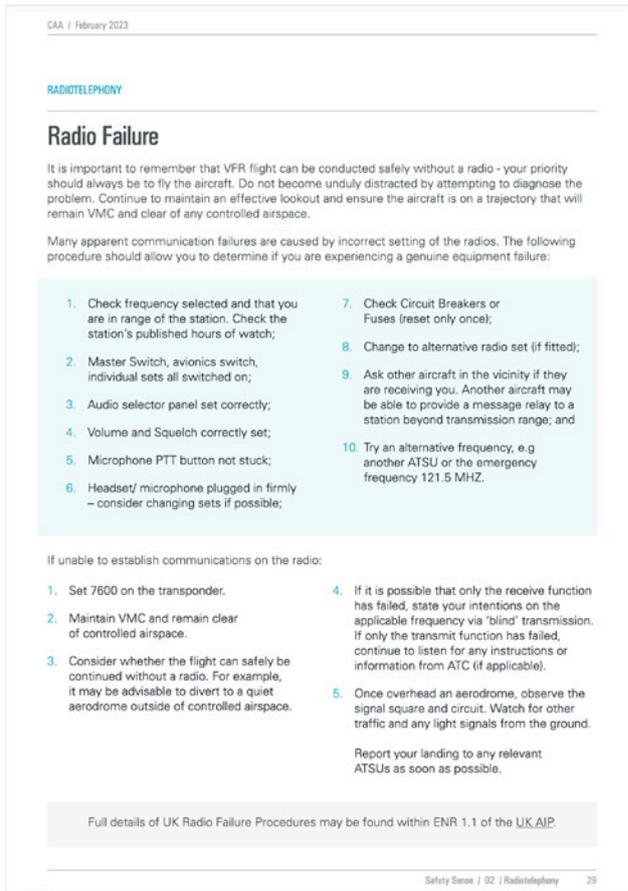
Reports

Report No.1 – GA1327a – Wrong frequency

Report text: On a recent trip at a nearby Airfield, the airfield frequency was set by my pilot colleague upon being released from controlled airspace nearby. With only 10 miles to run, he called the airfield but got no response but we could hear aircraft in the circuit. I called as well from my side in case his mic or ptt button had failed but with the same result.

As we were getting near the field he called blind announcing that we were joining overhead for the runway that we had ascertained from the circuit calls. Upon joining overhead we saw another aircraft in the overhead to the right that we positioned behind and followed him to crosswind. As we were about to join downwind we were alerted by a radio call asking if the aircraft joining had them in sight. We then positioned behind that aircraft giving blind calls throughout.

Upon landing we were approached by the CFI saying that he had had complaints from other pilots that we were not making radio calls. We replied that we had been making calls throughout and that their base radio operator had not responded to our initial calls for airfield information. However, upon leaving and requesting airfield information we were getting unreadable to our calls. We checked all of the normal issues etc believing that it was a fault on our radio system that was causing a transmit problem. I then checked the frequency and discovered that it had been set to .005 out of the correct frequency and, once set right, both transmit and receive worked perfectly.



I wrote to the Chief Flying Instructor at the Airfield and apologised for our error but expressed concern that setting the wrong frequency by the small amount permitted calls to be received but not transmitted leading to the belief that blind calls were being received. I have suggested that they may wish to have an entry made in The Flight Guides warning of this situation.

The situation was exacerbated by the Airfield having an unconventional circuit to avoid a nearby village with aircraft joining long downwind and on a dogleg and not being in the expected position. Also on the day, the circuit was very busy with a number in the circuit at that time. I am also aware that some pilots are still flying using non 8.33kHz radios and that the same problem of receiving but not being received exists which is not the case on most other frequencies where a non 8.33kHz radio will continue to transmit and receive without any problems on those frequencies.

The main lesson learned is to double check that the frequency is exactly right and not assume that if you can hear them they can hear you. On blind calls at least try and get a response from an aircraft at the field as a radio check.

CHIRP Comment: The reporter highlights a useful lesson when confronted with a seeming partial radio failure that compromised only their transmit function. It's easy to convince yourself that there's a fault in your system under such circumstances, especially if you're arriving at an unfamiliar airfield, so a methodical check of switch and frequency selections is an important first step before assuming the worst.

Page 138/139 (Emergencies section) of the [Skyway Code](#) provides a useful checklist regarding communications issues, not least of which reminding us that "Many apparent

communication failures are caused by incorrect setting of the radios – check basic issues like volume, squelch, frequency and audio selector panel settings before concluding you have actually experienced a radio failure".

Also, CAA [Safety Sense Leaflet 22](#) Page 29 (see graphic) contains a useful checklist for radio failures - given that there are radios with switchable 8.33kHz vs 25kHz functionality, we would suggest that the associated item 4 in the first list might be modified to read: 'Volume, Squelch and Frequency selectors correctly set'. In extremis, if you're approaching controlled airspace with no comms you might even get intercepted so make sure you're aware of the rules on interception as well (noting that the CAA Safety Sense 11 'Interception' guide has been withdrawn for a re-write at present).

Dirty Dozen Human Factors

The following 'Dirty Dozen' Human Factors elements were a key part of the CHIRP discussions about this report and are intended to provide food for thought when considering aspects that might be pertinent in similar circumstances.

- Pressure** continuing with airfield join before fully investigating the problem
- Awareness** frequency not checked to make sure correctly set
- Communication** unable to communicate with others in the visual circuit
- Deviation** did not fully follow a 'radio failure' procedure

Report No.2 – GA1327b – Airfield Avoids

Report text: My point is in regard to the increasing number of avoid areas being included at airfields, with the term mandatory being used incorrectly. Mandatory is a legal term and means required by law, whereas this may be compulsory by the airfield operators and result in ppr refusal, it is not required by law.

The term noise abatement is also being used. I am not wishing to be critical of the Airfield Operators who have an impossible task matching the needs of the based and visiting aircraft pilots and the local public who can be very demanding over aircraft flying over their houses. In some cases (see graphic) the number of noise sensitive areas



are such that for a visiting pilot their attention is drawn to identifying and avoiding these areas rather than executing a standard join and circuit pattern.

As we are well aware, distraction in the air can be very dangerous. It is also concerning that because pilots have the discretion to ignore these requirements if they feel that they conflict with safety, then a real danger of different landing patterns may occur.

I do not feel that these Avoidance / Noise Abatement Areas are necessary in all circumstances if a proper approach is undertaken on low power and therefore low noise, perhaps with an occasional small increase to hold height. A departure is at full power and therefore much noisier but most of the restrictions required appear to be related to the approach and circuit rather than the departure, which seems rather contradictory.

I feel that we should not compromise safety simply to satisfy the public's dislike of aircraft overflying their houses. I also feel that individual properties which are almost impossible to identify from the air should not be included, the number of areas kept as low as possible, and the circuits made to fit the overhead join pattern where an overhead join is the standard joining procedure. I also feel that the number of different procedures for small airfields, some with an AFIS and some with nothing, is too complicated and a degree of standardisation is required.

CHIRP Comment: In respect of the proliferation of avoids in Visual Circuit Patterns, I'm sure that we would all wish to see them reduced to the minimum but there will always be some sensitive areas near airfields and, although it is not feasible to avoid every house, all that can be done is to try to design circuit patterns that will cause the minimum nuisance.

In that respect, we have to be tolerant of those who live near airfields because they can suffer from continuous noise from active circuit patterns that can sometimes become unbearable to them for whatever reason – airfields have to work with their local communities rather than ignore them. But when airfield operators are designing circuit patterns with this in mind, it's important that the resultant patterns are both flyable and easy to navigate around so that pilots aren't continuously having to transfer their attention away from flying the aircraft.

Whilst a 'standard' template might be applied to ensure the visual circuit is recognisable in shape and form, aircraft have greatly differing performances and so one aircraft's 'sensible' pattern might not be another's. But we agree that significant deviations and 'downwind navexs' can soon negate the facility for expeditiously practising landings and take-offs once established in the visual circuit, and can also compromise overhead joins, so there needs to be a pragmatic solution to avoids.

Some airfields spread the noise by alternating circuit directions at different times if the airspace allows but this can also cause confusion in itself if pilots forget or don't know the 'circuit pattern of the day'. The bottom-line is that when visiting unfamiliar airfields then any constraints on circuit patterns must be thoroughly reviewed as part of the flight planning process so that you're fully aware of where you are going to fly once established in the visual circuit. In this respect, many electronic planning and navigation aids such as SkyDemon have the facility to display airfield

circuit patterns and avoids as an overlay so this can be a very useful tool for pre-flight planning (as are internet satellite/aerial pictures) but beware of becoming distracted by focusing on electronic screens in flight to the detriment of lookout and the task of flying itself.

There's a lot of pre-flight preparation to be done before heading to an airfield you haven't been to before, and note also that the rules of the air ([SERA.3225\(b\)](#)) require you to 'conform with or avoid the pattern of traffic formed by other aircraft in operation', not just conform to the published circuit pattern, and so you must also fit in with the other aircraft and their ground track in the circuit. The final point to make is that if you have an emergency or safety issue with your aircraft then the first priority is to fly the aircraft, avoiding noise-sensitive areas becomes secondary to that if you have control limitations or urgently need to land.

Dirty Dozen Human Factors

The following 'Dirty Dozen' Human Factors elements were a key part of the CHIRP discussions about this report and are intended to provide food for thought when considering aspects that might be pertinent in similar circumstances.

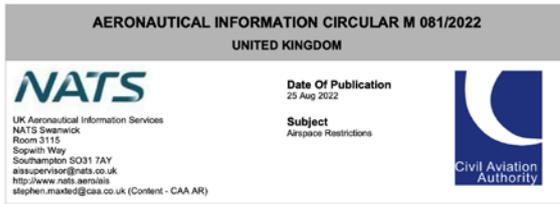
Pressure	anxiety to conform to published procedures
Distraction	capacity being reduced due to the need to avoid sensitive areas
Knowledge	the need to be clear about circuit procedures as part of pre-flight planning
Deviation	non-standard circuit patterns causing confusion or errors

Report No.3 – GA1328 – Potential RA(T) infringement

Report text: On the morning of the flight I was briefing myself ahead of taking 3 passengers around the local area. As part of that briefing I had noted a RA(T) that was to be in place during the weekend (SFC - 1500). However, knowing my flight would be away from the NOTAM area and, following local booking-out processes in the knowledge of the airfield operations team, I considered the flight could safely proceed in line with the RA(T).

I departed the airfield before the RA(T) came into effect, leaving in full visibility and comms with the coordinators on A/G radio for my 1 hour flight. After flying locally outside the RA(T), I headed back to the airfield from the north. On approach to the airfield I was aware of other traffic in the RA(T) with some showing on SkyDemon via SkyEcho, I also noted that they were doing non-standard approaches and circuits into the airfield. I therefore adjusted my join for RWY01, intending to remain outside of the RA(T) for as long as possible. I was also aware of the cautionary non-standard radio calls being made by event participants as they came into proximity of the airfield.

I maintained my clearance of the RA(T) and decided not to descend into the deadside, maintaining no lower than 1800ft QFE and, during the circuit join, climbed back to 2000ft QFE when I observed other traffic joining the circuit close to the top of the RA(T) based on SkyDemon information. Maintaining normal circuit radio calls for situational awareness, I delayed my turn onto the downwind



RESTRICTION OF FLYING REGULATIONS: AERO CLUB AIR RACE, ESHOTT, NORTHUMBERLAND, 24 AND 25 SEPTEMBER 2022

- 1 An Aero Club Air Race will be held at Eshott Airfield, Yorkshire, between 24 and 25 September 2022. A number of aircraft will be involved in carrying out high-energy manoeuvres; therefore, the Secretary of State for Transport has decided that it is necessary to introduce the following Restriction of Flying Regulations under Article 239 of the Air Navigation Order 2016.
- 2 Subject to paragraph 3, between 1945 and 1945 hours on 24 September and 0915 and 1415 hours on 25 September 2022, no aircraft is to fly below 1500 FT AMSL within the area bounded by straight lines joining successively the following points:

SFC to 1500 FT AMSL	
A	551748N 0014529W then straight line to
B	551816N 0013330W then straight line to
C	551258N 0013003W then straight line to
D	551123N 0014644W then straight line to
E	551748N 0014529W -
- 3 Paragraph 2 does not apply to any aircraft operating with the permission:
 - a) of Eshott air-ground service whilst in the local flying area;
 - b) of the Royal Aero Club Records, Racing and Rally Association Clerk of the Course.
- 4 The times mentioned in paragraph 2 are Universal Co-ordinated Time (UTC), which is one hour behind British Summer Time.
- 5 In relation to the permission mentioned in paragraph 3a, the Eshott air-ground service can be contacted via Eshott Radio on 122.855 MHz.
- 6 National Police Air Service and Helicopter Emergency Medical Services should contact Eshott Radio for any emergency tasking.
- 7 In relation to the permission mentioned in paragraph 3b, the Royal Aero Club Records, Racing and Rally Association Clerk of the Course may be contacted on the day on telephone number 07725-629947.
- 8 Further enquiries of Airspace Restrictions and the Civil Aviation Authority can be made to M S J Maxted, Airspace Regulator, Safety and Airspace Regulation Group at 03301-383216.
- 9 Details of Restricted Airspace feature in the daily AIS Information Line message 08065-354802 and 01489-887515 and will be included on the Pre-flight Information Bulletins (PIB) through the AIS Website at <http://nats.aero/ais>.

to fly a wider circuit [beyond the western boundary of the RA(T)] as I was concerned for the circuits being flown by the other aircraft. Keeping the downwind leg high (2000ft QFE) as I turned cross-to-downwind, I descended to approx 1600ft QFE for my downwind-to-base turn whilst remaining outside [to the west of] the RA(T). I became aware of an aircraft on SkyDemon that had appeared to depart RWY19 to commence a race circuit so I delayed my base turn to maintain separation and turned base leg as number 2 to a different aircraft, keeping a good lookout. This longer final allowed me to retain height above the RA(T), only descending into the RA(T) as I flew the base leg as number 2.

After taxiing-in to park and escorting the passengers from airside I arranged refuelling and sometime later was approached by another pilot and an organiser. The organiser and I chatted for some time in a civil way as he had been advised that I had infringed the RA(T), discussing and agreed that there was a valuable lesson to be learned in how briefing of pilots operating 'with a permission' of the local airfield could be managed. Due to my stress levels following this event and the accusation of the RA(T) infringement, I returned the aircraft to my hangar as I considered that I was not in a position to fly.

There was no local briefing material available, this was left to self-interpretation which is where I believe my confusion crept in. I also think there needs to be a more strongly worded caveat to the "Flights conducted under permission of the [Airfield] Ground radio". As I've reflected over time on this one, I've also come around to the wording being problematic here as technically A/G radio cannot issue permissions or instructions to aircraft in the air, meaning it also potentially put the A/G operator in a difficult position should an aircraft request permission to land or take off.

CHIRP Comment: The RA(T) AIC M 081/2022 is shown and essentially required non-participating pilots to remain

above 1500ft amsl within the bounded area. The key point though is that the area could be penetrated if aircraft were operating with the permission of the A/G service. This is where the confusion lay because the reporter thought that completing the booking-out process (presumably showing a flight duration that started before but ended during the RA(T) exclusion) implied that they had such permission.

One might have hoped that during the booking-out and departure process the restrictions of the RA(T) would have been raised by the A/G operator but it seems that they were not. In all other respects, it certainly appears that the reporter tried their best to accommodate the RA(T) into their flight based on their understanding of it, but this incident highlights the need to fully understand any potential restrictions that might be in place at airfields as a result of NOTAMs such as this; a specific phone call or visit to the Aerodrome Operator during the pre-flight planning process would hopefully have resolved any misunderstandings.

As the reporter comments, the AIC is somewhat misleading in Para 3 about who would give 'permission', and it would probably have been better written as '[Airfield] Aerodrome Operator' rather than '[Airfield] air-ground service' (although the effect was probably the same in that any 'permission' would likely have been passed through the A/G operator); however, by stating '[Airfield] Aerodrome Operator' this might have triggered the reporter to make a positive effort to gain permission rather than assume that they had it by dint of talking to the A/G operator.

Ultimately, the Aerodrome Operator could have prevented any confusion by issuing their own written brief to all home-based pilots providing clarity on what was required in order to comply. Finally, although it seems that the problem was discussed and resolved to the Aerodrome Operator's satisfaction after the incident, we can understand that the reporter might have been troubled by their seeming transgression and they absolutely did the right thing in not flying again that day if their mind was not in the right place at the time.

Dirty Dozen Human Factors

The following 'Dirty Dozen' Human Factors elements were a key part of the CHIRP discussions about this report and are intended to provide food for thought when considering aspects that might be pertinent in similar circumstances.

- Awareness** clarity on what was required to comply with the RA(T) was not available or sought
- Knowledge** misunderstanding of information
- Communication** poor communication of RA(T) requirements and pilot's intent
- Deviation** pilot did not comply with the AIC

Report No.4 – GA1329 – Departure distraction

Report text: A training aircraft was landing whilst I waited at the runway hold. The student pilot was early in the flare, and this caught my attention, becoming a point of discussion in the cabin. I waited for the aircraft to touch-and-go and begin its turnout before declaring ready for departure. I am always careful to create a mental picture of the situation at the aerodrome by listening to the RT exchanges.

No such transmissions were heard, I declared I was ready for departure (the aerodrome is A/G only), and the wind was provided. As soon as I stated I was entering the runway, A/G advised 'hold'. I held immediately, wondering what the problem was. I checked the approach to find an aircraft on short final, partially obscured by trees very close to the threshold, having made no radio transmissions at any stage during its arrival to the airfield, and entering the ATZ by a straight-in approach, not overhead, which gave almost no warning of the aircraft's presence. Concerned that I may have missed a crucial R/T call, I asked if my passenger had heard anything, who said they had not. I asked the A/G operator whether transmissions had been received from the arriving aircraft, and he confirmed they had not.

I can confirm the landing aircraft did not join overhead. Had it done so, it would have provided a much longer period to be spotted, and would have appeared against a sky backdrop, and not the high ground to its rear that helped mask it. A peculiarity was that, when I asked the A/G operator to advise, before lining-up and after the aircraft had cleared the active runway, whether it had sent transmissions (that I may not have heard) on arrival, the A/G operator responded 'negative' and the pilot of the now just-landed aircraft was prompted by this to send what were broken calls and, after what seemed like a 'fiddle with the connections', made a perfectly-readable apology for the incident. I simply responded briefly 'no problem, these things happen', and no more was heard of the matter.

Lessons learned:

- (1) Avoid distraction at busy pre-departure stage; double-check the approach before entering.
- (2) Recognise radios do fail
- (3) If radio fails, join overhead, not straight in.
- (4) Divert asap on radio failure; don't just continue.

CHIRP Comment: Non-radio or radio-fail aircraft have a responsibility to ensure they can integrate safely into the pattern of traffic and this is best done through an overhead join if they are permitted at the airfield. However, it could be that the pilot of the other aircraft thought they were transmitting and were completing a straight-in join without realising that they had a radio failure or incorrect frequency; that being said, if they did not receive any response to their transmissions then that should have alerted them that something was amiss and that an overhead join would be a better course of action.

Irrespective, the A/G operator is to be commended for their call to 'Hold' because, regardless of the normal rule preventing them from issuing instructions, this was a safety event that fully justified their intervention.

The importance of avoiding distractions and conducting a final look up the approach path before lining up cannot be overstressed because there may be aircraft on final that are non-radio, you simply have not heard, or which may genuinely have a radio failure – aircraft on final have priority and it is your responsibility to only line up after they have landed. In this respect, whilst waiting to line up, if possible do so with your aircraft pointing up the final approach/base leg (at an angle appropriate for best visibility depending on the wing configuration of your aircraft) rather than perpendicular pointing at the runway because this will aid your ability to see traffic on the approach.

Finally, the implications of the reporter's 'lesson learned' to divert if experiencing a radio failure need to be carefully

considered because this might simply export a problem to somewhere else and would also mean that any pilot doing so would then be transiting without the benefit of a radio (and hence any potential assistance from ATC). They might also potentially be landing at another airfield contrary to that which had previously been notified and so any tracing action might be compromised.

If you become aware of a radio failure enroute then diversion is a sensible option to land as soon as practical but if it occurs near to your destination then continuing as planned is probably the best course of action (ideally through an overhead join but taking due regard of any radio-failure procedures that you should have reviewed during your pre-flight planning processes).

Dirty Dozen Human Factors

The following 'Dirty Dozen' Human Factors elements were a key part of the CHIRP discussions about this report and are intended to provide food for thought when considering aspects that might be pertinent in similar circumstances. Distraction – preparations for take-off and disadvantageous terrain background compromised lookout

Awareness lookout, and no aural cues available that the 'radio-failure' aircraft was on final

Communication 'radio-failure' aircraft compromised communication of intentions

Deviation radio-failure aircraft should ideally conduct overhead joins if permitted

Report No.5 – GA1330 – Runway markings

Report Text: I was returning to my familiar home base with a setting sun to the west for a landing on one of the westerly parallel runways (there being no discerning separation between the two runways other than the numbers on the thresholds which are painted white). In the half-light it was difficult to make out the runways and I initially lined up on the taxiway (also grass). I pointed out this potential hazard to ATC who said to repaint the numbers would involve closing the runway and inconveniencing the pilot fraternity! The controller complained of the need to weed the area first and repaint the numbers.

Unless something is done about it I believe there will be an incident. At [Airfield] there does not appear to be any formal process to pursue the local ATC to maintain the runways to a suitable standard. Lesson learned: Positively identify the runway before commencing an approach but if there is a lack of markings it would still prove too difficult.

Airfield Manager's Comment: We have an internal audit schedule which includes an airside audit every 6 months - this covers the airfield markings and highlights any works required. These are then flagged to our operations team for actioning. This year, we have had several issues with the maintenance equipment that have caused some routine tasks to fall behind. The visibility of our runway numbers was recently raised to myself and have been/are being actioned over the coming weeks [November 2022]. It is worth noting that we recently had an onsite CAA Aerodrome Licensing Audit in which no concerns were raised over airfield markings. As for the alleged comments from a member of ATC, these may have been taken out of context

from an informal discussion and please be assured that our operations team are extremely proactive with airfield maintenance. Of course, it is most difficult to maintain the markings on our main east/west runways due to traffic levels but opportunities when using alternative runways or quiet periods are utilised.

CHIRP Comment: In light of the Airfield Manager’s subsequent comments it appears that the issue has been recognised and hopefully resolved. However, it appears that the processes for doing so were not clear to all operators and there may be value in refreshing communications links so that all parties are aware of how to raise such issues and with whom; off-hand comments from others are not helpful and it would have been more useful if the reporter had been pointed towards the formal reporting processes.

In safety terms, the problems associated with landing into a low sun are well known, especially in the winter months, and this needs to be taken into account during a pilot’s and Airfield Manager’s/ATC’s TEM considerations. In light wind conditions it may be advantageous to offer pilots a landing on another out-of-sun runway if available (taking note of any crosswind considerations) or even land in the opposite direction on the runway in use if they are able to comply (being appropriately cautious of any tailwind component that might result, no matter how little it might be).

If there are runway/approach lights available then consider setting them to bright - even if they are on an adjacent paved runway they can give a visual indication of where an unlit grass runway is for those familiar with the airfield. Good quality sunglasses and a peaked cap can also help, and don’t be afraid to go around if unsure - you will be more likely to recognise the line-up features you’re looking for on the subsequent approach.

Dirty Dozen Human Factors

The following ‘Dirty Dozen’ Human Factors elements were a key part of the CHIRP discussions about this report and are intended to provide food for thought when considering aspects that might be pertinent in similar circumstances.

- Resources** runway markings insufficiently clear for task
- Distraction** capacity diverted by uncertainty over runway location
- Communication** sub-optimal communication of safety reporting processes

Report No.6 – GA1333 – Propwash

Report text: While visiting various airfields I have become aware of what seems to be a total lack of knowledge of propwash and the damage it can cause. I have seen pilots starting engines and taxiing away from open hangars and turning aeroplanes in close proximity to other machines with no regard to the possible damage that can be caused. I took an instructor to task having watched him blast another aeroplane causing the controls to slam to their stops, he seemed almost oblivious that he could have possibly caused any damage!

CHIRP Comment: The reporter raises an important issue about propwash (and similarly downwash from helicopters)

that bears consideration by all. Not only can excessive propwash potentially cause damage to unrestrained control surfaces on aircraft behind, but there is also the risk of kicking up and depositing FOD.

Individual aircraft will have differing degrees of propwash depending on their power and propellor combination but it is a common-sense precaution to ensure that the throttle is reduced to the minimum possible setting whilst the tail of your aircraft is pointing towards any other aircraft, and to ensure that you are as far away as practical before pointing the tail of your aircraft towards others. If you are departing from a line of aircraft then that may mean ensuring sufficient (safe) momentum before reducing the throttle as you turn (having completed a brake check first!), or taxiing straight ahead and turning as late as practical. Propwash is not just a problem for taxiing aircraft, it is also a consideration when starting up the engine so ensure there are no aircraft close behind when doing so.

We’re told that the CAA are currently reviewing their Wake Turbulence material and, although not specifically a wake turbulence issue, they agree that there might be value in including propwash/downwash considerations as an aside. We also think that the CAA Safety Sense leaflet No.1 (Airmanship) and the Skyway Code could both usefully include information about propwash/downwash and practical considerations for reducing its impact.

Dirty Dozen Human Factors

The following ‘Dirty Dozen’ Human Factors elements were a key part of the CHIRP discussions about this report and are intended to provide food for thought when considering aspects that might be pertinent in similar circumstances.

- Awareness** consideration of the effects of propwash/downwash on other aircraft
- Complacency** consideration of risks to other aviators
- Deviation** not adopting best practice procedures for reduction of propwash/downwash

Report No.7 – GA1335 – Drop zone penetration

Report Text: Before setting off on a local flight from [Home airfield], a fellow pilot invited me to go to nearby [minor airfield], each in our own craft. The flight started in very calm conditions but, during the flight, my GPS failed and could not be restarted. Because I had been there many times, I knew where the field was.

Just before arriving I identified a ground feature which is close to [minor airfield], but the colour was different to what I have seen before, this put some doubt about my position, and the wind strength had increased to what we later estimated to be over 35/40mph. The wind direction was from SE/E, and the intended runway was [SSW]. I identified the runway and started to descend on Final. At about 10ft above the runway, a strong gust caught my wing and the starboard wing dropped violently, I immediately decided to do a go-around.

I climbed to 500ft and started another circuit; at this point the other pilot had not reported his position and I was unsure of his position. Whilst looking for him I was travelling further north than I have ever done before and entered the

Drop Zone for [Parachute centre], which is only 1 mile north of [minor airfield]. I could see the drop plane on the ground but could not see any parachutists.

When the instructor at [minor airfield] landed after a lesson, they informed me that the parachute centre had reported to him the infringement and would I contact the parachute centre to discuss the incident. During our conversation I was shocked/upset to find that there were 8 parachutists descending while I flew over the DZ. In future I will stay well south of [minor airfield] until I can identify positively the runway and, if [SSW] runway is being used, I will fly a tighter base leg.

CHIRP Comment: We are grateful to the reporter for their frank and open report that highlights the dangers of becoming distracted when operating at airfields with other adjacent sites. In this case, although the incident was not an infringement per se because a Drop Zone is not controlled or regulated airspace, Drop Zones should be avoided in a similar manner to Glider Sites because of the obvious safety implications.

Importantly, the fact that an aircraft might be visible on the ground at a Drop Zone does not mean that there might not be other aircraft dropping parachutists and so this is not a reliable way of assessing a Drop Zone's activity. Furthermore, it is highly unlikely that parachutists will be seen prior to opening their parachutes, and difficult even when the parachutes are open. For that reason, Drop Zones should always be given a wide berth during their promulgated operating hours because the chances of seeing and avoiding parachutists in the air is slim.

Finally, the report also illustrates the pitfalls of relying on electronic navigation devices without a suitable back-up plan should they fail. Such equipment can fail or run out of battery at the most inopportune times and so a visual navigation Plan B must always be available incorporating recognisable ground features (ideally with vertical extent) that can be invoked at any time.

Dirty Dozen Human Factors

The following 'Dirty Dozen' Human Factors elements were a key part of the CHIRP discussions about this report and are intended to provide food for thought when considering aspects that might be pertinent in similar circumstances.

Resources	failure of GPS resulting in navigation doubt
Distraction	attention diverted by looking for second aircraft
Awareness	location of Drop Zone not assimilated during visual circuit
Communication	lack of communication with second aircraft regarding its position
Deviation	did not fly a suitable circuit pattern to avoid the Drop Zone

Report No.8 – GA1337 – Know your limits

Report text: I consider myself to be a sensible and low risk-taking pilot. I have always trained and had no real

rush to the finish line. I have been learning to fly with the ambition of flying my ex-military aircraft. Over the 4 years of the aircraft's restoration I learned to fly (PPL), did a night rating, IRR and built up my hours on PA28's and others. There was no rush. The military aircraft was completed and over the course of 2018/2019 I qualified to fly it. During this instruction I met fantastic pilots, all ex-RAF guys and/or RAF instructors and their training was and still is, world class.

I solo flew the aircraft with 2 others down to a weekend meeting where I mixed with incredible pilots of unattainable standards. On the Sunday the weather was bad but 3 aircraft had to fly back to home base some 150 miles north, mine included. We agreed there was an hour-long window around 11am and so we all set off with the 2 other aircraft in formation and me behind them solo navigating.

The journey was the hardest flight I have ever undertaken. The weather was raining with low clouds and bad visibility all the way - there was a front coming down that I had to pick through. It is important to note here that ex-military aircraft are 'Permit to fly' aircraft and can only fly VMC otherwise I would have climbed above the weather. Eventually the weather cleared, and I landed at home base about 15mins after the other 2 aircraft. At no time during the flight was there any danger, and my training had kept me calm and focused. I was elated. After a debrief I got ready to fly my SEP back to its home base but the weather had closed in and the visibility was low with a cloud height of 300ft. I waited.

Eventually the visibility got slightly better and the cloud height raised a little. This is where it all went wrong. I decided to depart and started to taxi to the hold. I missed a turning on the taxiway and had to turn around. I got to the hold and the tower asked if I was sure that conditions were safe. I waited, rang my home airfield, who confirmed the bad weather was local to me, waited a few more minutes then lined up. There was a strong crosswind from the left and the clouds were around 400ft. I sat there for a few seconds then applied full power; 10secs later I was stopped on the grass to the left of the runway having slewed to the left at 40 knots or so and gone straight off the runway. I was not hurt nor the plane damaged, but this inevitability shut the airfield for 2 hours while I was recovered. I got a taxi home.

So, what happened? After many hours and sleepless nights, I have come to these conclusions:

- I was extremely tired after the taxing flight. I was on a high and didn't realise this.
- Being around pilots way beyond my ability made me over-confident.
- I ignored my own limits. The weather for the home flight was way too bad for my experience level. I had 'get home-itis'.
- There were obvious signs that I ignored during the Taxi. I missed a turn! Why? The Tower we're concerned! I should have turned back to the Apron.
- The conditions were poor. I should never have approached the aircraft.

I consider myself to be reasonably intelligent person, aware of these issues, and yet I ended up where I did. Thankfully no one was harmed but it could have been so much worse. My advice is to never breach your own self-set limits. You set them when you are thinking straight, so trust them.

CHIRP Comment: Thank you to another reporter for their candid report revealing an incident that was not their finest hour. It is only through such altruistic contributions that we can learn lessons to the benefit of us all. Personal performance is one of the hardest things to assess because we all tend to over-estimate our abilities when faced with situations that might be marginal, especially if we have been involved in other demanding activities beforehand (known as 'risky-shift' in some circles).

Press-on-it is a classic example of convincing ourselves that things aren't quite as bad as they seem and that 'it'll be alright on the night' when a dispassionate and analytical decision-making process would instead suggest otherwise. This is especially important when there isn't a credible alternative 'Plan B' (other than not to fly in this case) and so the pressure to achieve the desired outcome and accept risks that we ought not to can be quite compelling.

- I** Illness (do I have any symptoms that might affect my ability to fly?)
- A** Attitude (am I emotionally ready and fully focussed on the flight?)
- M** Medication (am I taking any prescription or over-the-counter drugs that might affect my performance?)
- S** Stress (am I under pressure or have any worries and anxieties?)
- A** Alcohol (have I been drinking within the last 24 hours?)
- F** Fatigue (am I tired or not adequately rested?)
- E** Eating (am I adequately nourished?)

If we think of the IAMSAFE mnemonic, then the first 'A' stands for 'Attitude' (am I emotionally ready) and the 'S' stands for 'Stress' (am I under pressure); an honest answer to both of these questions would perhaps have caused the reporter in this case to have thought again. As the reporter says, if there are clear signs that things aren't going well and that others are raising concerns then it's time to have a long hard think about what you are planning to do and whether it's a risk worth taking.

Dirty Dozen Human Factors

The following 'Dirty Dozen' Human Factors elements were a key part of the CHIRP discussions about this report and are intended to provide food for thought when considering aspects that might be pertinent in similar circumstances.

Stress	over stimulation from the previous flight
Fatigue	tiredness after previous demanding flight
Pressure	desire to get to home airfield
Awareness	crosswind threat not fully assimilated; other errors ignored
Complacency	overconfidence in ability to deal with crosswind

Report No.9 – GA1338 – Slippery PA38 access step

Report text: Whilst disembarking a PA-38 post flight I placed my left foot on the step secured to the fuselage below the starboard wing trailing edge. As I released my footing from my right leg - which was on the trailing edge - my left foot slipped from the step and I fell vertically-upright to the apron and landed heavily. I then lost my balance and fell back, impacting my head and lower lumbar region on the apron. I suffered a small cut to the back of my head and bruising as well as back pain.



I subsequently learned that other persons have experienced similar falls over the last 3 years due to slippage on the steps of these types: one had severe leg injury and complex surgery; and another had a contusion along his inner quad which could easily have been serious in respect of femoral artery damage. To clarify, the step does have non-slip tape on it (see picture) but, as with all these things, it is below its original efficiency, especially when wet. I would suggest that all operators/owners of these aircraft inspect the condition of the step surfaces and, where necessary, ensure the non-slip surface is intact.

I also think it's worth highlighting that the PA-38 has a shorter wing chord than the PA-28 so to close the door and lock the top latch means you have to slide around the door; if a person is used to a PA-28 with a longer wing chord (where you can remain comfortably on the inner wing to close the door) it's an easy 'oversight' if you expect footage when stepping back on a PA-38. I have communicated my observations to my line manager for awareness and promulgation within the organisation because it is important to highlight the hazards of access/egress if the surface of the steps are not non-slip. They responded positively and requested an SMS report form be completed - the incident will be discussed at the next Safety meeting.

CHIRP Comment: Ensuring that surfaces that we will be stepping on are safe sounds like an obvious precaution but when was the last time that you inspected the friction surfaces of such things as aircraft access steps? Although it's not exclusively a winter issue, there are many considerations to think about during winter operations and so it's very easy to overlook something as simple as this. For the sake of a minor outlay in refurbishing such surfaces, a nasty fall or injury could be prevented. Which brings us also to the matter of suitable footwear for flying - those trendy shoes or boots with slick-bottomed soles might not be the best idea after all.

Finally, on these types of aircraft it's best practice to come down from the wing backwards, not forwards, so that you can steady yourself with a hand-hold if you do slip; and also brief passengers if you have any because they will probably not be aware of the risks of slipping on such steps etc.

Dirty Dozen Human Factors

The following 'Dirty Dozen' Human Factors elements were a key part of the CHIRP discussions about this report and are intended to provide food for thought when considering aspects that might be pertinent in similar circumstances.

- Resources** unsuitable slippery step surface
- Distraction** focusing on door closure to the detriment of an all-round appreciation of risks
- Awareness** did not assimilate that the step surface was worn/slippery

The CHIRP Aviation Programme also provides a facility for confidential reporting of **Bullying, Harassment, Discrimination and Victimisation (BHDV)** where there is an identifiable safety-related concern. CHIRP has no specific expertise or resources to investigate BHDV reports. CHIRP's role is to aggregate data to build a picture of the prevalence of BHDV in the aviation sector. See our [BHDV page](#) on the CHIRP website for further information.



“What if, and I know this sounds kooky, we communicated with the employees.”



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Director Aviation –
ATC, Flight Crew and GA

Jennifer Curran
Cabin Crew Programme
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