

CHIRP General Aviation FEEDBACK

Edition 81| 3/2019

It is disappointing to advise our readers that the recently appointed Chief Executive has resigned for personal reasons. We are grateful for those offering temporary assistance to ensure the Aviation Programme operation continues as normal.

In a valedictory message to FEEDBACK readers, Ken Fairbank says that he is saddened not to be writing future Editorials but is sure that the good work CHIRP does will continue.

Captain David Harrison – Chairman of CHIRP Trustees

EDITORIAL

Weather! The British summer! One minute we are baking and the next we are waterlogged. Of course, we take this all in our stride because it's what we do. But how do you fill your time while waiting for the airfield to dry out from its latest soaking. One useful thing you can do is refresh yourself on the information contained in the CAA's [Safety Sense](#) series of publications. In [Leaflet No 7](#) (Aeroplane Performance), for example, you would be reminded that you should allow for a 10% increase in take-off distance to 50 feet for every 10 degree C increase in Outside Air Temperature. And that a wet paved surface can increase your landing distance by 15% and on wet grass you should anticipate an increase in landing distance of up to 60%! Many of the subjects reported to CHIRP are covered in the Safety Sense series and we often recommend specific Leaflets – as in the report below about Right Hand Seat Flying – but if you have the time, go ahead and browse them all. It's worth it.

Not all reports submitted to CHIRP appear in FEEDBACK; this decision is taken by the General Aviation Advisory Board (GAAB) and often reflects an inability to redact a report sufficiently to preserve confidentiality without losing its sense. Some reports are not published because the GAAB feels they are inappropriate in tone or have little relevance for Human Factors, whereas others may be referred to the CAA for action. However, all reports are reviewed whether action can be taken on them or not. In all its guidance to the CHIRP team, the GAAB (like the other advisory boards) always takes preservation of confidentiality as its over-riding principle. Lastly, you should know that the CHIRP comment on all reports published on FEEDBACK is a position taken by the GAAB and should not be seen as the opinion of any one person.

DID YOU KNOW?

From the March 2015 Update, every FLARM device needs to be updated with the latest firmware version at least once per year (rolling 365 days). If it isn't updated, it may not provide warning of conflicting traffic. For more details, see the [FLARM website](#).

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COMMENT ON FEEDBACK EDITION 80 - POOR AIRMANSHIP - BAD PRACTICES

Comment Text: PPLs are taught to go-around straight ahead and expecting any pilot to start manoeuvring and trying to look down at such a critical moment of flight [during a go-around] is unreasonable.

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- [Comment on FEEDBACK Edition 80 - Flight into Controlled Airspace](#)
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- [8.33 kHz Radio Concerns](#)
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CHIRP Response: We don't advocate manoeuvring but when a final approach is baulked by an aircraft taking-off, it is essential to keep the conflicting aircraft in sight. In the majority of cases, establishing a positive climb then taking a gentle offset towards the dead side will achieve a safe go-around while achieving adequate lateral separation and remaining visual with the departing aircraft.

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COMMENT ON FEEDBACK EDITION 80 - FLIGHT INTO CONTROLLED AIRSPACE

Comment Text: I have not strayed into controlled airspace so far, touch wood. But I wonder about cockpits festooned with GPS screens and the distraction they provide to pilots who should perhaps spend more time looking out?

Time spent with the map self-briefing on tracks and airspace along one's route of flight is important before departure. Too many pilots simply select 'Direct to' on their GPS with screens not big enough, like an opened map, to fully appreciate the airspace en route.

I cannot help but think that the division of attention due to Farnborough radio chatter and GPS devices has perhaps made us more complacent, and that this has led to the apparent increase in infringements.

CHIRP Response: The CAA-chaired Airspace Infringements Working Group (AIWG) has determined that pilots using GPS are less likely to infringe controlled airspace than those who do not use GPS. However, the key is to use GPS effectively by being fully conversant with how to operate the device in the aircraft to be flown prior to flight. Emerging thinking is that it is good to plan routes using electronic devices but important to then plot the route on a paper chart that provides a broader orientation and better Situational Awareness through seeing 'the big picture'. Planning that follows the ['Take 2'](#) guidance to allow a margin of 2 miles/200 ft from controlled airspace provides some wriggle room such that pilots can get their heads out of the cockpit and look out without the risk of minor deviations resulting in an infringement.

For further top tips on navigating using GPS see the [airspace4all](#) website.

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COMMENT ON FEEDBACK EDITION 80 - CHANGES TO 8.33 KHZ FREQUENCIES

Comment Text: Under the new 6-digit radio frequency regime, the Reporter set 118.208 MHz instead of 118.280 (for Thruxton). Digital readings and settings are notoriously prone to error, particularly at their lowest magnitude ends (as accidents due to pressure setting errors have shown).

As a long-time GA pilot with Human Factors interests, perhaps I can point out an aspect which might go some way to avoiding the last digit error in radio frequency setting. In the range of newly offered frequencies, the final (6th place) digit only appears as either '0' or '5'. Checking this is so will eliminate 80% of possible (random) errors. I suggest this as a simple check.

CHIRP Response: Thank you. It is always good practice when making any selection, including radio frequency changes, to 'Identify - Select - Check Selection'.

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RIGHT HAND SEAT FLYING WITH NO TRAINING

Report Text: Towards the start of February, a newly qualified friend and I decided to take our C150 to a shortish grass strip in []. My friend who had only received his licence a few weeks prior was Captain/PIC and wanted to practise some short field landings and we chose the best location for it - a 700m well-kept strip with hedges at either end of the runway.

The flight to the airfield was uneventful, the weather was perfect VFR and visibility must have been in excess of 50nm. We briefed before leaving that upon entering the downwind leg at our destination, if there was little or no traffic in the circuit, I would take over and conduct a touch and go to show what a short field was like. Being more experienced in short field ops on that particular aircraft, I saw no issues with this during the briefing and we departed. The 700m strip was no problem as in the past, I had visited airfields with half that length runway without issue.

In the downwind control was handed to me in the right-hand seat and I began my pre-landing checks, we turned for a base and then final and all remained uneventful and the approach was stable. There was an Air-to-Ground controller on duty who gave us the wind/QFE and there was nobody else in the circuit. I brought it in over the hedge as per the standard approach and touched down smoothly just past the numbers. I proceeded to tap the brakes, bring the flaps up and apply full power. As I advanced the throttle to full I applied some back pressure to get the nose wheel out of the grass and decrease

the amount of friction to gain more airspeed - at this point I realised we'd used more runway than planned and were not yet at our rotation speed of 55kts. At 45kts I chose to continue the take-off instead of abandon and come to a full stop. We rotated and our rate of climb was minimal, at that point the Captain/PIC pointed out that we were not climbing and that the carb-heat was still set to 'Hot' reducing the RPM. He then set the carb-heat 'Cold' for me and we began to see a better rate of climb immediately.

We cleared the hedge by 20-30ft and proceeded to fly the rest of the circuit as per the airfield AIP and control was handed back to the PIC. It is worth noting that the hedge was cleared and no damage was sustained to the aircraft, crew, or local surroundings/environment.

Lessons Learned: I think there are 4 things to learn from this event.

1) Flying from the right-hand [i.e. non-standard] seat should be discouraged at all times unless specific training has been conducted by a qualified Flying Instructor.

2) This leads into the second point which is when a pilot has little to no experience flying from the P2/right hand seat all normal memory items and workflows are disturbed significantly. For instance, the pre-landing checks (BUM-FFF-ICHHL or similar). For me, the error came on a short final where I was concentrating on performing the landing/T&G from a position with which I was unfamiliar; at this point I would usually conduct a CRAP check (carb-heat set cold, runway checked, approach stable?, permission granted?). This would have prevented the carb-heat being left set to 'Hot' and the engine would have had greater power to conduct the touch and go successfully. Especially on a somewhat already underpowered Cessna 150. Muscle memory is also a contributing factor in that when all of the pilot's experience is from the left hand/P1 seat moving across and changing position means that items normally conducted with the right hand (which would be on the throttle) such as turning the carb-heat to Off.

3) The third lesson comes down to the individual but I believe had an effect on the occurrence, nonetheless. I believe that having 100 hours on type and having flown only that aircraft recently, my confidence was higher than it should have been, meaning that I believed I was able to fly from the right seat without issue which was not the case.

4) Tunnel vision also came into effect and instead of aborting the take-off I decided to continue which was, I believe in hindsight, the wrong decision. When you're in a situation that isn't going the way you want it to, it's important to take a step back and think about what is happening. I was too focused on keeping the aircraft flying and maintaining airspeed after taking off slower than normal yet trying to attain a rate of climb substantial enough to clear the hedge.

CHIRP Comment: The reporter is to be commended for an honest report and for correctly identifying the main lessons. No matter how experienced a pilot may be, flying from a seat not normally used without proper training is demanding and it may not be possible to foresee all the potential issues beforehand. In this case, operating from the right-hand seat would use up extra mental capacity and leave the pilot more prone to making slips and errors, particularly as the skill being practised was a demanding one and there would have been at least some pressure to produce a good demonstration for his friend. The left-seat pilot, who was responsible throughout for the safety of the flight, would have been better advised seeking an instructor or joining a coaching scheme if he wished to learn and practise a new skill. His friendship with the more experienced right-seat pilot had the potential to impose a pressure to go along with the plan. It is also worth noting that there may be implications for the aircraft's insurance if a pilot is flying it without for formal training in the seat he is occupying.

As mentioned in the Editorial, we would also like to remind pilots to refresh themselves periodically on relevant operational issues from the CAA's Safety Sense series of publications. [Leaflet No 12](#) deals with operating into Strips.

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POTENTIAL OBSTRUCTION OF CONTROLS

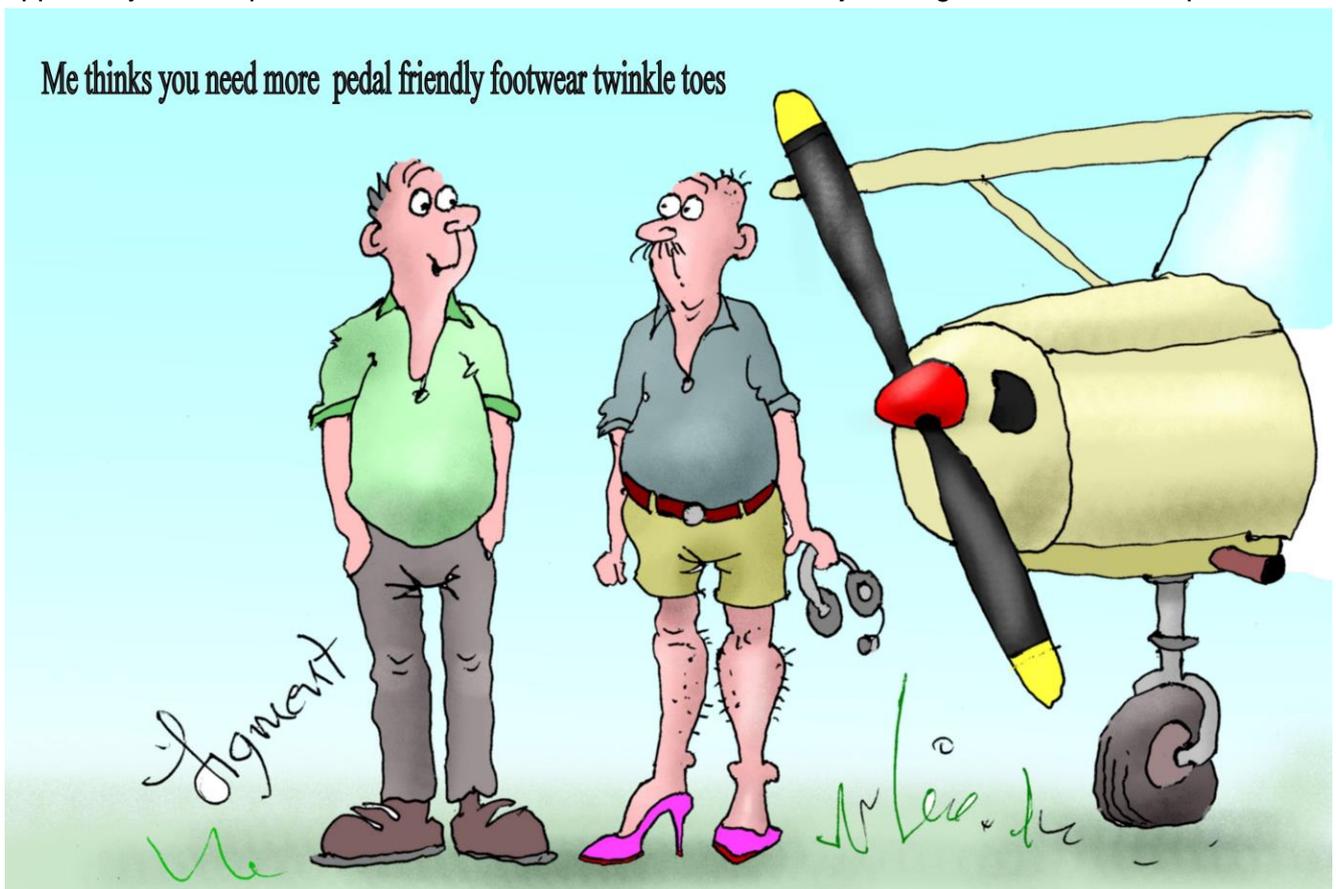
Report Text: I was on a solo flight in the left seat of a PA28 from [] to []. The visibility was good and the cloud base about 2500'. The flight was pleasant but uneventful until I noticed, on late downwind that my right shoe was somehow 'attached' to the rudder/brake pedal combination.

Attempts to pull or wriggle it free achieved nothing. As it was a lace up shoe, removing my foot from the shoe in flight would have been very difficult, even it had been a good idea. The aircraft handling seemed completely normal and my use of the rudder pedal was unaffected. The conditions were dry and I was the only aircraft in the circuit, so I continued to an uneventful landing. On the ground I

needed to turn on the runway and backtrack to parking. I had slight difficulty operating the starboard brake but otherwise no problems. After parking and shutdown, I reached down and undid the laces so that I could remove my foot from the shoe. The outer edge of the welt was firmly wedged between the edge of the aluminium brake pedal and the brake operating rod which runs up alongside it. It took significant effort and wriggling to remove it. Once free, I could see that the shape of the pedal, which is curved at the top, left a 'V' shaped space between it and the brake operating rod down which I had somehow managed, inadvertently to wedge the shoe. Once there, a projection on the aluminium moulding had lodged in the shoe tread, making it difficult to reverse the situation.

In the event, this turned out to have no bad outcome. I'm still not sure how it happened in the first place - presumably I had my foot in an awkward angle at some stage, instead of flat on the pedal, otherwise it couldn't have occurred. However, I've no recollection of that. This was a straightforward approach in good weather with no traffic distractions, so I didn't feel particularly stressed - more a feeling of 'that's odd but it doesn't feel dangerous'. I think I was correct to continue the approach in these circumstances, although it was only later that I thought that this could have jammed the right brake on, and I would have unexpectedly veered on the runway as I touched down. Considering the difficulty I had dislodging the shoe once I'd landed, doing so in the air would have been quite dangerous and certainly not to be considered close to the ground. Going around would have been an option but wouldn't have changed things. If I'd had an experienced fellow pilot in the right seat, I could have handed over to them, but that would only have been a good idea if they were happy flying from that seat (which can be the case in our group as we have a number of airline pilots in the group).

I had never heard of this happening before, but searching the net found one reference to it being a known problem on the PA44, which has similar rudder pedals and several in other light aircraft. It also turned up some interesting online discussions on pilots' choice of footwear elsewhere in the world, including a number who say they fly barefoot in hotter climates or in flip flops. Cowboy boots have apparently been a problem sometimes in the US, with the heels jamming under the rudder pedals.



CHIRP Comment: A simple but potentially dangerous situation. This comprehensive report needs no additional comment – thank you.

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AIRSPACE INFRINGEMENT

Report Text: On departure climb out from Nottingham I encountered a patch of significant turbulence that caused the autopilot to disconnect. I stabilised the airspeed and corrected the steep climb that had started at the time of the autopilot disconnect and only then realised that this had caused me to climb into East Midlands airspace from below. I immediately turned more westwards to exit the airspace and called East Midlands Radar as soon as the situation was stabilised.

On landing at my destination, I called the East Midlands Radar centre to apologise and explain the cause of the airspace infringement.

Lessons Learned - I planned to climb quickly to 2000 ft to get above Nottingham Airport airspace so as to quickly get clear of their circuit traffic. This was only 500 ft below East Midlands airspace.

If I had stayed at 1,500' then I would have had more space in which to control the unexpected climb.

CHIRP Comment: The reporter's analysis is correct; it would have been better to have remained at 1500 ft. The reporter was also correct in telephoning East Midlands ATC afterwards; an apology and an explanation in such circumstances is the professional thing to do.

There are all manner of autopilots with varying capabilities and sophistication. As a general rule, they should be engaged when in trim and monitored carefully. Even then, as in this case, they can obey Murphy's Law and disconnect unexpectedly and inconveniently.

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8.33 KHZ RADIO CONCERNS

Report Text: This is not an incident report but a general observation in response to a number of reports of 8.33 radios being operated incorrectly. My club has three aircraft and as a result of EU rulemaking we now have five different radios in the fleet and two different transponders. The new radios are significantly more difficult to operate than their predecessors.

Some have a system where the rotary knob changes all three decimals, some require a cursor to be slid sideways before the digit or group of digits can be changed. On one the volume control is so close to the C/N switch (I leave you to guess what that is) that it is impossible to adjust the volume without changing the C/N display. One has a volume knob which, if inadvertently pressed for a couple of seconds while adjusting it, switches the radio off. Some have the old-fashioned squelch lift test button, others do not.

The new Mode S transponder also requires significantly more switch selections and button presses than its predecessor. Meanwhile our local controllers have devised procedures which often require three or even four simultaneous squawk and frequency changes in the space of about seven minutes. I doubt that there are ANY ground stations within 200 miles of where I fly which have an adjacent frequency separated by less than 25 kHz.

The makers of these avionics have, it seems, never been in an aeroplane. The constant fiddling with frequencies and squawks has completely replaced lookout as a cockpit activity. We could, I suppose, 'stud' the sets [pre-tune frequently used frequencies into easily dialled studs or buttons] but students will eventually have to learn to operate the sets manually. Oh for the 10 channel VHF box we used to have in the Chipmunk! Oh for the simplicity of the ARC 52 in the jets of the 1950s and 60s. These new pieces of kit have been designed by non-flyers, which is perhaps why the Mode S transponder has a 'VFR' button which selects 7000. Since when did 7000 mean VFR in this country? I could go on. On my once a year night flight on my own, in the dark, all by myself, over featureless terrain, I found that maintaining a scan while selecting a new (and unexpected) frequency and at the same time dialling up a new squawk was all but impossible.

CHIRP Comment: Cockpit ergonomic issues are as old as aviation and in this area of Human Factors it seems not all developments are positive. Many items of modern avionics leave much to be desired in terms of ergonomics. As frustrating an issue as this is, it is still a known one and therefore it can be addressed. Aircraft owners who have the option to choose their avionic equipment should consider the ergonomics and not just the functionality. However, pilots hiring aircraft from flying clubs have little choice over the equipment installed in a hired aircraft and possibly limited opportunity to familiarise themselves with it before flight. The AIWG has identified lack of familiarity with equipment as a significant factor in own-aircraft and hired-aircraft infringements. It is clear, therefore, that all pilots should make every effort to familiarise themselves with the aircraft equipment before flight, including using interactive websites where these are available for specific items of equipment.

With regards to Mode S transponders, readers will be interested to learn that some ATC Units allocate the same squawk to several different aircraft in the same area and use the Mode S Flight Identification facility to identify each individual aircraft. This explains why you may hear your squawk being allocated to other aircraft.

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DOWNWIND LANDING

Report Text: After several months of not flying, this was my first landing away from my home airfield for eight months though I had flown for over three hours, including refresher instruction, and made ten take-offs and landings in the previous two weeks; so my general handling was very current. Before departure I had a problem with the microphone jack of the aircraft radio. This was fixed by our engineer and seemed to be (and was) working satisfactorily.

A low but stable cloud base of about 1800-2000ft made an overhead join to [], which had a reported cloud base as low as 700ft (but actually more like 1000ft), impossible so I was asked to join downwind for runway 26. This airfield has a circuit with a lot of "avoids" so I was probably over-concerned to fly a circuit that avoided various villages and had the circuit chart clipped to my PLOG. There were no other aircraft in the circuit and I got no reply to my downwind call, though this was actually because the A/G operator was away from the radio for a couple of minutes. I was concerned about my radio and so, late downwind, asked for and received a radio check. I failed to notice that I had actually joined the circuit in the wrong direction and, possibly because of other aspects of workload, never questioned my circuit even, though I had the landing runway and circuit direction (26LH) clearly noted on my PLOG. Essentially, I was fixated on correctly flying the wrong circuit.

With a surface wind that was from about 215 degrees (about 45 degrees crosswind but with about 6-8 knots of tail wind component) I landed long but with over 300m of runway in hand and had not had to initiate a go around. I was then informed by the A/G that I had landed downwind.

I consider that factors leading to this error were;

1. A lack of recent currency on flights to other airfields leading to an increase in workload,
2. An over concern with details of the circuit, especially noise abatement, and a desire to fly the circuit correctly masking the gross error of joining downwind the wrong way,
3. My familiarity with [] - an airfield I know very well, leading me to not recheck my approach once I thought I had it established in my own mind,
4. Distraction from thinking that my radio might have become faulty (getting in the way of Aviate, Navigate, Communicate),
5. Believing I'd joined the circuit correctly and never doubting that so ignoring several fairly obvious clues that I hadn't.

As a result of this incident I have revised my approach checks to include a DI visualisation check against declared runway, even at airfields I am completely familiar with, and to check with the DI that downwind is indeed reciprocal to the landing runway. I will do this even when flying circuits at my home airfield to make it habitual.

CHIRP Comment: We are grateful for this honest report and comprehensive analysis. We can all learn from this occurrence and first-class report.

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Reports received by CHIRP are accepted in good faith. While every effort is made to ensure the accuracy of editorials, analyses and comments published in FEEDBACK, please remember that CHIRP does not possess any executive authority.

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Contact Us:

CHIRP, Centaur House, Ancells Business Park, Ancells Road, Fleet, GU51 2UJ
01252 378947 | reports@chirp.co.uk | www.chirp.co.uk

