

CHIRP GA FEEDBACK

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EDITORIAL

This is the first edition of FEEDBACK to be published using only electronic media. We aim to reach as many as possible of the 33,900 GA pilots holding UK licences. So please remind your friends and colleagues that they need to update their e-mail addresses held by the CAA or download the CHIRP App to their smartphone or tablet if they are to see FEEDBACK in future.

To download the App for Apple products, click [here](#). For Android, click [here](#). (Alternatively search using the words CHIRP and safety) Note that each time a new edition of FEEDBACK is published, the system broadcasts a notification message. To avoid nuisance messages, the notification for e.g. GA FEEDBACK will only be sent to those readers who last viewed GA FEEDBACK via the App.

One of the measures of success for electronic distribution will be that we continue to receive plenty of the honest and open reports such as those you will find in this edition of FEEDBACK. What we would also like to see is more reports that might be entitled "I very nearly". These would be about errors of judgement or mistakes that were discovered before they developed into an incident. Learning about the circumstances in which these errors occur and the signs, prompts and checks that saved the day would help us all be more alert to the causes and therefore less likely to make them.

Ian Dugmore - Chief Executive

INFRINGEMENT OF RANGE

Report Text: I was making a private flight to [], which I have visited many times, and have made several NDB/DME arc approaches, usually to R/W []. I had done all appropriate flight planning, including NOTAM check and telephoning for PPR earlier that day, when I requested an NDB/DME arc approach for practice. Having obtained the ATIS, I called Approach, and was told that the DME was U/S. As I have an IFR certified GPS, I elected to make the approach substituting GPS for DME ranges. ATC advised me that it would be under a Basic ATS and reminded me that [] range was active. I was asked to report when established on the arc. I made the approach exactly as the current [proprietary] plate. I set up and identified the ADF, and DME (working at 17nm range), and set up my GPS to give a distance to the DME. The GPS distance was 0.2nm greater than the DME readout, which I regard as within acceptable margins. I turned onto the DME arc and called "established". A different controller asked me to report established on final approach track. I continued in the procedure, monitoring the GPS distance to the DME. The DME indication itself briefly failed several times. My greatest radius was 9.8 m; by the time I was near the final approach it was 9.5m. I made all the appropriate step-downs, and made my rate 1 turn onto final approach track with a 10° gap between the ADF indication and the FAT. There seemed no significant wind, and I had made no abrupt bank to cause any ADF dip effect. I was very surprised to be called by Approach to say that I had infringed the range. When I looked up at my VFR moving map display, I was on a westerly heading about 1m north of the range southern boundary, which runs east-west. As I was already in a turn to the S, I continued onto the FAT. At no time did I have any indication on my IFR-legal equipment that I was north of the FAT. I continued the remainder of the approach normally. A visual check appeared to show exact alignment with the runway, better than an average NDB approach. All my equipment appeared to be working normally. In particular, the compass system appeared accurate.

Lessons Learned: I am rather puzzled by this, but would note that this IAP is in uncontrolled airspace, and that the margin between the track drawn on the [] plate and the [range] boundary is only about 1 mile. The weakest element in the system here seems to be the ADF system itself, which is perhaps not inherently accurate enough to work to a 1 mile margin at almost 9 miles. I do not think the unserviceable DME ground station, with my use of GPS distance to the same facility, was a factor. I could have asked my passenger to monitor the moving map during the procedure; I could have done so myself, but that would break my proper instrument scan, and would be "cheating" in an examination. However, that would have prevented the infringement. As I was having to look at the GPS for distance indications, I could perhaps have used it to crosscheck my bearing to the field, but that

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would have been a bearing to the DME facility, not the NDB, so not correct. Additional margins could have been secured by flying 1/2 mile inside the DME arc rather than on the outside. I am not qualified to comment on the procedure design, but an arc drawn nearer/lower altitude would obviously help.

Unit Comment: The unit has conducted an internal inquiry in accordance with our procedure for all reported occurrences. Whilst no procedural errors were found to contribute or prevent the infringement, it did raise the question of what phraseology can be used to be unambiguous when a pilot requests to make a training approach. The unit has taken this opportunity to ensure that the ATCOs only use standard phraseology.

Traffic information on all relevant approaches is passed to the controller at the range, as in this case. The published approach procedures have been in place for more than ten years, without any substantial level of incursions into the adjacent range. The procedure is designed to provide adequate distance from the boundary of the range area, and includes a note drawing the attention of pilots to the proximity of the boundary.

CHIRP Comment: The range controllers control entry to the range and provide traffic information but do not control the routing of range traffic; pilots using the range are able to manoeuvre tactically within it to meet their training objectives. The Radar Analysis Cell at Swanwick confirmed that the infringing aircraft entered the range at 1121:16Z, was 0.6nms inside the range (at the furthest point of penetration) and exited the range at 1122:08Z. The infringement probably resulted in the accumulation of a number of small inaccuracies: NDB accuracy, the distance error and the slightly late turn on to the FAT. Also, as the reporter notes in his commendably thorough analysis, the published procedure does run very close to the Danger Area boundary. Several Members of the GA Advisory Board consider the procedure does not allow sufficient margin for the tolerances inherent in a NDB/DME approach. However, procedure design is primarily aimed at safe terrain clearance; airspace conflicts are a secondary consideration as these can be resolved by ATM agreements and coordination. Moreover, the subject procedure has been in place for many years and there is no undue history of infringements. That said, it could be wise to practise approaches where there is a greater margin, particularly if there is doubt about the serviceability of one of the navigation aids.

Perhaps the most important lesson to draw from the occurrence is that, notwithstanding that a GPS is certified, it is only certified for known approaches i.e. those that are contained within its database. Using ad hoc approach procedures for training purposes can introduce errors that may not be evident to pilots or controllers. For example in an approach using a DME the correct distance display is dependent on how the DME is set up. At the aerodrome in question the DME is delayed to read zero at one end of the runway and (approx.) half a mile at the other end. Errors can occur if the GPS is not set up to replicate the DME with further errors possible in the accuracy of the GPS data. The resultant potential errors may have contributed to the infringement and in the worst case could increase the risk of CFIT on the approach. Although in this incident the procedure was flown in good VMC and there is no suggestion that it would have been attempted in IMC, the notified (published) approach should be flown with the equipment required. The bottom line is that when flying a NDB DME approach you need an ADF and a DME to do it. We are really grateful to the reporter for sharing his experience and bringing this lesson to the fore.

[There is a very useful CAA publication ([CAP773](#)) about Flying RNAV Non-Precision Approaches in Private and GA aircraft (due to be updated shortly). It is a complicated subject but important to take the time to understand it.]

POSSIBLE AIRSPACE INFRINGEMENT

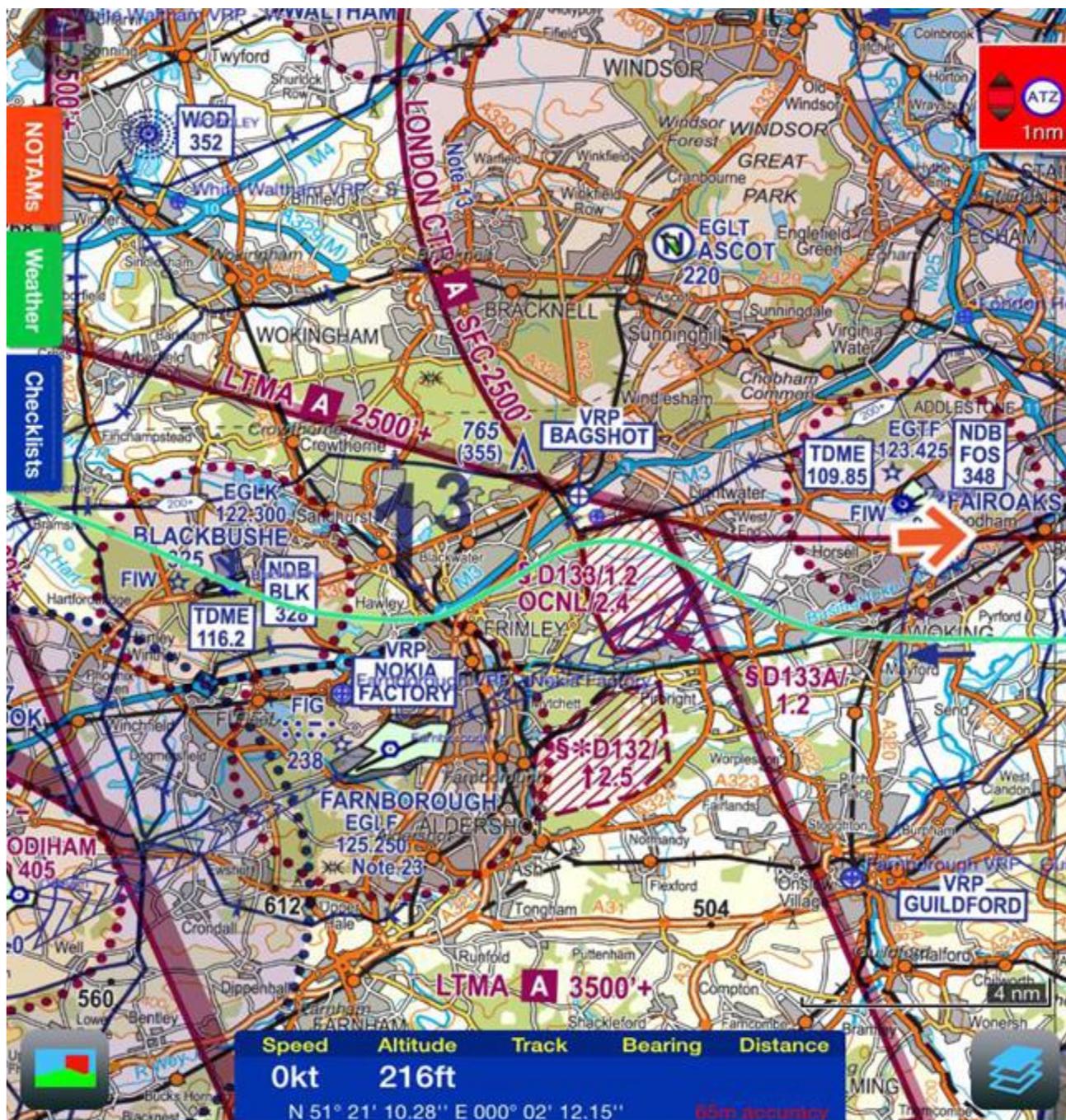
Report Text: I was flying on a VFR flight in VMC. I was receiving a Basic Service, squawking Mode C and flying at 2,400 feet QNH. My co-pilot was operating the radio and I was handling the aircraft. The controller requested my assistance and asked me to turn left to avoid jet traffic that was established on the ILS to runway 24 at Farnborough. I changed heading to follow the M3 as requested. This new track took me towards the Bagshot radio mast on the Western corner of the Heathrow zone. As I approached the Bagshot radio mast I turned right onto an easterly heading to avoid entering the Heathrow zone. [See print from flight log below with the route shown in green].

My co-pilot questioned this decision as I had been instructed to follow the M3. After a short time, the controller thanked me for my assistance and said to resume own navigation towards the Ockham VOR. After landing we checked our plot on the iPad mapping software, which confirmed that we just remained clear of the Heathrow zone. A discussion ensued with my co-pilot and other pilot as to whether we should have carried out the instructions of the controller or taken the decision to change heading to avoid entering Heathrow Zone. There were a number of opinions as to what the correct action was.

Lessons Learned: There is perhaps a popular misconception that a pilot must always follow the instructions of a controller to the letter even if in doing so it would involve entering other controlled airspace. In this particular

instance we had two choices, continue as instructed into Heathrow's Zone or turn right and possibly cause a conflict with IFR traffic on an ILS. There was insufficient time to contact the controller and make him aware of our dilemma. I took the decision not to enter Heathrow Zone, which in the end didn't cause a problem but it could have been very different. My suggestion would be to make other pilots aware through publishing articles of this possible conflict to avoid difficult decisions having to be made in the air.

One further point I particularly wanted to make. I wouldn't want my report to in any way infer any criticism of the ATC unit who have always been very helpful to me when requesting a service.



CHIRP Comment: The reporter showed commendable awareness and common sense. It is unusual to be left in circumstances where there is a decision to make; normally one would expect to resume own navigation as soon as the traffic on the approach was clear. A common ATC technique is to provide Traffic Information and allow pilots to resume their own navigation with the traffic in sight. However, the bottom line is that pilots should not enter controlled airspace unless they have been specifically cleared to do so. The reporter acted correctly.

COMMENTS ON GAFB 59

Report Text: I am writing in response to your editorial in GA FEEDBACK Issue No.59. I am pleased to see that a review on joining airfields is under way, as I have had occasional misgivings over the standard overhead join. I was particularly pleased that you put in print the need to look out, listen out, and fly defensively and BEHAVE IN A COURTEOUS MANNER. Not many people spell out the last point! I look forward to hearing the findings in due course.

CHIRP Comment: The CAA Visual Circuit Working Group has concluded its work and the results will inform the development of the Skyway Code. First though, the CAA's VFR guide (www.caa.co.uk/vfr), which contains a mixture of airspace classifications, Rules of the Air and air traffic procedures will be updated to include any possible changes resulting from the Standardised European Rules of the Air (SERA) from 4 Dec 2014. Updates to the VFR Guide will be imported into the Skyway Code, which will provide guidance on the Rules of the Air in plain English with diagrams and examples just like the Highway Code for road users - hence the name Skyway Code. It is intended that the document will contain all sorts of practical advice including how to join and leave a circuit etc. and clear up some of those anomalies in how the Rules of the Air apply (or not!) to aircraft in the circuit.

COMMENTS ON GAFB 60

Report Text: Your commentary on 'Pilot Training' suggests that the precautionary landing is seldom tested by examiners. This is incorrect; the precautionary landing is a mandatory part of the PPL skills test schedule and cannot be waived by examiners. The elements of low-level circuit flying are also an integral part of the slow flight teaching syllabus. If there is a trend in some schools of students not being taught or examined on it I suggest the CAA flight examiners should take an interest as pilots would be missing out on a vital skill and standardisation point.

CHIRP Comment: The reporter is correct. We are grateful for the correction and apologise for our error.

- The [NPPL syllabus](#) for Simple Single Engine Aircraft includes precautionary landings in the skills test. For Microlights the forced landing with power will always be examined as part of the GST.
- The skills test for the [EASA Part-FCL Light Aircraft Pilot Licence](#) (page 47) includes the simulated precautionary landing but permits it to be combined with the simulated forced landing.
- The [EASA Part-FCL PPL](#) (page 169) includes the precautionary landing but does not permit it to be combined with the simulated forced landing.

Confused? Prior to Part-FCL becoming effective, precautionary landings were not mandatory items in the PPL test. Therefore if your training and testing did not include precautionary landings, our original advice that you should ask for this training on your next flight with an instructor remains extant.

OVERLAPPING AIRSPACE

Report Text: A couple of us have just returned from flying through France using [a propriety electronic planning aid] - which is of course great, but we did find one problem that unfortunately left us inside controlled airspace and conflicting with Commercial Traffic, leading to a report being filed against us both.

We were flying a route in France that took us close to the Swiss border. We didn't have the Swiss charts downloaded, but that was not (or more correctly shouldn't have been) a problem as we did not and were never intending to fly in Swiss airspace.

Unfortunately Swiss airspace for Geneva penetrates a reasonable way into France, and we infringed on the active approach to Geneva within France as it was not shown on our chart.

If a chart of the airspace in France is downloaded, everyone using it will expect to see all controlled airspace for France. Whilst I appreciate why it happened (Swiss airspace inside France), it is not a situation that can remain or else others will without a doubt also infringe.

The Manufacturer Comments: Unfortunately sometimes airspace projects over an international boundary, away from the country that actually has responsibility for publishing details of the airspace. The worst example of this (in Europe) is in the vicinity of Geneva. Because of this, it is generally a good idea, if you are flying anywhere near an international boundary, to make sure you have the charts loaded for any neighbouring countries.

CHIRP Comment: We are grateful to the reporter for this reminder that electronic charts may not indicate information about 'foreign' airspace that penetrates a national border. Since the sharing of airspace occurs

over many international boundaries (including England/France), we agree that it is wise to load adjacent airspace whenever a flight is planned near to an international border. In addition to preparing electronic aids correctly, it is important always to carry an up-to-date paper chart with the route annotated as this will indicate the relevant airspace.

COMMS FAILURE

Report Text: I was in the radio room at our local club when an aircraft called for joining information, which was given to him by the Air/Ground radio operator. The pilot did not acknowledge the response, so the radio operator repeated the response and asked for a readability check. The pilot did not respond. After a short while the pilot repeated the request for joining information, which again was given in response, and again was unacknowledged. Other aircraft in the circuit attempted to contact the inbound aircraft, also without success. The inbound pilot announced his aircraft type and his intention was to join for runway [] and he proceeded to make the normal calls as he progressed his circuit to land. Due to good communications among everyone else on frequency, everyone was aware that he was transmitting blind and using the wrong runway, so took appropriate action to get out of the way. When the inbound pilot called finals for [], we in the radio room were looking up the approach for him but could not see him. Since the approach is partly obscured by the orientation of the building I went outside for a clearer view. I could not see the approaching aircraft on the approach, so I scanned around the sky and then spotted him on approach to a different runway. Fortunately a microlight that was taxiing on that runway had by now reached the end and turned off onto the peripheral taxiway. The aircraft with the radio problem landed without incident. It was subsequently ascertained that the volume had been turned down.

Lessons Learned: Although thankfully the situation resolved itself without misfortune befalling anyone, this incident demonstrates the sort of chain of errors that one finds in many accounts of incidents with a more serious outcome. Upon approaching one's destination airfield one should always perform a FREDa check. The R in this is for Radio, and the standard check for the radio is to confirm which radio is selected (if you have more than one), check that its frequency is correct, then briefly kill the squelch (usually by pulling the volume knob towards yourself) so as to confirm that the volume is adequate by listening to the white noise that ensues. Even without having performed this check (or having performed it whilst on the other radio but not this one), when the pilot received no response had he then performed the above radio checks he would have discovered the problem and rectified it. Rule 45(5) of the Rules of the Air apply at this airfield because it is a licensed aerodrome with an A/G radio. This states that a pilot must "...obtain information from the air/ground communication service to enable the flight to be conducted safely within the zone". This rule assumes that A/G radios of licensed aerodromes are permanently manned during the published hours of watch. The reality for many airfields is that this is not practicable - there are not enough ROCC qualified personnel available for this to be realistic. Pilots know this and rather than circling about just outside the ATZ burning fuel while waiting for someone to choose to man the radio, we tend to follow some well-tried and trusted procedures to allow ourselves to conduct flight in the zone safely. We can determine a decent enough QFE from the Regional Pressure Setting and knowledge of airfield elevation, and even without that we have eyeballs. We can determine the active runway and circuit direction from the signal square, and wind direction and approximate strength from the windsock. So in this case, even if his radio has been dead, the inbound pilot should have determined the use by examining the signal square. He either didn't look at it or consciously chose to use the major runway instead - a questionable decision if so, given the doubt over his ability to communicate it to other users of the airspace. The final error was incorrectly reporting RW [] as RW []. On some airfields it might be possible for listeners to realise the error and deduce what was actually meant, but this one just happens to have a runway closely angled to the one reported. All licensed aerodromes' information is published in the AIP and popular guides. And even without referring to the appropriate documentation, the compass or DI will tell you which runway you are pointing at.

CHIRP Comment: The reporter's advice about FREDa checks is sensible. He might also have added that if you have a problem with your radio you should be very careful what you say in case your problem is that it is stuck on transmit! But radios can and do fail and perhaps the most important lesson from this occurrence is to be alert to the possibility of a single minor problem escalating into a chain of events and the risk of an accident. If there is a problem that doesn't immediately threaten the aircraft's safety - take some time to sort it out. If necessary, fly an orbit to give yourself some thinking time. If you can't solve the problem, don't dwell on it and let it sap your mental capacity - accept it as a limitation for the rest of the flight and think how you need to adjust your plan. One note of caution: you need to be extremely careful about using a Regional Pressure Setting to calculate a QFE because it may not be sufficiently accurate - but a local QNH would be a reasonable option. The pilot in this incident did the correct thing in transmitting blind his intentions. It was indeed unfortunate that

he lined up on a different runway to the one he had announced. We are not sure how he joined the traffic pattern but an overhead join to observe the signal square, windsock and the movement of other aircraft is usually the best way. Be careful though – an aircraft backtracking can provide a misleading indication of the in-use runway. If you have the time and fuel, wait until you have seen an aircraft land or take off to provide the most reliable clues. Finally, there is no substitute for looking out whether you are the pilot with the problem or listening on the RT to someone else’s problem; a pilot with a problem may make mistakes so always expect the unexpected!

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