

# **CHIRP GA FEEDBACK**

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## **EDITORIAL**

An incident was reported to CHIRP in which, shortly after take-off the flight crew declared an emergency because their compasses were reading erroneously. A technical investigation could find no fault with the aircraft but it emerged that the aircraft had been held on the runway for some time prior to its IFR departure. The runway in question (Hawarden) is reinforced with steel and the relevant AIP entry warns pilots of the possibility of compass deviation on stationary aircraft. The warning is repeated in proprietary flight guides but space for warnings there is frequently limited. There are similar risks at other airfields. Consideration could be given at many of these places to repeating relevant warnings on the ICAO Aerodrome charts and, if appropriate, by installing warning boards near to runway holding points. However, if you are unfamiliar with an airfield it is sensible to read the full AIP entry for any airfield you plan to visit or operate from. Furthermore, pilots should routinely check their compasses and heading references against the runway heading when lining up for take-off and, if held, immediately prior to brake release.

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Ian Dugmore – Chief Executive

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### **COMMENT RECEIVED ON GA FEEDBACK 67: ALTITUDE DEVIATION**

May I draw your attention to a common misconception in 'Altitude Deviation' in the recent edition of CHIRP? The reporter talks about setting altimeters to 1013 as they pass the transition altitude, which is commonly believed to be correct but is not and for a very good reason.

A pilot is permitted to set 1013 as soon as they've been assigned a flight level and I would encourage this, although to do so on the ground prior to take-off is perhaps unwise if this gives a negative figure on the altimeter, for obvious reasons. The transition altitude is defined as the altitude below which altitude should be referred to with reference to the QNH and above which with reference to 1013. It is NOT the altitude at which you change from one to the other.

I've been an IRE for many years and one of the very common fail points I've doled out is when the QNH is low and a pilot changes from QNH to 1013 at the transition altitude but has been cleared to a low flight level, not for the action itself, which I usually retain as a strongly-worded debrief item rather than a failure point in itself, but for the effect it can produce. At [ ], for example, it's common to be assigned FL40, so in winter when the QNH is 980 or below (as happens quite regularly) there is 1000 ft. between the QNH and 1013, so a pilot who leaves it until the transition altitude (3000 ft. at [ ]) before setting 1013 will overshoot their assigned level because FL40 is the same as 3000 ft. with a QNH of 980 hPa.

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The CHIRP comment referring to CAP 789 para 5.1.3 alludes to this but it would be helpful if the reasoning were to be stated too, as all too few pilots are aware of this potential problem.

**CHIRP Comment:** A change to the Manual of Air Traffic Services CAP 493 MATS Part 1 will be effective from 25 May 2017. This will ensure that the transition level is located at least 300 m (1,000 ft.) above the transition altitude to permit the transition altitude and the transition level to be used concurrently in cruising flight, with vertical separation ensured. [SI 2016/01](#) to CAP 493 and to CAP 797 Flight Information Service Officer Manual provides the details.

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### **COMMENT RECEIVED ON GA FEEDBACK 69: TAXIWAY INCIDENT**

There is not enough detail to be absolutely sure but the recent GA report of severe prop damage in a taxiing incident with subsequent prop replacement implies that running the engine at full power and finding no vibration meant the engine remained serviceable. I think this is incorrect. A full strip down and sudden stoppage inspection in an approved facility is required to return the aircraft to an airworthy state.

**CHIRP Comment:** Agreed.

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### **VEHICLE ENTERING RUNWAY – GROUND MOVEMENTS AWARENESS**

**Report Text:** The airfield has a grass runway on private land (a farm estate) with a centre portion paved/concrete. It is home to a number of non-aviation clubs. This runway section is crossed by users of the airfield in vehicles in order to reach the hangars. A prominent warning sign warns drivers to look to both sides for aircraft.

I was landing and was aware of a 4x4 vehicle moving on the airfield. Within 3 to 5 seconds of this initial sighting I was touching down on the NE runway when the vehicle without stopping drove (from the left) onto the runway paved area and started an unhurried U turn in a clockwise direction. The only course of action I had was to use heavier than usual braking - however the aircraft was not going to slow down like a car might with emergency braking on the cut grass. I steered to the left whilst the vehicle driver completed the U turn and noticed me in time to accelerate off the paved area. Had he not accelerated off we would either have collided or at best I'd have had to aim off runway. Attempting a go around once I had touched down was out of the question.

The driver high tailed it down the roadway to leave the farm property - I had turned the aircraft around hoping to make a note of the Registration number though this was not possible. I asked around but no-one was able to identify the vehicle or its driver. The driver clearly realised the seriousness of his careless action and rather than stop and apologise has demonstrated a reckless disregard for safety. Never have I been so in fear of my life.

The [ ] VFR Flight Guide does contain a warning for visiting pilots that uncontrolled movements of vehicles near the runway are to be watched out for.

Lessons Learned - I have flown from this airfield for just over 20 years, so well acquainted with activities typical of many farms needing to diversify. Awareness during take-off is perhaps more obvious, and likewise when in the circuit planning to land. However during the final phase of a landing, when flaring, one's attention is very much on the task in hand. Never before had I considered a drill for such an eventuality - and is probably one that needs to be shared with new members operating at our airfield.

**CHIRP Comment:** The reporter has highlighted the need for extraordinary vigilance to guard against traffic/people/animals on unlicensed runways at mixed use airfields. It is essential that all users of such airfields and airfield operators meet regularly to review and agree appropriate procedures, signage and barriers to minimise the hazards. As a runway incursion, this incident involving an EASA certificated aircraft (e.g. Cessna, Piper etc) is a reportable event ([by Mandatory Occurrence Report](#)) for licensed and unlicensed airfields. (Had the reporter been flying an Annex II aircraft the incident would have warranted a voluntary report).

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## **INADVERTENT PENETRATION OF EGD206 (CARDINGTON)**

**Report Text:** This incident relates to inadvertent penetration of EGD206. I was flying VFR from [ ] to [ ] on a VFR solo. It was my fourth flight of the day and, in retrospect, I was probably a little tired, albeit I felt fine at the time. I set off in conditions that were a little hazy but otherwise smooth VMC. However, there were thunderstorms forecast further south which I anticipated I might need to route around (depending on where exactly they were and when they came).

The first part of the flight, during which I was receiving a Traffic Service from [ ], was unremarkable. Around 10 miles north of Bedford I terminated the Traffic Service and maintained a listening watch with Luton (129.55). I did not squawk the Luton conspicuity code. Shortly thereafter, I commenced descent to 1900', as the plan was to seek a transit north to south across Luton Zone (something I had done in reverse earlier the same day).

It soon became obvious that I was not going to get a transit across Luton Zone, as the Luton controllers were extremely busy dealing with multiple weather deviations – it was evident that multiple thunderstorm cells were interfering with their arrival/approach. My plan B had been to route the VFR passage between BKY and BPK in the absence of a transit clearance. However both on-board satellite weather and the colour of the sky in that direction told me that that routing was blocked by weather (a constellation of cells). I therefore decided spontaneously to turn to the West and route round the zone, as the weather looked to be clear to the West.

I turned and pointed towards the Northwest corner of the Zone (still maintaining a listening watch on the Luton frequency), choice of heading being driven directly by a desire to ensure that I did not infringe Luton's controlled airspace. What I completely failed to notice was that the path from my present position to my aiming point took me right through the centre of danger area EGD206, which I proceeded to fly right through.

Shortly after flying through the danger area it became apparent that the area of weather was more extensive than I had anticipated and I would need a more extensive deviation. At that stage I also realised that I was becoming overloaded and that the judicious course was to divert to [ ], which I duly did. It was when reviewing my GPS track on the ground that I realised with horror where I had flown. Whether the met balloon was inactive or whether I was simply lucky enough not to fly through its cable I do not know. However I am under no illusion as to how serious this could have been. Hence I considered it appropriate to submit this report.

I do not fully understand how I managed to fly through the danger area without noticing, particularly given that it would have shown up on my MFD and on Sky Demon (on a yoke-mounted iPad). However, I believe it is likely to be attributable to the following combination of factors:

1. This was an unplanned re-routing, and I had not studied the area of the chart where the danger area resides in any detail prior to flight (but for the re-routing it would have been well to the right of track). I thought I was fairly familiar with the area, but I had not remembered that there was a danger area in the vicinity.
2. I was, in retrospect, overloaded and experiencing a degree of stress (albeit not consciously particularly noticeable): my plan A was not going to happen and my plan B was not going to be viable either; the weather ahead was worse than I had anticipated. That, combined with a little tiredness, probably led to reduced cognitive performance.
3. My focus was split between avoiding a controlled airspace bust and observing the weather (both out of the windscreen and on the iPad, on which satellite download radar images were available). That meant that the focus of my navigation was on the position I anticipated being 5-10 minutes ahead, whereas the danger area was more or less immediately in front of me after I turned. Although I cannot recall for sure, I suspect I may also have used "pinch and zoom" on SkyDemon such that when I was working out the direction to turn so as to ensure I did not clip the corner of Luton's airspace, the "own ship" symbol and danger area were off screen.
4. I was flipping between Sky Demon and the weather app on the iPad, so it is possible that Sky Demon was not in front of me when I was about to enter the danger area and therefore did not emit an

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alert. However I am not completely sure about this; it may be that I was focused "eyes out" at the critical moment and too focussed on the weather ahead to notice what my computers were telling me.

5. I usually fly IFR in CAS; flying VFR outside CAS, perhaps my nav thought processes are not as second nature to me as they should be.

As to what I could have done differently (in no particular order):

1. If I had checked a radar image before the flight it would have been obvious that my planned route was not going to work. I would have planned to fly further west and the issue would not have arisen. I was lulled into a false sense of security by the near perfect weather that I had been (until then) experiencing all day.

2. As soon as I realised I would not be able to cross Luton Zone I should have picked up a LARS from Farnborough, as they would likely have stopped me in my tracks. (Workload meant that I did not think to do this). I doubt a listening squawk on Luton would have helped, as they were too busy vectoring weather-avoiding aircraft on their approach to worry about GA outside of their zone.

3. On determining the need to re-route in an ad hoc way during flight, I should have been much more careful to check systematically the entire length of my proposed diversion, not least the airspace immediately in front of me.

4. Given that I was in VMC and could see the weather perfectly well out of the windscreen, I should not have distracted myself with satellite weather. I did not need it. If I had not been looking at that I would have had more spare cognitive capacity and would probably also have had the benefit of a Sky Demon alert.

5. If I had rerouted earlier (or indeed later) I would have avoided the danger area. However I see that not as something that I should have done differently but rather as a question of luck.

6. I have given careful thought to the extent that my use of electronic charting software was a causative factor. Whilst I firmly believe that tools such as Sky Demon provide a far safer, better and more reliable means of navigation than conventional map reading, I cannot deny that it may have been a contributing factor here in that had I been navigating without Sky Demon I suspect I might have spent longer reviewing the planned route and surrounding airspace when on the ground, with the result that I might have been aware of the danger area before I set off.

**CHIRP Comment:** The reporter is commended for his honesty and thorough analysis. We are delighted to print this report with only minor comments to add. If there is a listening squawk published, we would recommend using it whenever listening out on an airfield frequency. We agree completely with the reporter's suggestion that he did not need the satellite weather on his iPad while he was good VMC; when navigating manually off a planned track, aids such as Sky Demon really come into their own and a timely alert from it would likely have saved the day.

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### **PRE-FLIGHT CHECK FAILURE**

**Report Text:** I arrived at the airfield at midday to clean my flexwing microlight and do some local flying. My co-owner was already there having flown in the morning. To clean the wing we decided to "hobble" the aircraft. This involved removing the front strut from the trike (held in place by clevis pins and safety rings) and lowering the wing. We then cleaned the wing and applied sun protection spray. This done, we raised the wing with some little difficulty and I replaced the front strut. My co-owner then departed.

Another flying buddy had arrived and we decided to fly together to a local strip. I quickly pre-flighted the aircraft, started up and performed my pre-take off checks at the hold point. My buddy had already taken off but landed just as I was completing my checks to tell me that our planned route was looking murky, and suggested an alternative. He then took off and I followed shortly afterwards.

As the aircraft took off, I felt the control bar movement was unusual, glanced up and saw that I hadn't replaced the top clevis pin and the strut had now detached from the pylon. I performed an immediate emergency landing, made a lot simpler by having a long WWII concrete runway available straight ahead.

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Lessons Learned - There are a number of lessons I've learned from this rather humbling experience, where there were three opportunities to spot the error before flight.

1 Given that there were two of us cleaning the wing, we should have taken the opportunity to have each other double-check our work to spot errors when we raised the wing.

2 As my co-owner had already performed the daily inspection of the aircraft, I performed a much shorter check in my pre-flight. Subconsciously I was rushing - I specifically remember telling myself to slow down. I should have considered that "hobbling" the aircraft meant the aircraft had been re-rigged and a full daily inspection was needed before flight.

3 I was distracted by my buddy landing as I was completing my pre take-off checks.

4 The pre-take off check mnemonic I use (and I understand still taught in the NPPL (M) flexwing syllabus) is CHIEF TAP [C=Controls, H=Harness, I=Instruments, E= Engine, F=Fuel and T=Trims and Pins, A=All Clear, P=Power]. The problem is the "T" for "Trim and Pins". On my particular aircraft setting take-off trim takes more than 10 seconds using an electric switch. The length of time and the positive action associated with "trim" made it easy to forget "and pins". In future I will separate the two items (CHIEF TPAP?), and I wonder if these checks could be separated more explicitly in the syllabus?

5 I had previously taken off with the trim not set properly, resulting in a particularly exciting take-off and so was particularly focussed on ensuring that trim was set. In future I should ensure that I don't focus on avoiding the last mistake I made.

**CHIRP Comment:** The front strut is a vital structural part of the airframe. There has been a fatality when a front strut connection failed and the aircraft broke up in straight and level flight. The reporter is congratulated for immediately landing straight ahead and so avoiding a serious accident.

The reporter has correctly identified the factors that contributed to this occurrence: lack of an independent check of the rigging, rushing and distraction. Flexwing microlight operators could perhaps learn from the gliding community where distraction during rigging is a recognised problem. To avoid interruptions during rigging, some gliding sites have adopted the wearing of a 'rigging hat' - a recognisable and conspicuous piece of headgear to warn anyone in the vicinity not to interrupt or otherwise distract the wearer because he/she is engaged in rigging an aircraft.

We should not rely on an aircraft remaining as it was during the daily inspection, especially if de-rigging is possible. The pre-flight checks should be constructed and carried out in such a way as to be able to identify any changes. Daily inspections and pre-flight checks should never be rushed; they should always be done thoroughly. The NPPL syllabus does not contain any suggested or required check sequences. The BMAA Instructor and Examiner Guide does suggest some check lists but it is up to each instructor to pass on checks that they feel are suitable for the aircraft type and circumstances.

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### **RADAR VECTORS TO APPROACH WITHOUT GLIDEPATH INFORMATION**

**Report Text:** The ILS glideslope was unserviceable, as it had been the previous day.

The controller was clear that it was vectors to LOC/DME approach. I was vectored on to localiser at 2000ft then handed off to [ ] Approach. The Approach Plate indicated a descent at 4 DME, but at 4.7 DME conditions were VMC and I could see the PAPIs showing 2 white and 2 red.

Momentary confusion, but then I realised that I was 200' above platform [initial approach altitude], so started descent 0.6 DME early and all was fine. However, in IMC I would not have had the cue of the PAPIs. My first warning would have been 200ft high at 3 DME, requiring a rate of descent of 1000fpm reduced to 600fpm at 2 DME with a decision at about 1 DME, so far from a stabilised approach.

I am not blaming the extremely helpful controller, but I think that this underlines that controllers of ILS airfields may not get the practice of 2D (lateral guidance only)/Non-Precision Approaches (NPA).

I mentioned this on an online IFR forum and someone related exactly the same having happened to him recently at [a different airfield], so this is not a one-off or localised.

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Lessons Learned: ATCOs maybe need to be reminded, when the glideslope is unserviceable, of the importance of platform altitude on a NPA. Pilots may need to pay more attention to ensuring that they have been descended to platform, and requesting it otherwise.

**CHIRP Comment:** The Air Navigation Service Provider was grateful for the report which drew attention to some inconsistencies among controllers. Aircraft should be descended to the published platform so that the pilot can commence descent at the pre-briefed distance out from the airfield. The reporter is correct in reminding controllers and pilots of the importance of ensuring that the final approach commences from the correct initial approach altitude – neither above nor below.

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### **Contact Us**

**Ian Dugmore - Chief Executive**

Flight Crew, ATC & GA Reports

**Dave Tattersall - Deputy Director (Engineering)**

Maintenance & Engineer Reports

**CHIRP, Centaur House, Ancells Business Park, Ancells Road, FLEET, GU51 2UJ**

**Freephone (UK only):** 0800 772 3243 or **Telephone:** +44 (0) 1252 378947

**E-mail:** [mail@chirp.co.uk](mailto:mail@chirp.co.uk)

Registered in England No: 3253764

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