

**AIRPROX REPORT No 2014191****Date/Time:** 12 Sep 2014 1315Z**Position:** 5220N 00022W  
(5nm N Grafham Water)**Airspace:** Lon FIR (Class: G)**Aircraft 1** **Aircraft 2****Type:** PA31 PA28**Operator:** Civ Comm Civ Pte**Alt/FL:** 3500ft 2700ft

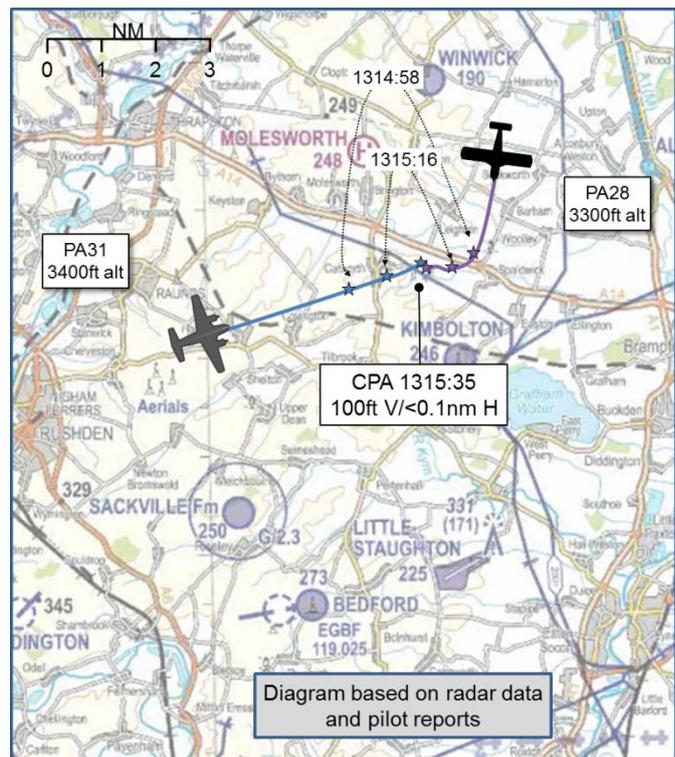
QNH QNH 1024 hPa

**Conditions:** VMC VMC**Visibility:** 10km 20km**Reported Separation:**

50ft V/100m H 100ftV/200ft H

**Recorded Separation:**

100ft V/&lt;0.1nm H

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

**THE PA31 PILOT** reports flying a white and blue aircraft with wing-tip and rear HISLs illuminated. His transponder was selected on with Modes 3A, C and S; the aircraft was not fitted with ACAS. He was tasked with an aerial survey in the vicinity of Sutton, just north of Wyton. The crew consisted of two pilots (to comply with company policy which requires an extra pilot for look-out), and a rear camera operator. They completed their calibration run over Sywell airfield and were receiving a Basic Service from Sywell Information. They then departed towards Sutton to conduct some data gathering and, as they did so, called Cambridge approach to request a Traffic Service; however, Cambridge were non-radar and could only offer a Basic Service. As they passed 5nm north of Grafham water, the PM<sup>1</sup> suddenly saw an aircraft right and slightly low within 0.5nm and 50ft. He called out the traffic, but assessed that he did not have enough time to allow the PF to see it, and there was a very real risk of collision, so he took control and rolled left and up. He elected to go left as the other aircraft was slightly right of them so to go right would have worsened the situation. The opposing traffic saw them at about the same time, he thought, and initially rolled right towards them, but quickly reversed the turn to go left and pass down their right-hand-side. The avoiding action gave them a "more comfortable" distance between the two aircraft. There was no Traffic Information from Cambridge because they were on a Basic Service; they then tried to call Lakenheath for a radar service, but they were unable to raise them for another 10 miles. Although Lakenheath provided a good service for most of the sortie, they had to terminate the service in the Wyton area due to radar coverage. The pilot noted that this highlighted the lack of reliable radar in the vicinity of Sywell, with Cranfield, Coventry and Cambridge only operating with radar a certain times. Had they been operating with only one pilot he thought it unlikely he would have seen the conflicting traffic due to its relative position.

He assessed the risk of collision as 'Medium'.

**THE PA28 PILOT** reports flying a red and white aircraft with strobe lights illuminated and transponder selected on with Modes 3A, C and S; the aircraft was not fitted with ACAS. The pilot reports receiving a Basic Service from Cranfield and commencing a descent from 3500ft to 2500ft. Having turned at Grafham Water from a heading of 180° onto a heading of 270°, she noticed a twin engine

<sup>1</sup> Pilot Monitoring

aircraft quite some distance away, heading towards and about 400-500ft higher. The other aircraft was to the left of the nose, and would cross the bows at an almost opposite heading to pass across and to the right of her aircraft, it also seemed to be descending slowly. Initially she wobbled her wings for conspicuity and friendliness, but there was no response so, after a few seconds, she decided not to take any chances and turned away in a descending left turn to allow the other aircraft to continue undisturbed.

She assessed the risk of collision as 'Low'.

## Factual Background

The weather at Cambridge was reported as:

METAR EGSC 121250Z 06005KT 020V160 9999 SCT035 SCT046 20/11 Q1025

## Analysis and Investigation

### CAA ATSI

CAA ATSI had access to the Cambridge Approach RTF, area radar recording and the written reports from both pilots. The PA31 initially reported an incorrect date for the occurrence as 12 August 2014 (it was actually 12 September 2014) and the PA28 pilot's report was received after 30 days. There was therefore a delay in obtaining the RTF; the Cranfield RTF recordings were not available.

At 1314:20 the PA31 was 25nm west-northwest of Cambridge Airport tracking east, indicating FL033 (A3600ft converts to 3624ft using the Cambridge QNH 1025 with 1hPa equal to 27ft). The PA28 was 5.5nm northeast of the PA31 indicating FL035 (A3800ft) on a converging heading. At 1314:52, when the PA31 first contacted Cambridge Approach, the horizontal distance between the two aircraft was 2.9nm and the vertical distance was 300ft – Figure 1.

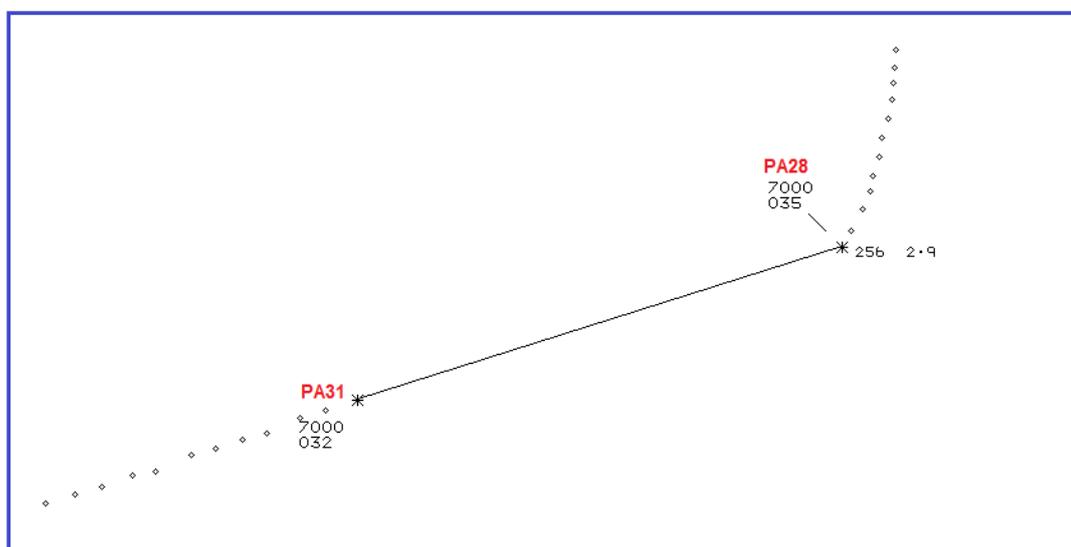


Figure 1 – Swanwick MRT at 1314:52

The PA31 pilot reported at 3600ft on QNH 1024 and requested a Traffic Service. The Cambridge controller reported that radar was not available and agreed a Basic Service passing the Cambridge QNH 1025. The RTF exchange ended at 1315:32 when the horizontal distance between the two aircraft was 0.2nm with the PA28 indicating 100ft below the PA31. The PA28 was shown in a right turn - Figure 2.

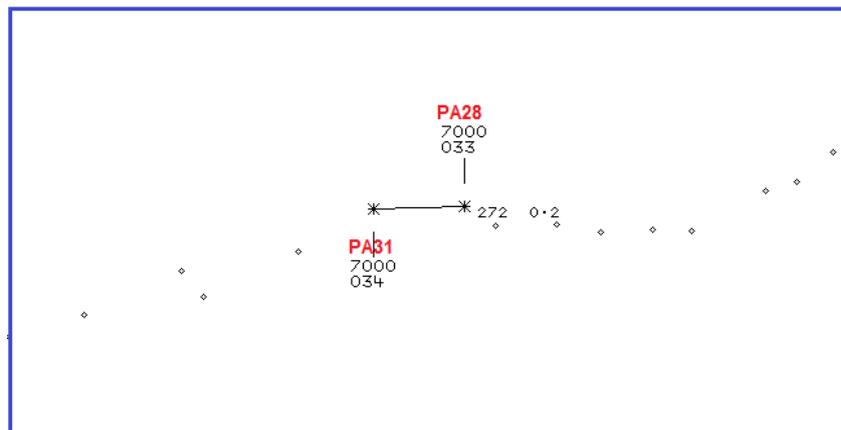


Figure 2 – Swanwick MRT at 1315:32

CPA occurred before the next radar update. On the next radar update at 1315:36 the two aircraft had passed abeam with the PA31 indicating 100ft above the PA28. The PA28 is shown to have made a left turn – Figure 3.

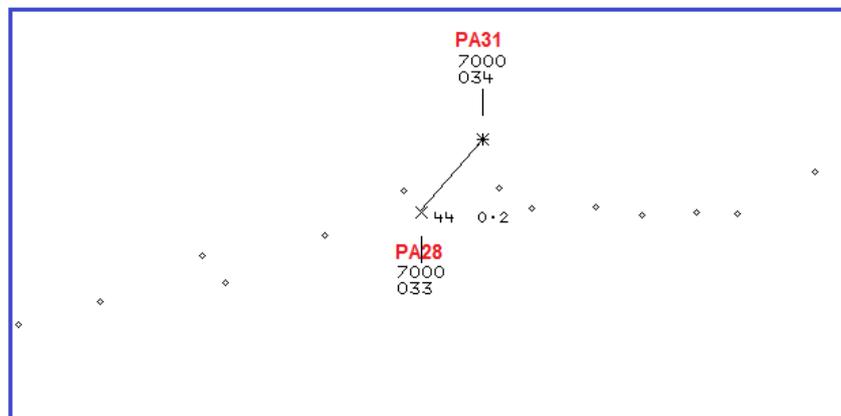


Figure 3 – Swanwick MRT at 1315:36

At 1334:32 the PA31 pilot reported going en-route. No mention was made of the Airprox to Cambridge Approach. The Cambridge Approach controller was not aware of the PA28 and would not have been able to provide Traffic Information or a warning. Cranfield do not provide a radar service and it is unlikely that the Cranfield controller would have been aware of the position of the either aircraft.

### UKAB Secretariat

Both pilots shared an equal responsibility for collision avoidance and for not flying into such proximity as to create a danger of collision<sup>2</sup>. If geometry of the two aircraft is considered to be head on, then both pilots were nominally required to turn to the right; notwithstanding, the PA31 pilot noted the actual proximity placed the PA28 slightly to his right and therefore he correctly elected to turn left to avoid passing across its nose at short range.

### Comments

#### PA31 Company Head of Safety

This report highlights an already identified company “Top Risk”, the company is actively seeking a technological aid to assist in visual lookout. In the meantime, we are mitigating the risk by increasing the number of eyes looking out of the cockpit by mandating a safety pilot (for high risk tasks) and taking a radar service when available.

<sup>2</sup> Rules of the Air 2007 (as amended), Rule 8 (Avoiding aerial collisions).

## Summary

An Airprox was reported on 12<sup>th</sup> September at 1310z between a PA31 at 3500ft and a PA28 descending from 3500ft to 2500ft. The PA31 was receiving a Basic Service from Cambridge and the PA28 a Basic Service from Cranfield; neither ATCU were using radar and so neither pilot received any Traffic Information. Both pilots saw the other aircraft and took avoiding action: the recorded separation was 100ft and less than 0.1nm.

## **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available consisted of reports from the pilots of both aircraft, radar photographs/video recordings, and reports from the appropriate ATC and operating authorities.

The Board first looked at the actions of the PA31 crew. See-and-avoid remain the main barrier to preventing a collision in Class G airspace and they were heartened to hear that the PA31 Company had mitigated the risk of collision by providing an extra pilot in the cockpit. Nevertheless, the Board wondered whether both pilots may have become involved in the calibration of the equipment prior to their survey, and reiterated that it was important for the crews of aircraft conducting aerial tasks to ensure that these were not done to the detriment of look-out: the PA28 was there to be seen, and had turned across their nose approximately co-altitude some distance away. The Board noted the pilot's comment about a lack of a radar ATS in the area, and applauded the company's attempts to seek other solutions. Having spotted the other aircraft, the PM made a quick decision to take control and elected to turn left, rather than right (as would normally be expected for a head-on encounter); the Board judged that the geometry of the two aircraft justified this and that his actions were effective.

Turning to the actions of the PA28, the Board noted that she reported seeing the PA31 "some distance" away, but thought that this was probably after she had turned onto west. Having seen the other aircraft she first waggled her wings for conspicuity, but then appeared to have continued towards the PA31. The Board commented that, whilst she may have believed she had right-of-way, (the geometry was that the PA31 was slightly converging from her left across her nose) she may have been wiser to have taken action immediately rather than rely on another pilot to resolve the conflict. That being said, the Board commended her for initially waggling her wings, since it was likely that this had been what had prompted the PA31 pilot to see her in the first instance. In the end, the PA28 pilot also took avoiding action by turning to the left, and the Board noted that she assessed the risk of collision low.

In determining the cause of the Airprox, the Board quickly agreed that because the PA28 pilot had seen the PA31 some distance away, this incident was best described as a conflict in Class G that had been resolved by both pilots. Notwithstanding, although both pilots took avoiding action, the radar separation indicated 100ft and less than 0.1nm; therefore, the Board assessed that safety margins had been much reduced and assessed the risk as Category B.

## **PART C: ASSESSMENT OF CAUSE AND RISK**

Cause: A conflict in Class G resolved by both pilots.

Degree of Risk: B.

ERC Score<sup>3</sup>: 20.

<sup>3</sup> Although the Event Risk Classification (ERC) trial had been formally terminated for future development at the time of the Board, for data continuity and consistency purposes, Director UKAB and the UKAB Secretariat provided a shadow assessment of ERC.