

**AIRPROX REPORT No 2014210**Date/Time: 30 Oct 2014 1208ZPosition: 5225N 00123W  
(5 NE Coventry)Airspace: Lon FIR (Class: G)Aircraft 1 Aircraft 2Type: A109 PA28Operator: Civ Trg Civ PteAlt/FL: 1700ft 2500ft  
QNH (1017hPa) NKConditions: VMC VMCVisibility: 8km 10kmReported Separation:

0ft V/100m H NK V/1nm H

Recorded Separation:

NK V/0.2nm H

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

**THE A109 PILOT** reports flying a yellow aircraft with the SSR on and with Modes 3A and C selected. The aircraft was fitted with a TAS. He was on an IFR training flight inbound to Coventry on an NDB approach at 1700ft; it was the first NDB sortie for the student and, consequently, the student had a high work-load. He became aware of an RT exchange between Coventry ATC and an aircraft claiming to be near Kenilworth. Coventry identified the aircraft as in fact being near to Walsgrave hospital and instructed its pilot to turn left away from the final approach track. The instructor increased his traffic scan and saw an aircraft in his half of the windshield, not obscured by the IFR training screen, approximately 300m ahead, on a possible collision course, and at the same altitude. He immediately took control of the aircraft from the student and took avoiding action by making a rapid 30° angle of bank turn to the left. Once clear he turned back onto the NDB approach. He did not receive a TAS warning.

He assessed the risk of collision as 'High'.

**THE PA28 PILOT** reports flying a grey aircraft with all lights illuminated and transponder on with Mode 3A selected. The aircraft was not fitted with a TAS. She reported flying at approximately 2500ft when she established contact with Coventry ATC and requested a Traffic Service and radar monitoring. She was asked to change to another Coventry frequency but couldn't establish communication on that frequency so, on returning to the previous frequency, the controller told her to remain on that one and alerted her to a yellow A109 in the vicinity. She saw the aircraft in her 2 o'clock approximately 1 or 2nm away. She reported visual with the aircraft as it flew past her. At no point did she consider this to be a safety issue.

She assessed the risk of collision as 'None'.

**THE COVENTRY APS CONTROLLER** reports that he took over the control position with the A109 on a training NDB approach. He could see two 7000 squawks, one of which was routing towards Coventry. The A109 reported base turn complete and was instructed to continue the descent in accordance with the procedure. The 7000 squawk was seen tracking NE on track to route NW of the Coventry ATZ, but with no Mode C readout. The radar assistant took a telephone call from the Birmingham Approach controller and was passed details on a PA28 routing through the Coventry area, just west of Coventry at the time and believed to be the 7000 squawk that the APS controller

had been watching. Birmingham ATC was asked to send the aircraft to the Coventry ADC frequency. The Coventry APS then passed the PA28's details to the ADC and, at about the same time, it was noticed that the aircraft had turned further east and was now within the ATZ. The ADC stated that he could see the aircraft, that it wouldn't be a problem, and then confirmed that the pilot had called him. At this time the A109 was 8 or 9nm north, on a SW heading. The controller then observed the 7000 squawk tracking NE towards the ATZ boundary and north of the RW23 approach lane. He listened in on the tower frequency to confirm the pilot was indeed in contact with the ADC and, with the anticipated track of the transit aircraft on a northerly direction, at 7nm he transferred the A109 to the tower frequency. He then observed the transit aircraft take up a more ENE heading towards the A109, he selected the intercom to talk to the ADC about the situation and heard the ADC instruct the PA28 to turn left and informing the pilot about the A109. The PA28 pilot acknowledged, but then appeared to turn right, not left, at the same time the A109 appeared to take a slight turn to the right which put the two aircraft in close conflict. The A109 pilot was heard over the RT in open transmit to take control of the aircraft and take avoiding action, he also reported an Airprox. Subsequently the PA28 was transferred to the Approach frequency and it transpired she was lost and required assistance with a position fix. She was identified using SSR and given her position, but although very calm, still seemed unable to assimilate her position. She was then given vectors towards Leicester and eventually transferred to East Midlands.

## **Factual Background**

The weather at Coventry was reported as :

METAR EGBE 301150Z 19010KT 160V220 9000 FEW009 SCT014 18/16 Q1017

## **Analysis and Investigation**

### **CAA ATSI**

The CAA ATSI had access to Coventry RTF, area radar recording and the written reports from both pilots and both controllers.

The A109 was operating an IFR training flight and was conducting an NDB instrument approach for Coventry RW23 and at the time of the Airprox was in receipt of an Aerodrome Control Service. The PA28 was on a VFR flight and was in receipt of an Aerodrome Control Service from Coventry Tower, both aircraft were on frequency 118.175MHz.

The ATSU was providing a combined ADC/APP on frequency 123.825MHz with Radar on request on frequency 136.150MHz. Just prior to the Airprox the controllers were preparing to split ADC onto frequency 118.175MHz. The Radar controller was preparing to take control of the Approach frequency on 123.825MHz.

The A109 was initially in receipt of a Traffic Service from Coventry Radar and was established in the instrument pattern for an NDB approach to RW23. At 1203:04 the A109 was at 2300ft in the base turn and 11.7nm from touchdown. The PA28 was shown 6.2nm southwest of Coventry without Mode C altitude reporting.

At 1205:24 the PA28 was approaching the south-western boundary of the Coventry ATZ and the Radar controller's written report indicated that after Birmingham had passed them details of the PA28 they were asked to transfer the PA28 direct to Coventry Tower. The Radar controller observed that the PA28 had turned further east and was believed to be entering the ATZ. At 1205:50 the PA28 contacted the combined Coventry ADC/APP on frequency 123.825MHz and was instructed to standby. At this point the PA28 was passing 1nm west of the airfield and the Tower controller's written report indicated that he had sighted the PA28, inside the ATZ, as it approached the downwind right hand position for RW23.

At 1206:50 the A109 was on final approach at a range of 6.4nm and the PA28 was tracking northeast positioned 1.3nm northeast of the airfield – Figure 1.

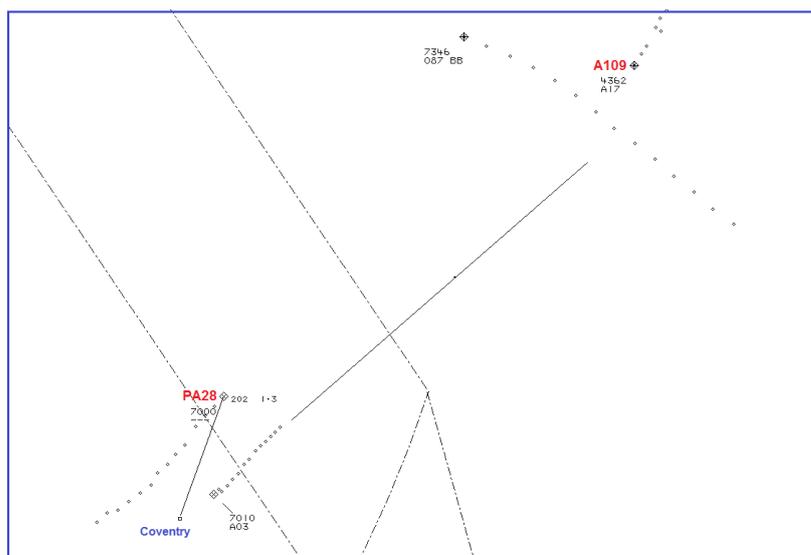


Figure 1 – Swanwick MRT at 1206:50

The controller responded to the PA28 *“(PA28)c/s if you could call me on one one eight decimal one seven five.”*

By 1207:11 the PA28 was leaving the lateral boundary of the Coventry ATZ. The distance between the two aircraft was 4.1nm – Figure 2.

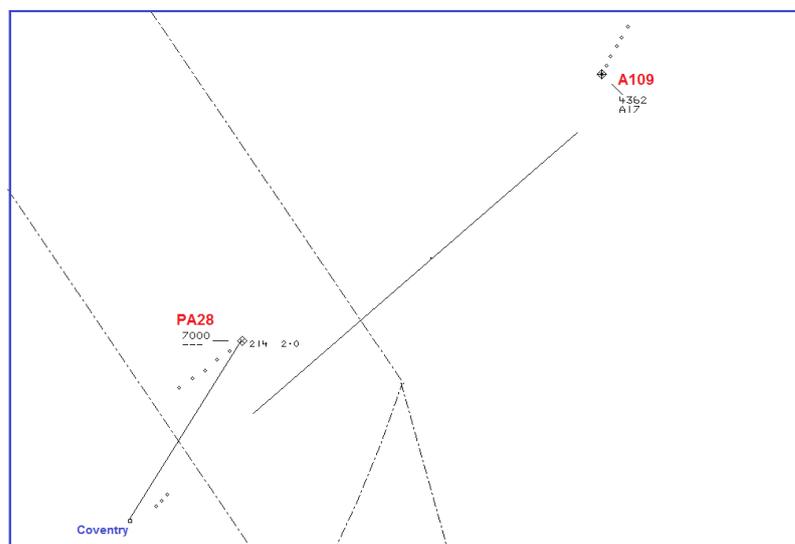


Figure 2 – Swanwick MRT at 1207:11

At this point the A109 was transferred to the Tower frequency and the PA28 contacted Coventry Tower and the following RTF exchange occurred:

PA28 *“Coventry Approach (PA28) c/s request Basic Service”*

ATC *“(PA28) c/s this is er Coventry Tower just confirm your position at the moment”*

PA28 *“(PA28) c/s is believed to be abeam Kenilworth erm request a steer to Coventry”*

[Note: Kenilworth is 3.5nm southwest of Coventry Airport]

ATC *“(PA28)c/s I believe you’re just to the north of our final approach [1207:40] just approaching Walsgrave hospital can you make a left turn from your current position there is er traffic and Agusta one oh nine on the final approach for runway two three”*

At 1207:40 the horizontal distance between the two aircraft was 2.5nm – Figure 3.

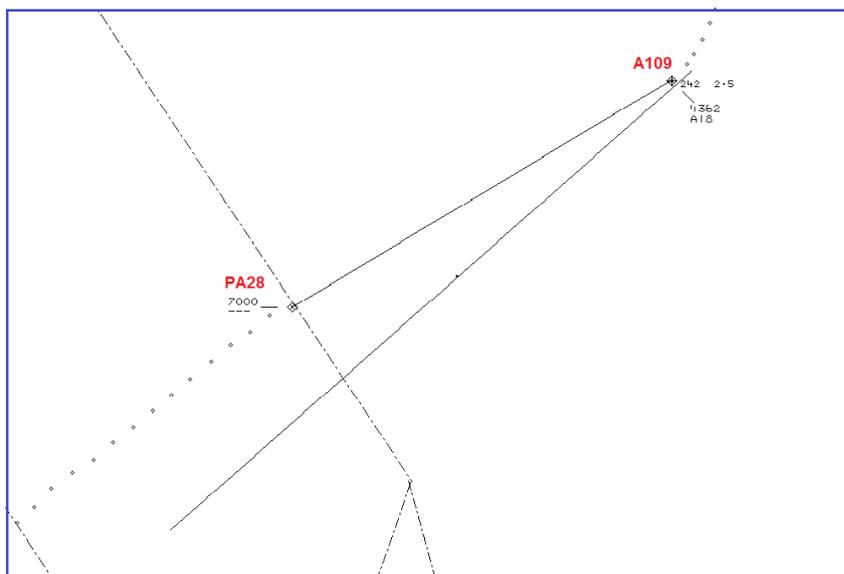


Figure 3 – Swanwick MRT at 1207:40

At 1207:50 the PA28 pilot reported “Turning left (PA28)c/s”. At 1208:04 radar showed that the PA28 was converging with the runway centreline and also showed that the A109, on the NDB approach, was drifting to the right of centreline (surface wind 190/10kts). The distance between the two aircraft was 1.1nm - Figure 4.

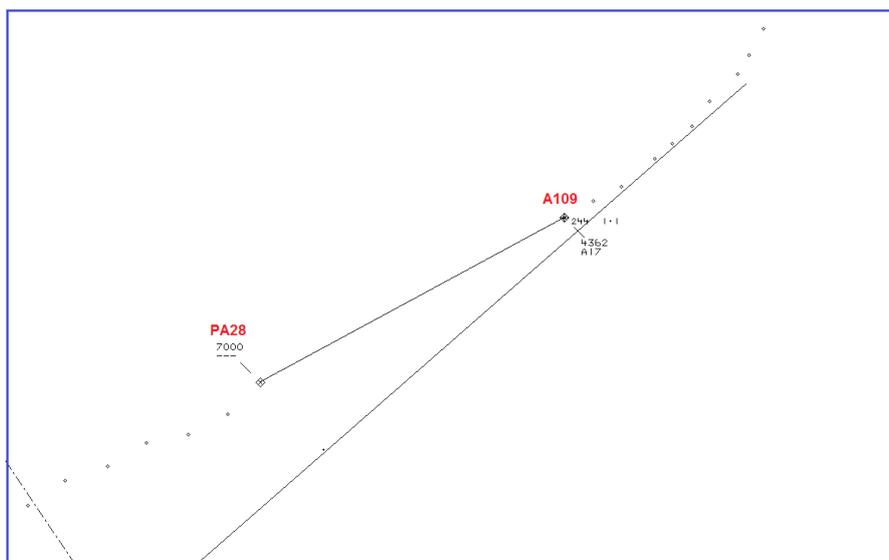


Figure 4 – Swanwick MRT at 1208:04

At this point the A109 pilot transmitted:

A109 [1208:04] “Er (A109) c/s is with you four mile final NDB two three [1208:10] - I have control and I’d like to????? An AIRPROX with that traffic you just gave er a left turn to [1208:19] okay you have control.”

The transmission above indicated that the A109 pilot likely sighted the PA28 at 1208:10. At 1208:19 the distance between the two aircraft was 0.2nm – Figure 5.

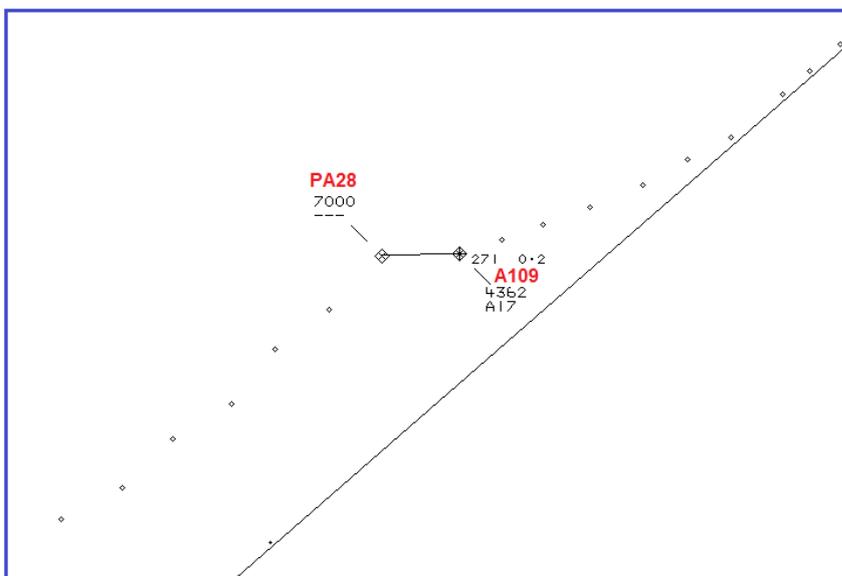


Figure 5 – Swanwick MRT at 1208:19

CPA occurred between radar updates at 1208:21 at an estimated distance of 0.1nm (185m) The A109 pilot indicated that the PA28 was at the same altitude of 1700ft. On the next radar update at 1208:23 the two aircraft had passed abeam with the A109 shown commencing a left turn – Figure 6.

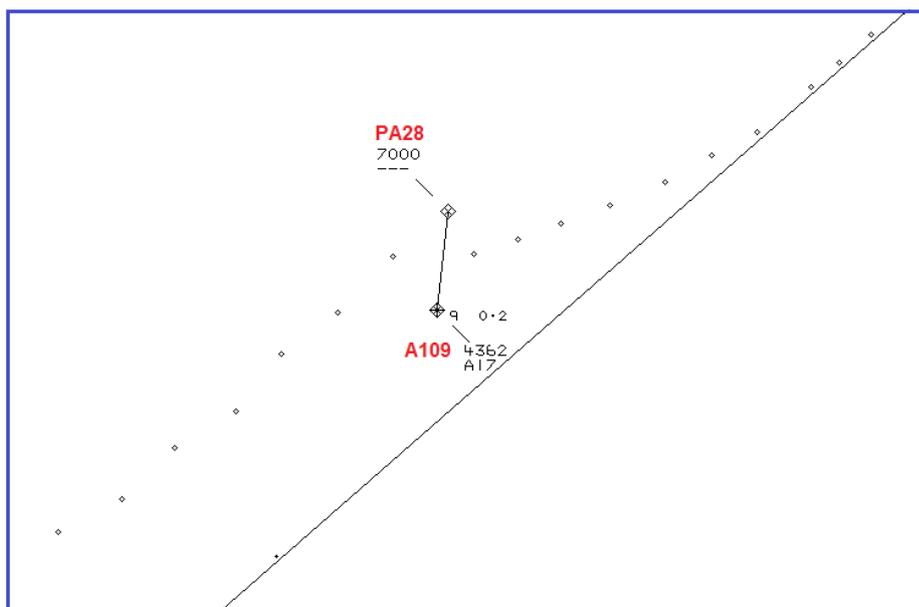


Figure 6 – Swanwick MRT at 1208:23

- A109 [1208:30] "Coventry (A109) c/s????? to land er ?????? on the transmission did you copy my last"
- ATC "Er (A109)c/s affirm er Coventry Tower er continue approach runway two three"
- A109 "Continue approach runway two three and acknowledge the Airprox"
- ATC "(A109)c/s er affirm"

The PA28 requested a steer to Nottingham and at 1210:28 the Tower controller instructed the PA28 pilot to contact Coventry radar on 136.150MHz. The PA28 contacted Coventry Radar and reported at an altitude of 2200ft on QNH1016.

The Radar controller reported that it became apparent that the PA28 pilot was lost and required assistance. The PA28 pilot's written report indicated that ATC had alerted the pilot to the helicopter in the vicinity which the PA28 pilot sighted in the 2 o'clock position at a distance of between 1nm and 2nm. The ATSU have taken appropriate action to highlight lessons learned from the occurrence.

The PA28 pilot's initial call to Coventry on frequency 123.825MHz occurred after the PA28 was believed to have entered the Coventry ATZ. The PA28 pilot was asked to standby as the Tower and Radar controller were in the process of agreeing to split the frequencies, with the transfer of aerodrome traffic to the Tower frequency. The Tower controller then sighted the PA28 as it routed through the circuit pattern and instructed the PA28 pilot to change to the Tower frequency 118.175MHz.

The Tower controller would not have known that the PA28 was unsure of position or may have been in difficulty. It was not clear if the PA28 pilot was aware of, or had sighted the airfield at this point. The opportunity to establish the flight details of the PA28, or to determine if the PA28 was in difficulty at that point was missed due to the resulting delay caused by transferring the PA28 pilot from one frequency to another.

The PA28 had already departed the lateral boundary of the ATZ when the pilot called again on the Tower frequency and reported overhead Kenilworth which is situated 3.5nm south-west of Coventry Airport. The Tower controller believed that the PA28 was in potential conflict with the inbound A109 and instructed the PA28 to make a left turn, which the pilot acknowledged. The PA28 pilot sighted the A109 and continued straight ahead. The A109 on the NDB approach had drifted slightly north of the centreline which reduced the lateral distance between the two aircraft.

It subsequently became apparent that the PA28 pilot was lost and disorientated. In these circumstances, the Tower controller's belief and advice regarding the PA28 being north of final approach and in the vicinity of Walsgrave Hospital, was likely not fully understood by the PA28 pilot.

The Airprox occurred when the PA28 pilot was unsure of position and became disorientated resulting in the PA28 probably routeing through the Coventry ATZ and into conflict with the A109 which was inbound on the NDB instrument procedure. The Airprox occurred in Class G airspace where pilots are ultimately responsible for their own collision avoidance. The Tower controller became aware of the potential conflict and instructed the PA28 pilot to make a left turn to avoid the A109 on which the Tower controller passed Traffic Information.

## **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>1</sup>. When flying through an ATZ pilots are to obtain permission of ATC to enable the flight to be conducted safely within the zone and are to call on entering and leaving the zone<sup>2</sup>.

## **Summary**

An Airprox was reported on 30<sup>th</sup> October 2014 at 1205 between a A109 and a PA28. The A109 was on an NDB approach to Coventry and the PA28 was possibly transiting through the ATZ, both aircraft were on the Coventry Tower frequency. The CPA occurs between radar updates and it is calculated that the separation between the two aircraft was likely to have been 0.1nm, but because the PA28 did not have SSR Mode C the vertical separation is not definitively known.

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<sup>1</sup> Rules of the Air 2007 (as amended), Rule 8 (Avoiding aerial collisions).

<sup>2</sup> Ibid. Rule 45 (Flights within aerodrome traffic zones).

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

Information available consisted of reports from the pilots of both aircraft, transcripts of the relevant RT frequencies, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

The Board first looked at the actions of the PA28 pilot. It was clear that she was uncertain of her position and the Board noted that had she articulated this to ATC they might have been able to help her earlier and avoid the subsequent Airprox. However, it was also accepted that she may not have known that she was off-course until a later stage. The Board couldn't reconcile the difference between the pilot's reported height and the A109 pilot's assessment of the PA28 being at the same altitude, and thought it likely that the PA28 pilot had unintentionally drifted lower than anticipated. This was backed up by the Tower controller's visual sighting of the PA28 from the window. The Board also noted that the Mode C of the PA28 was not showing on radar, whether this was through unserviceability or through inadvertently switching it off wasn't known, but they wished to highlight to all pilots that Mode C gives ATC vital height information and is also necessary for TCAS to work effectively, both of which are important barriers to mid-air collision.

The pilot of the A109 was commended by the Board for his actions, both in hearing and assimilating the position of the PA28 from the RT, and his subsequent avoiding action. It was clear from the RT transcript that it was a late sighting requiring immediate action; it was likely that his actions had averted a more serious incident.

The Board then turned to the actions of ATC. It was deemed unfortunate that the early opportunity to get the full situation from the PA28 had been lost when the Tower Controller tried to continue with the splitting of the control positions and frequencies; the subsequent change of frequency for the PA28 pilot proved to be troublesome and it took in the region of 2 minutes to re-establish full two-way communication, vital time lost in the circumstances. As for the APS controller, the Board noted that, although the routing of the PA28 wasn't fully known when he transferred the A109 to Tower, it had already flown an erratic route and, had he given Traffic Information, the A109 pilot may have been usefully forewarned about the PA28.

When determining the cause of the Airprox, the Board quickly agreed that the PA28 pilot had flown into conflict with the A109. There were two contributory factors: firstly, that the PA28 pilot was uncertain of her position; and, secondly, that the Coventry Radar controller did not pass Traffic Information to the A109 pilot. In assessing the risk, discussion centred on the effectiveness of the avoiding action of the A109 pilot as to whether this should be classified as Category A or B. In the end, the Board agreed that his actions had been sufficient to make a difference to the separation and that therefore this was a Category B where safety standards had been much reduced below the normal.

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

Cause: The PA28 pilot flew into conflict with the A109.

Contributory Factor(s): 1. The PA28 pilot was uncertain of position.  
2. The Coventry Radar Controller did not pass Traffic information to the A109 pilot.

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.