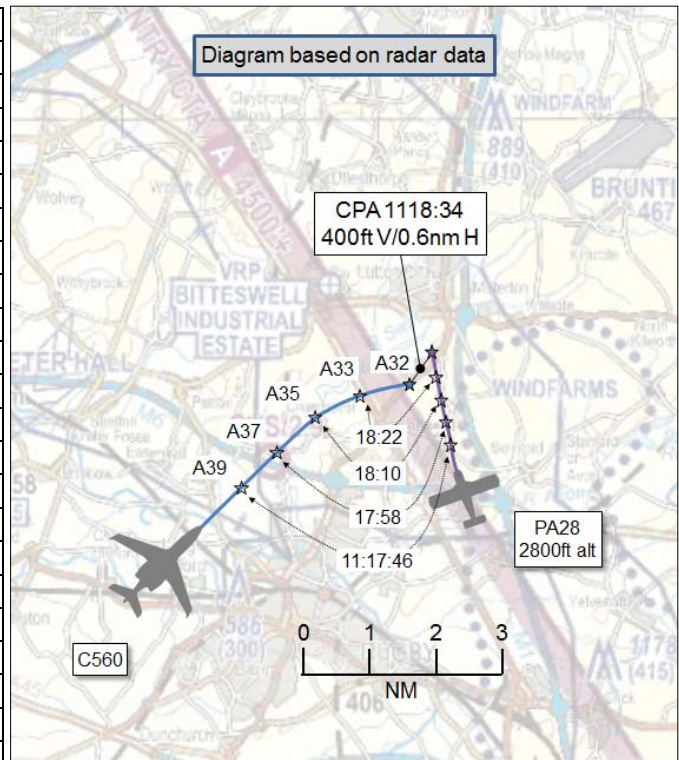


**AIRPROX REPORT No 2017080**

Date: 29 Apr 2017 Time: 1119Z Position: 5226N 00112W Location: 10nm ENE Coventry

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	C560	PA28
Operator	Civ Comm	Civ Trg
Airspace	London FIR	London FIR
Class	G	G
Rules	IFR	VFR
Service	Traffic	Basic
Provider	Coventry	East Midlands
Altitude/FL	3200ft	2800ft
Transponder	A, C, S	A, C
<b>Reported</b>		
Colours	NK	Blue, white
Lighting	All on	NK
Conditions	VMC	VMC
Visibility	'Good'	10km
Altitude/FL	3200ft	2945ft
Altimeter	QNH (1014hPa)	NK
Heading	080°	346°
Speed	180kt	105kt
ACAS/TAS	TCAS II	Not fitted
Alert	RA	N/A
<b>Separation</b>		
Reported	500ft V/2000m H	Not seen
Recorded	400ft V/0.6nm (1100m) H	



**THE C560 PILOT** reports that on approach to Coventry he was advised of a contact ‘wearing an East Midlands squawk’, ahead at 2800ft. They were in the descent to 3000ft on autopilot when the Captain advised he had traffic on TCAS but was not visual. ATC gave a new heading, right 25° on to 080°. The Captain advised ATC that the new heading was taking them towards the TCAS contact. ATC reiterated that the other traffic was travelling north at 2800ft. Whilst turning onto heading the co-pilot saw traffic in the right 1 o’clock position and advised the Captain, who was unable to see the traffic as it was obscured from his view whilst it travelled under the nose from right to left. Soon after, a TCAS TA was received and, shortly after, a TCAS RA was received ‘to level off’. The PF disengaged the autopilot and maintained 3200ft whilst the Captain advised ATC of the RA. ATC advised to maintain 3500ft and, when clear of conflict, 3500ft was entered in the altitude select and autopilot engaged.

He perceived the severity of the incident as ‘Medium’.

**THE PA28 PILOT** reports undertaking a navigation exercise and did not see the C560.

**THE COVENTRY CONTROLLER** reports the C560 was being vectored for the ILS RW23 at Coventry. The pilot was informed it would be a Traffic Service outside controlled airspace. Whilst being vectored, Traffic Information was passed on an unknown aircraft approximately 12nm northeast of Coventry with an East Midlands squawk, indicating 2600ft. Attempts were made to establish contact with East Midlands but the phone call was not answered. The C560 was descended to 3000ft which was acknowledged and Traffic Information was passed. Aircraft position was acknowledged by the C560 pilot as observed on TCAS. As the unknown was continuing northbound it was observed to be climbing. The C560 was then turned right to go behind and instructed to stop climb at 3500ft. When the instruction was questioned the pilot was instructed to level off at 3500ft. The pilot reported he was responding to a TCAS RA, which was acknowledged. The unknown aircraft, observed at 2800ft, passed 1nm behind the C560, then at 3300ft.

**THE EAST MIDLANDS CONTROLLER** was not aware of the incident and did not submit a report to the UKAB.

## Factual Background

The weather at Coventry was recorded as follows:

EGBE 291120Z 22010KT 190V250 9999 FEW030 SCT045 12/04 Q1014=

## Analysis and Investigation

### CAA ATSI

ATSI had access to reports from both pilots, the area radar recordings and Coventry Radar R/T recordings. ATSI also received a report from the controller involved and a copy of the unit investigation report. An interview with the controller was also conducted. Screenshots in the report are taken from the area radar only. ATSI were unable to replay the Coventry Radar recordings.

The C560 pilot was inbound to Coventry Airport under IFR and in receipt of a Traffic Service from Coventry Radar. The PA28 pilot was conducting a VFR flight in the area in receipt of a Basic Service from East Midlands Radar. The C560, (transponder 5276), contacted Coventry Radar at 1115:40 and was advised by the controller that he would receive radar vectors for an ILS approach to RW23 at Coventry. The controller then instructed the pilot to fly heading 050° (see Figure 1).

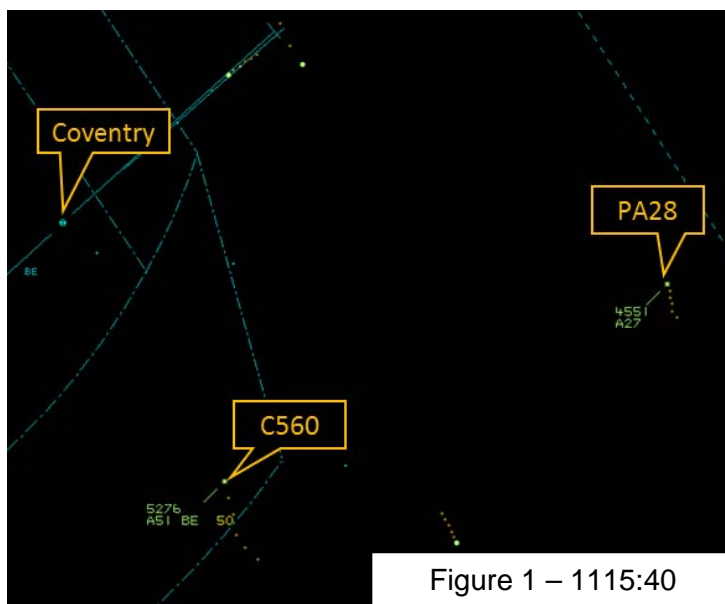


Figure 1 – 1115:40

At 1116:12, the controller descended the C560 (then within the Birmingham CTA) to an altitude of 4000ft, and advised that, when it left controlled airspace, the controller would provide a Traffic Service, which was acknowledged by the pilot. At 1117:27 (see Figure 2), the controller descended the C560 to 3000ft, and then passed the following Traffic Information:

*“There is traffic presently in your right one o’clock, three and a half miles, northerly track, indicating two thousand six hundred feet, wearing an East Midlands Squawk”*

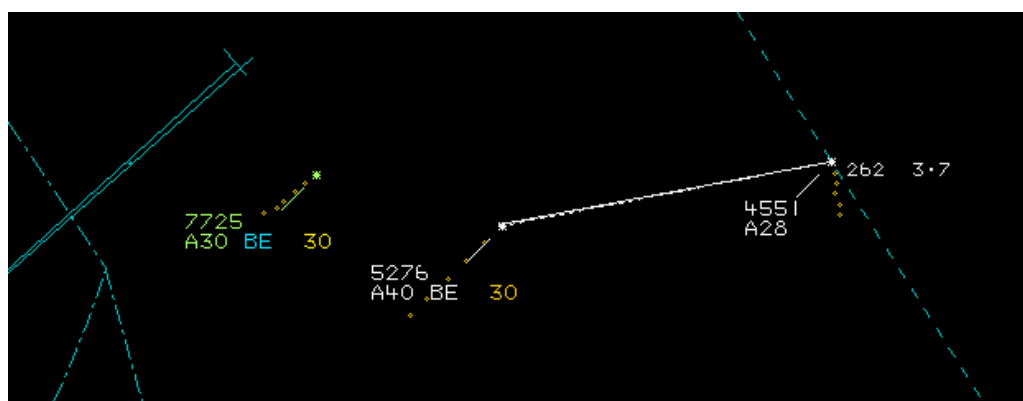


Figure 2 – 1117:27 (Note: STCA activated on area radar)

The C560 pilot acknowledged the Traffic Information and advised that he could see traffic on TCAS in their one o'clock. The controller had another aircraft on frequency, in the Coventry Hold at 3000ft (transponder 7725), but there were no communications with, nor references to that aircraft during this period.

At 1117:52 (see Figure 3), the controller instructed the C560 pilot to turn right onto a heading of 080°. The pilot read this back but then commented:

*“and, er, that seems to take us towards the traffic...”*

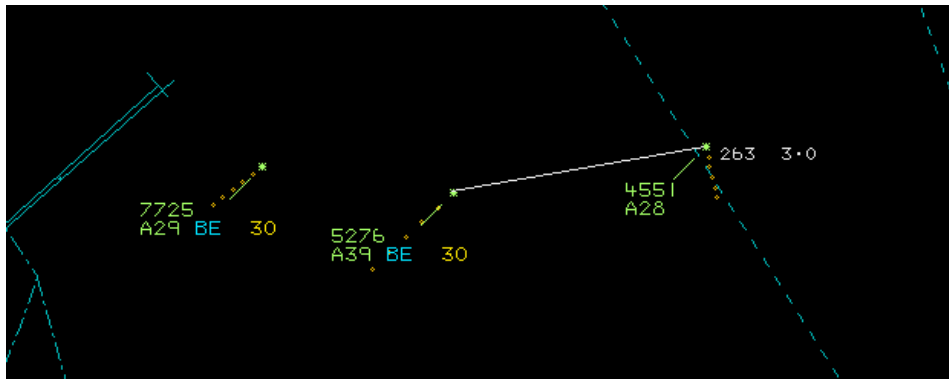


Figure 3 – 1117:52

At 1118:10 (see Figure 4) the controller responded:

*“stop the climb at altitude three thousand five hundred feet, er, I’ll be taking you behind that traffic which is continuing on a northerly track”*

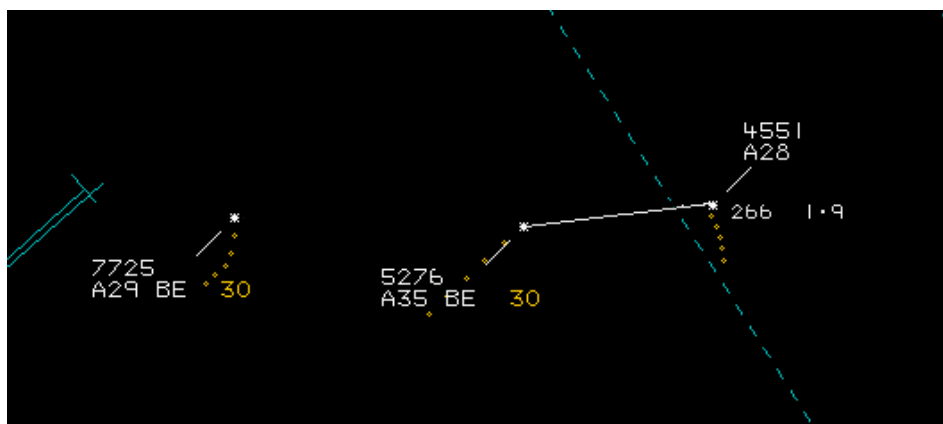


Figure 4 – 1118:10

The C560 was observed to have already passed through 3500ft in the descent and was approaching 3200ft when the pilot acknowledged with:

*“Ok, sorry, levelling off.....”*

To which the controller responded:

*“affirm, level off three thousand five hundred, on 1014”*

The C560 pilot read this back and at 1118:30 (see Figure 5). advised that they had received a TCAS Resolution Advisory.

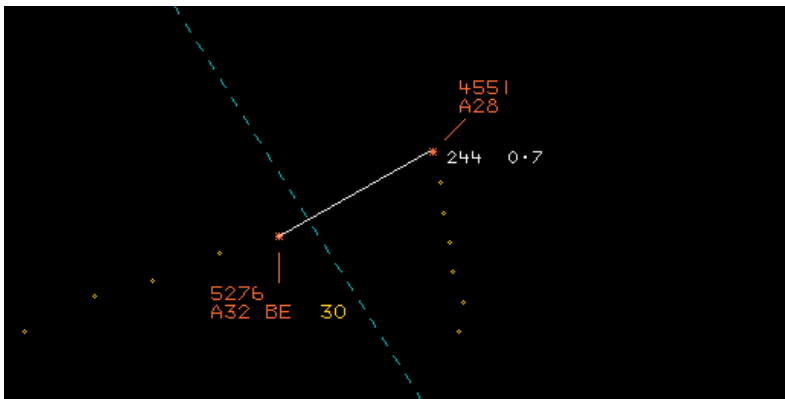


Figure 5 – 1118:30

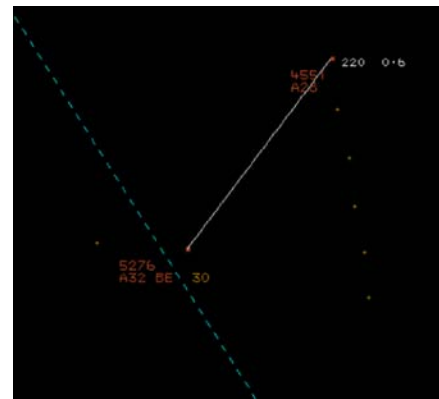


Figure 6 – 1118:35

CPA took place at 1118:35 (see Figure 6) with the aircraft separated by 0.6nm laterally and 400ft vertically.

At interview, the Coventry Radar controller stated that they believed that they had seen the potential confliction with the PA28 when the C560 pilot had first called them, and that their plan had been to go behind and descend on top of the PA28. This contradicts the actions the controller subsequently took.

It was reported that on the Coventry Radar, the PA28 was at 2600ft, and that the controller had made an attempt to contact East Midlands, but the call was not answered.

When asked about having the C560 flying on a heading towards the PA28, and in a descent to 3000ft, which would bring it within 400ft of the PA28, (based on the reported altitude of the PA28 being 2600ft), the controller was adamant that this was acceptable, within the guidelines and instructions contained within CAP774, and that there was no deconfliction minima to be applied.

CAP744 UK Flight Information Services states:

*Deconfliction is not provided under a Traffic Service. If a pilot requires deconfliction advice outside controlled airspace, Deconfliction Service shall be requested. The controller shall make all reasonable endeavours to accommodate this request as soon as practicable.<sup>1</sup>*

However it then goes on to state:

*When providing headings/levels for the purpose of positioning and/or sequencing or as navigational assistance, the controller should take into account traffic in the immediate vicinity based on the aircraft's relative speeds and closure rates, so that a risk of collision is not knowingly introduced by the instructions passed. However, the controller is not required to achieve defined deconfliction minima and pilots remain responsible for collision avoidance even when being provided with headings/levels by ATC.*

It was noted that when the controller first passed traffic information to the C560 on the PA28, the aircraft were within 3.7nm. CAP774 states that when under a Traffic Service:

*The controller shall pass traffic information on relevant traffic, and shall update the traffic information if it continues to constitute a definite hazard, or if requested by the pilot. However, high controller workload and RTF loading may reduce the ability of the controller to pass traffic information, and the timeliness of such information.<sup>2</sup>*

*Traffic is normally considered to be relevant when, in the judgement of the controller, the conflicting aircraft's observed flight profile indicates that it will pass within 3 NM and, where level information is available, 3,000 ft of the aircraft in receipt of the Traffic Service or its level-band if manoeuvring within a*

<sup>1</sup> CAP774. Ch3 Para 3.6

<sup>2</sup> CAP774. Ch3 Para 3.5

*level block. However, controllers may also use their judgment to decide on occasions when such traffic is not relevant, e.g. passing behind or within the parameters but diverging. Controllers shall aim to pass information on relevant traffic before the conflicting aircraft is within 5 NM, in order to give the pilot sufficient time to meet his collision avoidance responsibilities and to allow for an update in traffic information if considered necessary.*

Although the controller was restricted in manoeuvring the C560 to the left as they had the other aircraft in the hold also at 3000ft, their choice of heading (080°) was considered to be inadequate, because it took the C560 directly towards the PA28 rather than behind.

Options available to the controller were:

- a) A delayed descent of the C560 from 4000ft– this would have given greater vertical separation against the PA28 and/or the facility to turn left and pass over the top of the aircraft in the hold.
- b) A wider turn to the right to avoid the PA28.

The C560 pilot reported that when they were issued the turn on to 080°, one of the flight crew reported seeing the PA28 in their one o'clock position, but as they then turned onto the heading it became obscured by their aircraft's nose. They then received a TCAS TA followed by an RA. They also confirmed that the instruction to stop their descent (issued as a "stop climb" rather than a "stop descent") at 3500ft came as they were approaching 3200ft, by which time they were complying with the RA and subsequently stopped their descent at 3200ft.

Both aircraft were operating in Class G where ultimately pilots are responsible for their own separation.

### **UKAB Secretariat**

The C560 and PA28 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard<sup>3</sup>. If the incident geometry is considered as converging then the C560 pilot was required to give way to the PA28<sup>4</sup>.

### **Summary**

An Airprox was reported when a C560 and a PA28 flew into proximity at 1119 on Saturday 29<sup>th</sup> April 2017. Both pilots were operating in VMC, the C560 pilot under IFR in receipt of a Traffic Service from Coventry and the PA28 pilot under VFR in receipt of a Basic Service from East Midlands.

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

Information available consisted of reports from both pilots, radar photographs/video recordings, a report from one of the air traffic controllers involved and reports from the appropriate ATC authority.

Members first discussed the Coventry controller's actions and quickly agreed that they had played a major part in the Airprox. It was noted that, apart from passing Traffic Information later than desirable, the controller had complied with the letter of the legislation in that there were no deconfliction minima to apply and that the pilots remained ultimately responsible for collision avoidance. Notwithstanding, the Board focussed on whether a risk of collision had been introduced by the controller's vectors to the C560 pilot. It was felt that the vector to the C560 pilot, which would have taken him to within 400ft of traffic not under a service from Coventry, portrayed at best a naïve appreciation of collision avoidance, especially because the Coventry controller could not have known whether the PA28 pilot planned to climb or turn. The Board therefore agreed unanimously, and without requiring further

<sup>3</sup> SERA.3205 Proximity.

<sup>4</sup> SERA.3210 Right-of-way (c)(2) Converging.

discussion, that the Coventry controller had vectored the C560 into conflict with the PA28 by issuing the descent instruction along with the heading vector, and that this was the cause of the Airprox.

Turning to the C560 pilot, members noted that he had been passed Traffic Information on the PA28, albeit later than desirable, and that he had stated he had the traffic on TCAS. He also questioned the controller's vector when it was passed yet still turned and descended towards the PA28. Members wondered whether he had been fully aware of his responsibility to give way to the PA28 and whether vectors from ATC had engendered a mindset of being under radar control. In this respect, members noted that although the C560 pilot was in receipt of a Traffic Service, it was his responsibility to apply SERA in Class G airspace and that, ultimately, he was required to give way to the PA28; he could have refused the turn, or stopped his descent, thus removing the likelihood of the TCAS RA. Considering the risk, the Board was content that the C560 crew had sufficient awareness of the PA28's position, including a visual sighting by the co-pilot before the TCAS RA, that risk of collision had been averted.

### **PART C: ASSESSMENT OF CAUSE, RISK AND SAFETY BARRIERS**

Cause: Coventry ATC vectored the C560 into conflict with the PA28.

Degree of Risk: C.

#### Safety Barrier Assessment<sup>5</sup>

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

#### **ANSP:**

**Regulations, Processes, Procedures and Compliance** were assessed as **ineffective** because the Coventry controller vectored the C560 towards the PA28.

**Situational Awareness and Action** were assessed as **partially effective** because although the controller gave TI to the C560 pilot, his subsequent actions exacerbated the conflict.

#### **Flight Crew:**

**Tactical Planning** was assessed as **partially effective** because the C560 crew's plan needed to account for the fact that they were in Class G airspace and were therefore required to do more to ensure that they satisfied their responsibility to give way to the PA28, either laterally or vertically or both.

**Situational Awareness and Action** were assessed as **partially effective** because although the C560 crew were aware of the approaching conflict, and warned ATC of it, they did not give way to the PA28.

**See and Avoid** were assessed as **partially effective** because the PA28 pilot did not see the C560 and the C560 co-pilot only saw the PA28 at a late stage.

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<sup>5</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

