

## **AIRPROX REPORT No 2014033**

Date/Time: 27 Mar 2014 1243Z

Position: 5216N 00018E  
(8nm NE Cambridge airport)

Airspace: London FIR (Class: G)

Aircraft 1                      Aircraft 2

Type: SB20                      PA23

Operator: CAT                      Civ Comm

Alt/FL: 1700ft                      1900ft  
QNH                      QNH

Conditions: NK                      VMC

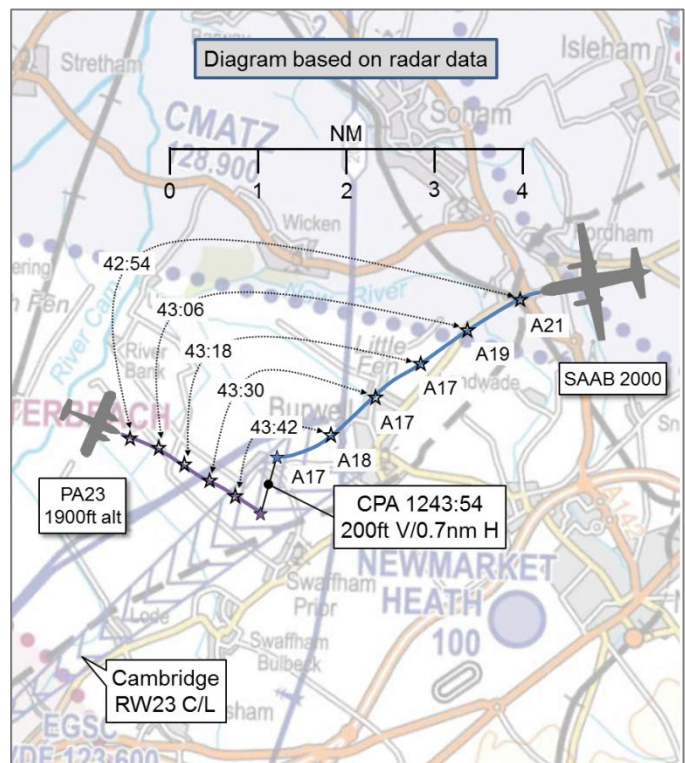
Visibility: NK                      NK

Reported Separation:

NK                      NK

Recorded Separation:

200ft V/0.7nm H



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

**THE SAAB 2000 (SB20) PILOT** reports inbound to Cambridge airport (CBG) IFR. When established on the RW23 ILS Localiser at 1700ft, 8nm before the Glide Slope intercept point (outside CAS), ATC issued Traffic Information about unknown traffic, which was not in contact with the controller. As TCAS alerted "Traffic Traffic" the Pilot Flying (PF) reported that he had just become visual with the traffic in his one o'clock. A TCAS RA was then received. Immediate avoidance action was made by the PF and he reported this action to ATC. The Approach controller acknowledged his RA report.

He perceived the severity of the incident as 'Low'.

**THE PIPER PA23 AZTEC (PA23) PILOT** reports operating a VFR flight in VMC. His aircraft was coloured white, beacon and strobe lights were illuminated and SSR Mode C was selected; the aircraft was not equipped with Mode S or TCAS. The two flight crew and the equipment operator were not aware that an Airprox had occurred and the other aircraft was not seen. Having been in contact with RAF Marham for a Traffic Service, he had changed frequency to RAF Lakenheath to request a transit. However, radio contact was not achieved because the second pilot became ill; the Lakenheath MATZ was avoided. He realised that contact with Cambridge ATC would have been preferable, but this had not taken place due to the distraction of the illness of the second pilot.

**THE CAMBRIDGE APPROACH RADAR CONTROLLER** reports that at approximately 1240 he took control of the SB20, which was inbound to CBG from the SE, via ABBOT. He had already observed an unknown aircraft [the PA23], squawking 7000, indicating 2000ft, approaching CBG from the north and had given avoiding action to another departure routeing to the NW. As the SB20 pilot, who was in receipt of a Traffic Service, approached wide base-leg RW23, he passed Traffic Information on the unknown aircraft, which was in his 10 o'clock at about 8nm. He advised the pilot that on its current track it would pass the centreline at a range of 5nm, co-incident with his ILS approach. As the SB20 pilot established on the ILS, he updated the Traffic Information about the other aircraft, which was still converging at a similar altitude. The SB20 pilot accepted avoiding action and turned NW at 1700ft. The two aircraft passed within 0.5nm horizontally and approximately 200ft vertically. The SB20 pilot was subsequently re-sequenced to the ILS RW23.

## Factual Background

The CBG weather was:

METAR EGSC 271250Z 07006KT 010V150 8000 VCSH SCT020TCU BKN032 10/03 Q1012

CAP 774 UK-Flight Information Services<sup>1</sup> states:

'A Traffic Service is a surveillance based ATS, where in addition to the provisions of a Basic Service, the controller provides specific surveillance-derived traffic information to assist the pilot in avoiding other traffic. Controllers may provide headings and/or levels for the purposes of positioning and/or sequencing; however, the controller is not required to achieve deconfliction minima, and the avoidance of other traffic is ultimately the pilot's responsibility.

Whether traffic information has been passed or not, a pilot is expected to discharge his collision avoidance responsibility without assistance from the controller. If after receiving traffic information, a pilot requires deconfliction advice, an upgrade to Deconfliction Service shall be requested. The controller shall make all reasonable endeavours to accommodate this request as soon as practicable and provide deconfliction advice at the earliest opportunity.

*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 by ATC.*

## Analysis and Investigation

### CAA ATSI

CAA ATSI had access to CBG RTF<sup>2</sup> and area radar recordings, together with the written reports from the Cambridge Radar controller and from the PA23 pilot.

The SB20 pilot contacted CBG Radar and was identified in the descent to 4000ft on a heading of 300° for an ILS approach to RW23. The pilot requested a Traffic Service and the controller replied, "[SB20 C/S] Traffic Service reduced all around due to poor radar performance and descend to altitude one thousand seven hundred feet", which was acknowledged correctly by the SB20 pilot.

At 1241:51, the controller passed Traffic Information, "[SB20 C/S] er early traffic information unknown traffic left ten o'clock range eight miles be crossing through the final approach track it appears at approximately five miles indicating 2000ft unverified southeast bound". The SB20 pilot replied "Thank you". At 1242:10 the SB20 pilot was instructed to turn left onto a heading of 270° and was cleared for the ILS approach.

At 1242:46 the SB20 pilot reported established on the localiser. The horizontal distance between the two aircraft was 5.6nm (Figure 1).

---

<sup>1</sup> Chapter 3

<sup>2</sup> A copy of the RTF transcription is at Annex B.

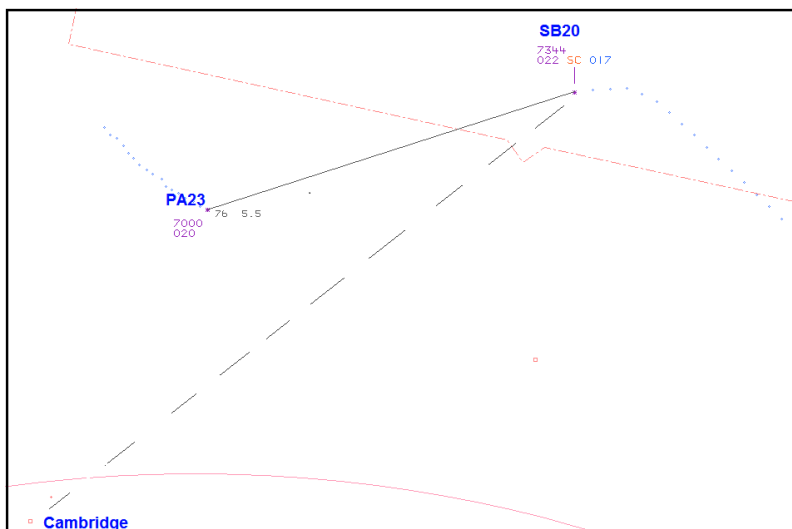


Figure 1 – Swanwick MRT at 1242:46

The controller advised, “[SB20 C/S] roger unknown traffic right [1243:00] twelve thirty range four miles right to left southeast bound indicating one thousand nine hundred feet I may break you off this approach” and the SB20 pilot acknowledged “[SB20 C/S] er Roger”.

At 1243:20 the controller advised the SB20 pilot, “and that’s er now two and a half miles still conflicting would you like me to break you off” and the SB20 pilot responded “Yes p-“. The distance between the two aircraft was 3nm and the SB20 was indicating FL017 (Figure 2).

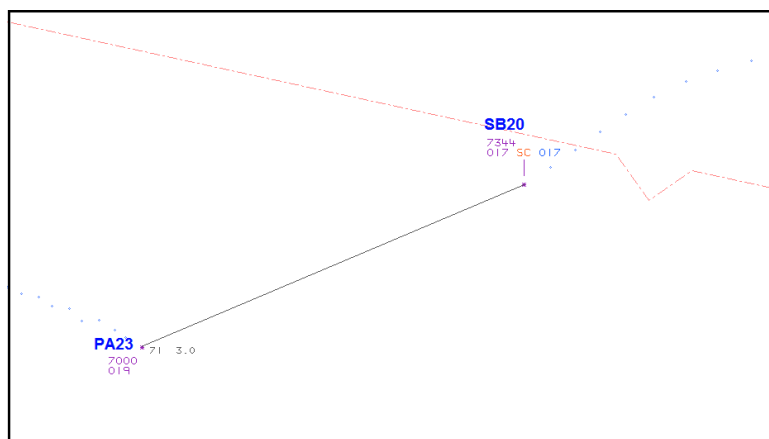


Figure 2 – Swanwick MRT at 1243:20

The controller then gave avoiding action, “[SB20 C/S] roger avoiding action turn right heading three two zero degrees” the SB20 pilot replied “Right heading er three two zero degrees [SB20 C/S]”. The groundspeed, as indicated by radar, for the SB20 was 208kt and the PA23 was 109kt.

The CPA occurred at 1243:54 when the horizontal distance between the two aircraft was 0.7nm and the vertical distance was 200ft (Figure 3).

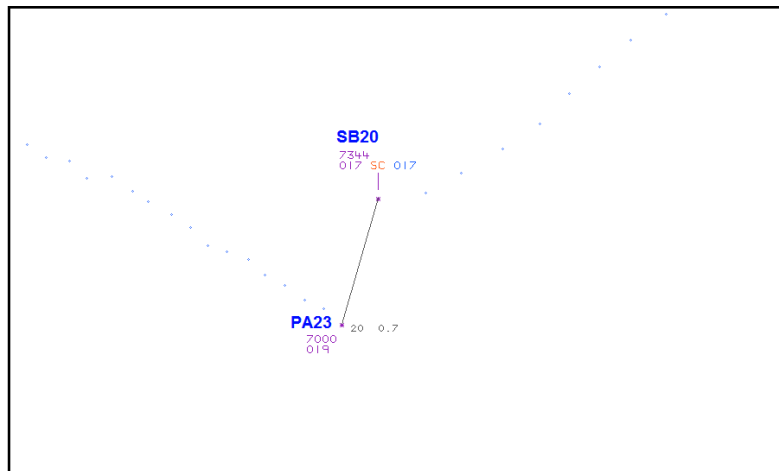


Figure 3 – Swanwick MRT at 1243:54

At 1243:54 the controller advised, “[SB20 C/S] clear of contric um conflict unknown traffic is now southeast of you range one mile indicating one thousand nine hundred feet unverified” and the SB20 pilot responded “Er we had a TCAS RA er descending and going back to one thousand seven hundred [SB20 C/S]”.

The SB20 pilot was then vectored right-hand for the ILS approach and landed without further incident.

At interview the controller reported that a Traffic Service had been agreed and that a Deconfliction Service would have been provided had the pilot requested an upgrade of service. The controller passed Traffic Information on the unknown aircraft [PA23] when the horizontal distance was 8nm. When the distance between the aircraft reached 4nm he updated the Traffic Information. The controller recalled that he had initially considered that the SB20 would pass slightly behind and below the PA23 and thought it probable that the SB20 pilot would sight the other traffic as it crossed ahead. When the distance had reduced to 2.5nm, it became apparent to the controller that the PA23 was slower than anticipated and had not cleared the approach as expected. This prompted the controller to ask the SB20 pilot if he wished to break-off the approach. The SB20 pilot was in receipt of a Traffic Service and the controller was not required to achieve deconfliction minima. The SB20 pilot did not request an upgrade of service.

### UKAB Secretariat

Both pilots had equal responsibility for collision avoidance<sup>3</sup> and the pilot with the other aircraft on their right was required to give way<sup>4</sup>.

### Summary

The Airprox occurred when the SB20, operating IFR and inbound on the ILS approach to RW23, came into proximity with the PA23, which was operating VFR and crossing through the final approach ahead of the SB20. Both aircraft were operating in Class G airspace where, regardless of the Air Traffic Service being provided, pilots are ultimately responsible for collision avoidance. The Radar controller first provided appropriate Traffic Information and then, subsequently, with the agreement of the SB20 pilot, provided avoiding action to resolve the conflict. The pilot of the SB20 received a TCAS RA descent. The pilot of the PA23 did not see the SB20. The minimum recorded separation was 0.7nm horizontally and 200ft vertically.

<sup>3</sup> Rules of the Air (2007) (as amended), Rule 8 (Avoiding aerial collisions).

<sup>4</sup> *ibid.*, Rule 9 (Converging).

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

Information available included reports from both pilots, the controller concerned, area radar and RTF recordings and reports from the appropriate ATC and operating authorities.

The Board first considered the actions of the Cambridge Approach Radar controller. The SB20 pilot had requested, and had been provided with, a Traffic Service shortly after contacting the Approach frequency. It was apparent that the controller had already been aware of the unknown traffic (the PA23) at this point. Although the controller issued the SB20 pilot with associated Traffic Information at an early stage, the Board noted that the controller still instructed the SB20 pilot to turn onto a closing heading for the ILS RW23 and cleared him for an approach despite realising that the PA23 was on a track which would route it through the RW23 approach path. The majority of Members considered that this turn and the clearance to establish on the localiser constituted the SB20 being vectored towards a potential conflict with the PA23.

ATC members referred to the instructions contained within CAP 774 (UK-Flight Information Services) with particular reference to the provision of headings/levels for the purpose of positioning and/or sequencing an aircraft. It was pointed out that CAP774 required that "...[a] controller should take account of other traffic in the immediate vicinity...so that a risk of collision is not knowingly introduced by the instructions being passed". Discussion then took place as to whether the controller's instructions had been passed despite the fact that he knew the PA23 might conflict with the SB20. The Board noted that the controller had reported that he had expected the PA23 to have passed through the approach path ahead of the SB20 but had misjudged the PA23's speed; consequently, some members considered that he had not 'knowingly created a risk of a collision'. Notwithstanding, a Civil ATC member commented that the controller could have delayed the SB20 pilot's approach by vectoring him through the ILS localiser and then re-positioning him from the right; this would have resolved the conflict without any risk of the aircraft coming into proximity with each other. As it was, the controller knowingly allowed the SB20 pilot to continue on the ILS, passing further Traffic Information, and then advising the pilot that he might break him off the approach. Many members believed that the controller therefore allowed the situation to develop, expecting the SB20 pilot to see the PA23 and visually avoid it, and had generated the expectation in the SB20 pilot's mind that ATC would ensure separation by breaking him off the approach if required. Once the distance between the two aircraft had reduced to 2.5 to 3nm, the controller recognised that action had to be taken; even though he was providing only a Traffic Service, and the pilot had not requested a change to a Deconfliction Service, he decided to issue an avoiding action turn after first asking the pilot if he wished for him to break off the approach. A Civil ATC member believed that he should have issued an avoiding action turn straight away without asking the pilot first.

The Board then considered the PA23 pilot's actions. Even taking into account the distraction caused by the illness to the second pilot, the Board were disappointed that the PA23 pilot had not contacted Cambridge Approach as he flew through the approach sector at an altitude and range consistent with the Glide Path; furthermore, whatever the distraction, the Board considered that the PA23 pilot should have been keeping a better look-out for other traffic as he did so. The Board considered that flying through the Cambridge approach path without contacting ATC was a contributory factor.

Turning to the SB20 pilot, members wondered why the pilot had continued his approach having received Traffic Information about unknown traffic crossing through the approach path in his vicinity at approximately the same altitude. The Board noted that the flight was being operated by a foreign airline, and they wondered whether the pilot may not have fully appreciated the nuances of ATC services outside Controlled Airspace. The Board opined that it might have been that he believed that Cambridge ATC had responsibility to take appropriate action to resolve the conflict; this might also explain why he did not request a Deconfliction Service. The Board decided that the inaction of the SB20 pilot, after receiving Traffic Information about the PA23, was also a contributory factor. Following two Airprox<sup>5</sup> similarly involving foreign pilots operating IFR into airports outside Controlled Airspace, the Board recalled that they had made the following recommendation: *'The CAA reviews*

---

<sup>5</sup> Airprox 2013145, 2013150

*the required content of airfield briefs with specific emphasis on informing foreign visiting pilots of their responsibilities under ATSOCAS*'. The CAA had not accepted this recommendation because they felt that sufficient guidance already existed.

In the end, the Board agreed that the controller's action and the TCAS RA had resolved the conflict in a timely and effective manner; the Airprox was considered to be Risk C. After a lengthy discussion about the cause of the Airprox, which took into account the actions of the pilots and the controller, two possible causes were forthcoming: either 'a conflict in Class G' or 'the controller vectored the SB20 into conflict'. After a vote to establish the Board's decision, the vast majority of the Board considered that the root cause had been that the controller had vectored the SB20 pilot into conflict with the PA23. Notwithstanding, they commended him for subsequently pro-actively resolving the conflict in the face of inaction by the SB20 pilot.

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

<u>Cause:</u>	The Cambridge controller vectored the Saab 2000 into conflict with the PA23.
<u>Contributory Factors:</u>	<ol style="list-style-type: none"> <li>1. The PA23 pilot flew through the Cambridge approach path without making contact with Cambridge ATC.</li> <li>2. The Saab 2000 pilot did not manoeuvre to give way to the PA23, of which he was given Traffic Information.</li> </ol>
<u>Degree of Risk:</u>	C
<u>ERC Score<sup>6</sup>:</u>	2

---

<sup>6</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.