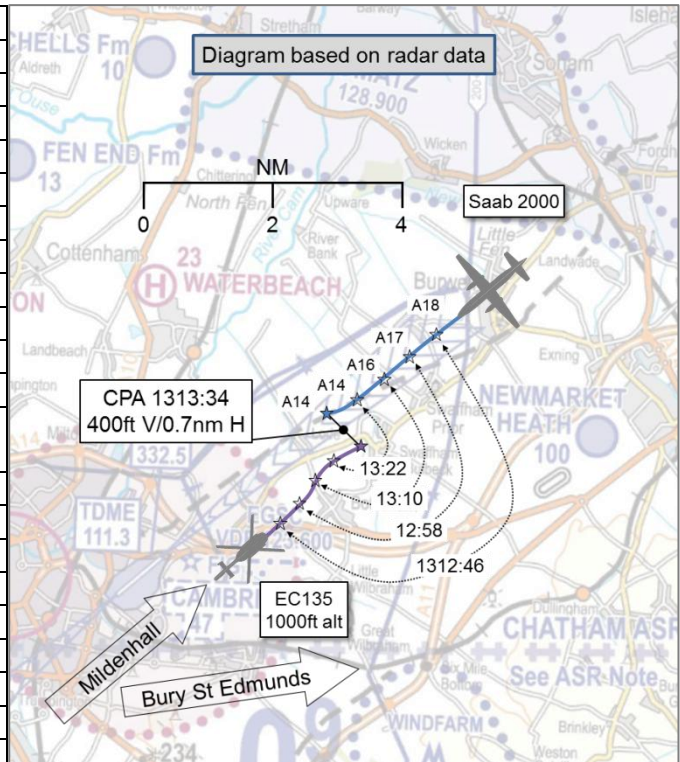


AIRPROX REPORT No 2015097

Date: 27 Jun 2015 Time: 1314Z Position: 5215N 00016E Location: 3.5nm NE Cambridge Airport (Saturday)

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Saab 2000	EC135
Operator	CAT	HEMS
Airspace	London FIR	London FIR
Class	G	G
Rules	IFR	VFR
Service	Traffic	Basic
Provider	Cambridge RAD	Cambridge RAD
Altitude/FL	1200ft	700ft
Transponder	A/C/S	A/C/S
Reported		
Colours	Company colours	Yellow
Lighting	Wingtip strobes, beacons, land, nav	Tail strobe, nav, land
Conditions	VMC	VMC
Visibility	10km	>10km
Altitude/FL	1400ft	900-1000ft
Altimeter	QNH (1019hPa)	QNH
Heading	231°	055°
Speed	160kt	120kt
ACAS/TAS	TCAS II	Not fitted
Alert	TA	N/A
Separation		
Reported	500ft V/2nm H	600ft V/1.5nm H
Recorded	400ft V/0.7nm H	



THE CAMBRIDGE APPROACH RADAR CONTROLLER reports that he was vectoring the Saab 2000 pilot under a Traffic Service for an ILS RW23. At some point during the intermediate stages of the approach he was made aware, either directly from the Aerodrome controller or through the assistant (he could not remember which), that the EC135 was on start departing to Bury. Shortly afterwards he saw on his display the 0020 squawk get airborne on a north-east track and the pilot called on his frequency as he was leaving the ATZ (there were no further calls from the Aerodrome controller which was in accordance with standard VFR procedures for Cambridge). When the EC135 pilot called on his frequency, the Saab 2000 was on a closing heading to intercept the localiser at approx 6.5nm. He gave the EC135 pilot a Basic Service and advised him that there was a Saab 2000 establishing on the ILS at approximately 6nm, which he acknowledged. As the EC135 pilot was at this stage still tracking north-east (and not towards Bury) he asked him to confirm that his destination was Bury St Edmunds in case there was another village called Bury in a different location that he was not aware of; the pilot confirmed that his destination was Bury St Edmunds. However, the EC135 pilot continued tracking north-east and not towards Bury St Edmunds, which is due east of Cambridge. He asked the EC135 pilot to widen out from the Final Approach Track (FAT) due to the inbound Saab 2000, which he acknowledged. However, there was no discernible change in track (in fact the EC135 appeared if anything to close further on the FAT). By this stage the Saab 2000 pilot was fully established on the ILS indicating 1600ft descending, and was head-to-head with the EC135 (which was indicating 1000ft amsl) at a range of approximately 2nm. The EC135 was less than 0.5nm south of the localiser track displayed on the radar display and showing no sign of turning towards Bury St Edmunds. With the Saab 2000 descending towards the EC135, and the distance between the two aircraft rapidly diminishing with little horizontal displacement, he felt his only option was to give an avoiding-action turn to the Saab 2000 pilot to the north-west (he believed he issued 320°). As the Saab 2000 pilot had starting descending on the glide path he also initiated a climb back

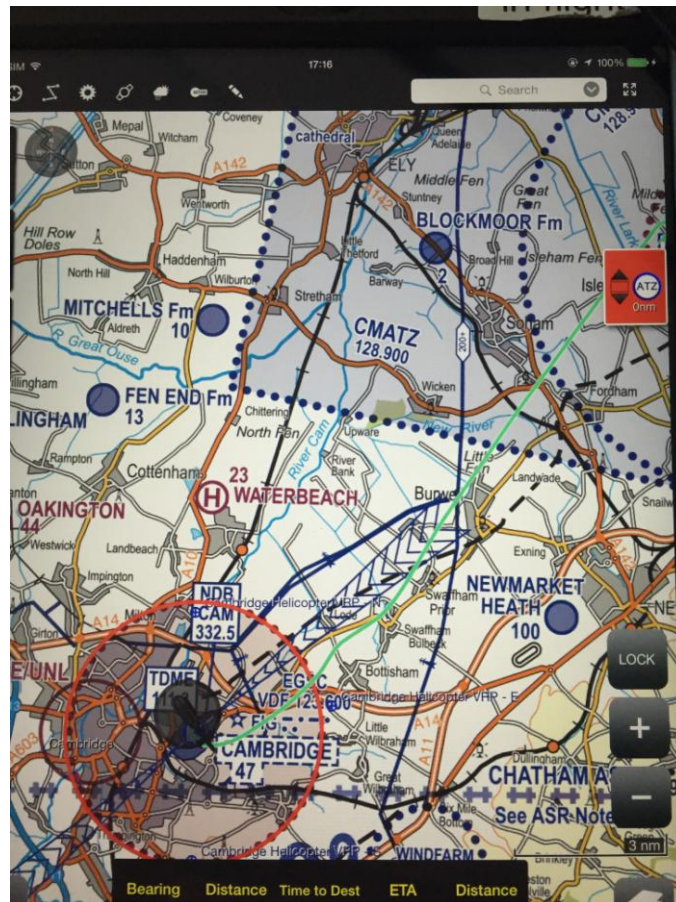
to a terrain safe level (he believed he issued 1700ft). The Saab 2000 pilot asked him to repeat the heading, which he did, and re-iterated that it was avoiding action in case the crew were flying the approach on auto-pilot as he wished to emphasise the urgent nature of the turn. He considered giving a terrain alert but, given the critical stage of flight the Saab 2000 crew faced and the undoubtedly high workload associated with an avoiding action turn having configured for the approach, combined with the good weather, the turn he gave was away from the only significant obstacle. The Saab 2000 was never seen to be more than 200ft below minimum RVA, which led him to decide that a terrain alert was not a priority. He did not remember if he gave Traffic Information to the Saab 2000 pilot on the EC135. He believed that, once he decided that he needed to take avoiding action, he did not update the Traffic Information as his priority was increasing the horizontal distance between the aircraft. Whilst he appreciates that he may have exceeded the terms of a Traffic Service by providing deconfliction advice, he was extremely uncomfortable with the situation with which he was presented and felt that without taking the avoiding action the best possible outcome would have been the Saab 2000 pilot getting a TCAS RA. At no point did either pilot report visual with the other on the RT. The Saab 2000 pilot was successfully repositioned for an ILS to RW 23. The EC135 pilot continued to fly directly up the RW23 FAT, left the frequency for Lakenheath, and was seen to land in the vicinity of RAF Mildenhall (approximately 10nm NW of Bury St Edmunds). He estimated that at the closest point the distance between the aircraft was 1nm horizontally and 400ft vertically. He believed if he had not issued the avoiding turn this would have been less than 0.5nm horizontal and 0ft vertical. He felt that with hindsight he could have exercised more positive control over the EC135 pilot but, given his Cat A status and the fact that he was operating on a Basic Service below a terrain safe level, he did not feel able to significantly alter his flight path. If he had known that the EC135 pilot was going to the Mildenhall area he would have delayed the approach of the Saab 2000 pilot to facilitate the opposite direction Cat A departure but having been told twice (once by ADI/Assistant and once by the pilot) that he was routing to Bury St Edmunds he believed the aircraft were not on conflicting flight paths. By the time it became apparent from radar that the EC135 pilot was not going to Bury St Edmunds he was already into a rapidly deteriorating head-on situation that he felt required decisive action to resolve. At the time he believed the risk of collision (without the avoiding turn) to have been moderate and, even with the turn, believed that safety was, or may have been, compromised.

THE Saab 2000 PILOT reports that he was being radar vectored to an ILS approach for RW23 at Cambridge. He was descended to altitude 1700ft and instructed by ATC to report established on the localiser. The RT frequency was very busy with GA traffic, and he was unable to report localiser established. He commenced descent on the glide-slope. ATC then informed him of opposite direction traffic, and immediately issued an avoiding action right turn heading 320° and climb to altitude 1700ft. A TCAS TA momentarily activated and then silenced once the avoiding action was initiated. The crew did not see the conflicting traffic. Further radar vectors to an ILS approach and landing on RW23 followed. He had first seen the other traffic on TCAS appear to depart Cambridge when he was on final approach at 5-6nm. However, he was not expecting it to track up the approach towards his aircraft. He subsequently telephoned Cambridge ATC and spoke to the controller involved, to seek his perception of the event. He confirmed that the other traffic was a helicopter that had departed Cambridge. The controller explained that he had expected the helicopter pilot to adopt an easterly track towards Bury St Edmunds, not a north-easterly track towards him on final approach for RW23. The Saab 2000 pilot did not see the other traffic; however, the other flight-deck crew member did. He suggested that it would have passed well to their left-hand side (to the south of them) and as such he considered there was no risk of a collision.

He assessed the risk of collision as 'None'.

THE EUROCOPTER EC135 PILOT reports that the EC135 was dispatched on a HEMS task, Category A, from Cambridge airport towards Mildenhall (initially passed by the Medical crew to him as Bury St Edmunds). He departed the circuit and ATZ and was establishing on track when ATC advised him that there was instrument traffic establishing on final for RW23, which both front seat crew (the P2 seat was occupied by another HEMS qualified pilot who was assuming the role of HEMS crew member) were visual with at 6nm. The controller asked him to 'widen out' from the centreline. He immediately commenced a right turn towards the east to cross behind the traffic, the

controller then issued the fixed-wing traffic with a 'Go Around' for avoiding action. He stopped the right turn as the aircraft was going around and passed behind it, continuing to the HEMS incident. The EC135 pilot provided a screen-shot of his track, as shown below:



He assessed the risk of collision as 'None'.

Factual Background

The Cambridge weather was:

EGSC 271250 25009KT 230V290 9999 SCT045 20/11 Q1019

Analysis and Investigation

CAA ATSI

ATSI had access to both pilot reports, the controller report, the Swanwick Area Radar recording and recordings of the Cambridge Approach frequencies. ATSI also corresponded with Cambridge with regard to follow-up action from the event.

The Saab 2000 pilot was flying IFR, being vectored for an ILS approach to RW23 and was in receipt of a Traffic Service. The EC135 pilot was routing to a site near Mildenhall, operating VFR and receiving a Basic Service. As the EC135 pilot departed Cambridge he climbed to approximately 1000ft and tracked to the north-east.

The Radar controller was advised by Cambridge Tower that the EC135 pilot intended to track to 'Bury' (referring to Bury St. Edmunds). This track would have taken the EC135 pilot due east from Cambridge. On departure from Cambridge the EC135 pilot tracked to the north-east. When the EC135 pilot first called Cambridge Radar he appeared to still be tracking to the north-east, so the

controller confirmed that he was indeed intending to track to Bury and issued Traffic Information about the Saab 2000 establishing on final approach for RW23. Although the EC135 pilot reassured the controller as to his routing to Bury St Edmunds, the track continued north-east and the controller requested that the EC135 pilot 'widen' his track away from the final approach. As the two aircraft began to get closer, the controller issued Traffic Information to the Saab 2000 pilot which, unfortunately, was blocked and not acknowledged. The controller started to repeat the Traffic Information but, during this transmission, the controller decided that the EC135 was not far enough away from the final approach and gave avoiding action to the Saab 2000 pilot.

CPA occurred at 1313:34 (Figure 1) – 400ft vertical and 0.7nm horizontal.

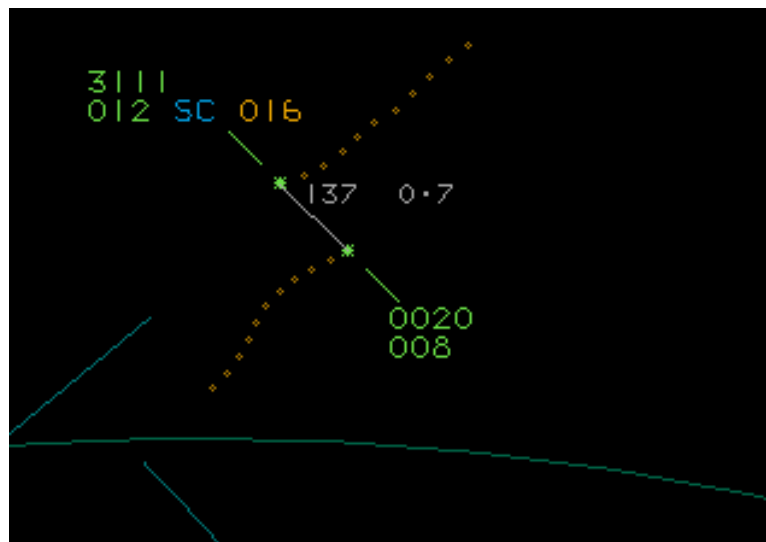


Figure 1 – Swanwick MRT at 1313:34 – CPA (Saab 2000 code 3111, EC135 code 0020).

Although the crew of the EC135 indicated in their written report that they were visual with the inbound Saab 2000, the controller was not aware that any aircraft crew had sighted the other.

Following this occurrence the ATCU and the EC135 operator discussed the event and a set of recommendations were agreed upon which included the importance of advising ATC of any changes to intended or reported routing, and the dangers of flying reciprocal routings to final approaches, as well as reminders on how TCAS events can be initiated.

Under the provision of a Basic Service a controller is not expected to monitor a flight.

'However, where a controller has information that indicates that there is aerial activity in a particular location that may affect a flight, they should provide information in general terms to assist with the pilot's situational awareness.'¹

'Under a Traffic Service 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.'²

UKAB Secretariat

Both pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard³. Because the geometry was head-on both pilots were required to turn to the right⁴.

¹ CAP493 Section 1 Chapter 12 Para 2E.2

² CAP493 Section 1 Chapter 12 Para 3F.1

³ SERA.3205 Proximity.

⁴ SERA.3210 Right-of-Way (c) (1) Converging.

Summary

The Airprox occurred in Class G airspace approximately 3.5nm north-east of Cambridge Airport. The Saab 2000 pilot was inbound to the airport, established on the ILS approach to RW23, in receipt of a Traffic Service. The Radar controller was advised that the EC135 pilot would be outbound on a VFR CAT A flight to the east towards Bury St Edmunds. However, after departure the EC135 pilot tracked to the north-east towards Mildenhall. Traffic Information was issued to both pilots and, as the two aircraft continued towards each other, the controller issued avoiding action to the Saab 2000 pilot. The Saab 2000 pilot only saw the EC135 on TCAS (although another flight-deck crew member did see the helicopter as they passed); the EC135 crew reported seeing the Saab 2000 at 6nm and turning right to avoid it. CPA was 400ft vertically and 0.7nm horizontally.

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 discussed the actions of the EC135 pilot. The Civil Helicopter Pilot member, with HEMS operational experience, explained the process when a CAT A HEMS flight is despatched. Because of the urgency of the task, the pilot is initially only informed of the approximate position of the incident destination and sets off in that general direction as more specific details are given to the paramedic crew member. Once airborne, the paramedic crew enters the details into the aircraft's navigation system, which sets up a direct line to follow on the flight map to the required site; however, this may not occur until the helicopter has covered anything up to 5nm from its departure point. Even so, the member was surprised that the pilot had decided to route in the opposite direction to the Cambridge airport Final Approach Track, especially as he had been informed about the presence of the Saab 2000 on the approach and that he had it in sight from 6nm. He wondered if the pilot believed he was further from the approach path than he had been, and had thought that he had allowed enough room between his helicopter and the Saab 2000. He could not readily explain why the pilot had continued to inform ATC that he was routing to Bury St Edmunds rather than Mildenhall (his ultimate destination) other than to explain that there may have been a degree of uncertainty in the tasking that he and the paramedic had received, which might have simply initially stated that Bury St Edmunds was his destination, and that he was unaware of the bearing of Bury St Edmunds from Cambridge. Some members wondered whether the EC135 pilot had been loath to turn away from his direct tack to the incident because he had been on a CAT A flight and would have assumed that he had a degree of priority as a result. In this respect, the Board noted that the controller had reported that he would have delayed the Saab 2000's approach had he been aware of the actual routing of the EC135, and Civil ATC members confirmed that the term CAT A is used by ATC for prioritisation. CAP493 (Manual of Air Traffic Services Part 1) describes Flight Priority Categories and states:

'Controllers shall give priority to aircraft according to flight priority category ... where category A is the highest priority and Z is the lowest priority.'⁵

A discussion ensued as to the precise meaning of 'priority', the guidance in CAP493 being:

'It should be noted that these categories are designed for use as a method of tactical handling by ATC and not as flow control priorities.'⁶

Members wondered whether priority of routing applied in Class G airspace (as opposed to controlled airspace) and agreed that no such priority to emergency services aircraft existed and that the Rules of the Air/SERA applied to all. Notwithstanding, the Board opined that, had the EC135 pilot told ATC that he was routing to Mildenhall rather than Bury St Edmunds, then there would have been every possibility that the Airprox would have been avoided because the controller would have had a clear

⁵ Section 1, Chapter 4 Control of Traffic, paragraph 10C.1

⁶ Section 1, Chapter 4 Control of Traffic, paragraph 10C.3

understanding of the 2 aircrafts' relative routings and would likely have ensured that they did not come into conflict by modifying the Saab 2000's track.

The Board noted that, from the information that had been provided to him, the Radar controller had every expectation that the EC135 pilot would depart to the east towards Bury St Edmunds and not into conflict with the Saab 2000 which was approaching from the northeast. On noting that the EC135 was in fact routing to the northeast, and although its pilot continued to inform him that he was proceeding to Bury St Edmunds, members noted that the controller became sufficiently concerned to request him to 'widen' his track away from the approach path. ATC members commented that the controller was now in a difficult situation wherein he had provided Traffic Information to both pilots but could still see that conflict developing and was not aware if the pilots could see the other aircraft. Deciding that he had waited long enough for the confliction to be resolved, the Board commended the controller's proactive actions to control the situation by issuing an avoiding-action turn to the Saab 2000 pilot despite his not being required to under the terms of the Traffic Service.

The Board then discussed the cause of the Airprox. It was quickly decided that it was the EC135 pilot's routing close to the final approach path that had understandably concerned both the controller and the Saab 2000 pilot. Within this context, the Board decided that there were two contributory factors, both relating to the EC135 pilot's actions: he did not route as he had stated to ATC; and he flew in the opposite direction and adjacent to the approach path. Notwithstanding, the Board agreed that there had not been a risk of a collision. The E135 pilot had been visual with the Saab 2000 for about 6nm, and the action taken by the controller had increased the separation between the two aircraft. Therefore, the Board decided that the Airprox should be categorised as risk Category C.

The Board were pleased to note that the ATCU and the EC135 pilot had subsequently discussed the event and had agreed a set of recommendations to address these issues. However, Board members were still concerned that not all pilots operating CAT A flights might be fully aware of the meaning and limitations associated with 'priority flight' status because there is little guidance in the UK AIP. They recalled that a previous recommendation had been made (Airprox 2014043) in that: *'The CAA considers publishing guidance and information on the meaning and use of priority flights'*. Director UKAB reported that the CAA had recently responded that they had decided that, because priority categories were of direct relevance to ATC, the information would remain in MATS Part 1. However, consideration of the associated MATS Part 1 text had highlighted inconsistencies within the AIP regarding the presentation of information on flight priorities. Therefore, the CAA had agreed to consider the overall issue of flight priorities, how associated guidance is presented in MATS Part 1, identify any need to communicate the priorities outside the ATS domain, and determine the most appropriate means of undertaking any wider communication to industry. This included addressing the AIP inconsistencies alluded to above.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The EC135 pilot flew close enough to cause concern.

Contributory factors:

1. The EC135 pilot did not route as he had stated to ATC.
2. The EC135 pilot flew in the opposite direction and adjacent to the approach path.

Degree of Risk: C.