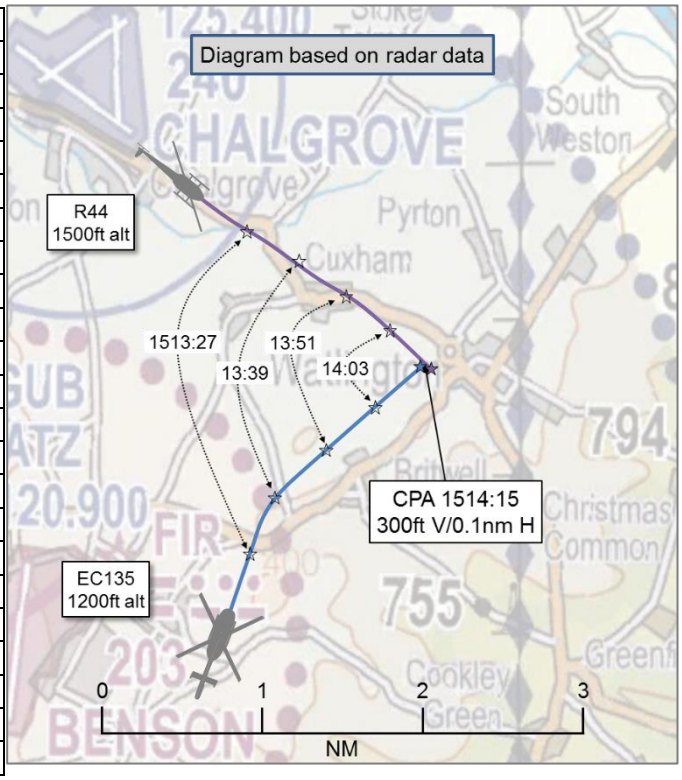
AIRPROX REPORT No 2017277

Date: 14 Dec 2017 Time: 1514Z Position: 5139N 00101W Location: 4nm NE RAF Benson

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	EC135	R44
Operator	Civ Comm	Civ Pte
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Basic
Provider	Benson Zone	Benson Zone
Altitude/FL	1200ft	1500ft
Transponder	A, C, S	A, C
Reported		
Colours	Red	Red
Lighting	HISL, nav	Strobes, position
Conditions	VMC	VMC
Visibility	40km	15km
Altitude/FL	1200ft	1300ft
Altimeter	QNH (988hPa)	QNH (NK hPa)
Heading	020°	155°
Speed	120kt	110kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	200ft V/0m H	Seen after CPA
Recorded	300ft V/0.1nm H	



THE EC135 PILOT reports conducting the last of four very similar sorties flown that day in support of the NPAS unit based at RAF Benson. It was an identical route to the previous three, from RAF Benson to operate around their northern MATZ stub for approximately 40min before carrying out a task overhead Oxford. After departing the Benson RW19LH circuit at the end of the downwind leg, the pilot was directed to free-call Benson Zone for a service. He called and was given a Basic Service. Very shortly after the completion of the radio call the pilot was startled by the appearance of a Red R44 which passed directly overhead at an assessed separation of about 200ft. The pilot felt that the late sighting was partly due to the fact that the R44 was flying out of sun. The pilot noted that he had not been notified of any traffic crossing the MATZ either during his radio transmissions with Tower or the initial call to Zone, so was not looking specifically for aircraft coming out of the MATZ. He immediately reported an Airprox to the Zone controller and asked whether the R44 was under their control. The controller confirmed its pilot was in receipt of a Basic Service and was flying at a verified 1400ft.

He assessed the risk of collision as 'High'.

THE R44 PILOT reports that he was flying at a level cruise altitude of 1300ft. He had contacted Benson Zone and received MATZ penetration clearance to fly through the eastern side of the MATZ. Visibility to the right was poor due to the setting sun being low in the sky. The pilot maintained a good lookout, especially to the right due to the poor visibility, and, when approximately due east of Benson, he thought he saw something very briefly in the far right of his peripheral vision. He looked carefully around to the left and right and soon after saw a red EC135 helicopter appear on the left side, behind and below him and heading in an easterly direction. The pilot next heard the pilot of that aircraft report the incident to Benson over the radio. The Benson controller did not pass Traffic Information so neither of the helicopter pilots were looking for specific traffic in the area.

He assessed the risk of collision as 'Medium'.

THE BENSON ZONE CONTROLLER reports that he had 2 pilots on frequency, each in receipt of a Basic Service. The EC135 had just departed Benson and the R44 was transiting the MATZ, maintaining 3nm north and east of the Benson overhead to remain outside the ATZ. A third pilot called, southeast of Benson by approximately 9 miles, for a MATZ crossing. The controller initially believed this to be a request for a Basic Service but the pilot requested a Traffic Service; the aircraft was identified and a Traffic Service provided, along with a MATZ transit. He passed Traffic Information on both Basic Service aircraft to the Traffic Service aircraft, prioritising that aircraft over the Basic Service aircraft. After scanning the radar screen he noticed the EC135 SSR transponder Mode C had 'dropped off'. As it reappeared, he became aware of the proximity of the R44 to the EC135 and passed Traffic Information on it to the EC135 pilot. The EC135 pilot responded by advising he was visual with the R44 and that he wanted to report an Airprox. The controller believed he called the R44 as '12 o'clock 1/2 a mile, crossing left-right ahead'. Traffic Information on the EC135 was not passed to the R44 pilot due to the lack of time available after the confliction became apparent.

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

THE BENSON SUPERVISOR reports that he did not have a headset on at the time of the Airprox and so did not hear the incident. The Zone controller informed him of the Airprox immediately after it occurred and the Supervisor asked the Zone controller to confirm with the EC135 pilot that he was happy to discuss details on the ground. After that transmission, the Supervisor arranged a break for the Zone controller so that he could formulate the narrative for the occurrence report.

Factual Background

The weather at Benson was recorded as follows:

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METAR EGUB 141450Z 23012KT 9999 FEW030 05/01 Q0988 BLU NOSIG=
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Analysis and Investigation

Military ATM

An Airprox occurred on 14 Nov 17 at approximately 1515hrs UTC, 4nm NE of RAF Benson, between an EC135 and an R44. The EC135 pilot was receiving a Basic Service from the Benson Zone Controller while conducting a VFR departure to the east, and the R44 pilot was receiving a Basic Service from the same controller while in transit eastbound through the Benson MATZ. Radar replay pictures are taken from NATS Ltd radar feeds and therefore are not representative of the actual radar picture seen by the Benson Zone controller at the time. The EC135 displays SSR code 3607 and the R44 displays code 3603.

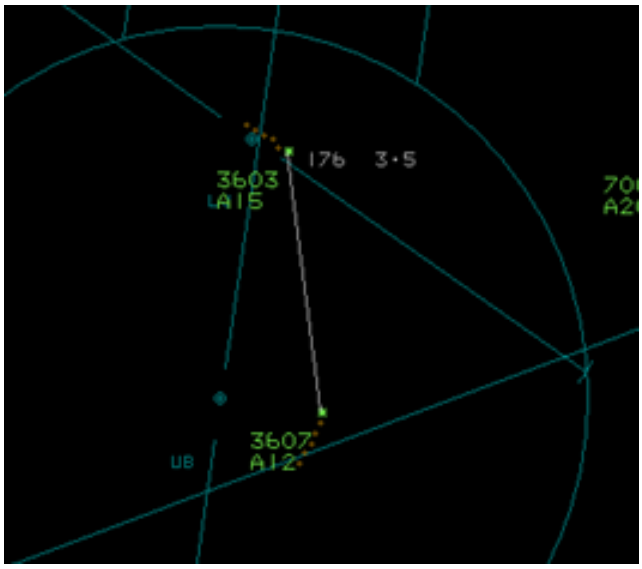


Figure 1: Geometry at 15:13:06

At 15:13:06 (Figure 1), the EC135 pilot first contacted the Benson Zone Controller during his end of downwind leg departure, requesting a Basic Service.

At 15:13: 27 (Figure 2), the Benson Zone Controller acknowledged the EC135 pilot's transmission of current altitude (1200ft).

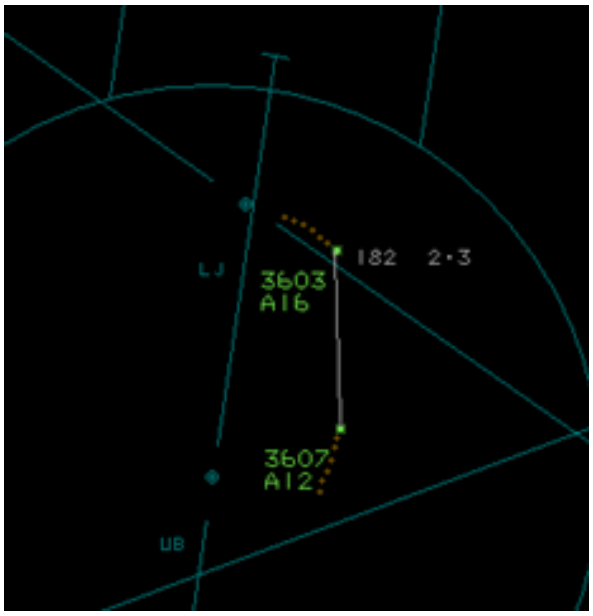


Figure 2: Geometry at 15:13:27

At 15:13:32 (Figure 3), the Benson Zone Controller passed Traffic Information on the R44 to another aircraft (squawk 3604) crossing the MATZ and receiving a Traffic Service. The pilot acknowledged the Traffic Information at 15:13:40.

Figure 3: Geometry at 15:13:32

At 15:14:12 (Figure 4), The Benson Zone Controller passed Traffic Information on the R44 to the EC135 pilot as '12 o'clock, half a mile, crossing left right ahead, indicating 300ft above'. The EC135 pilot responded that he had seen the R44 fly over him and declared an Airprox. Traffic Information was not passed to the R44 pilot.

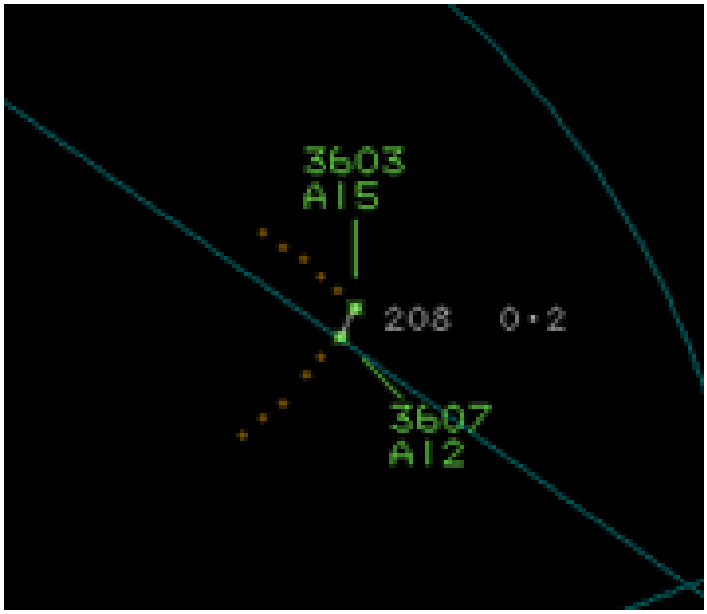


Figure 4: Geometry at 15:14:12

At the time of the Airprox, the Benson Zone Controller had three aircraft on frequency, consisting of the two Basic Service aircraft involved in the Airprox and another light-aircraft receiving a Traffic Service, with a perceived medium workload. The controller had passed timely Traffic Information on the EC135 and the R44 to the aircraft receiving a Traffic Service.

The flight profiles of the EC135 (end of downwind leg departure from RW19 at altitude 1200ft) and the R44 (crossing the Benson MATZ west to east at altitude 1400ft) always had the potential for confliction. The controller reported that the EC135's Mode C had dropped off the radar display, thus he only became aware of the close proximity at late notice when the Mode C reappeared, at which time Traffic Information was passed to the EC135 pilot. By the time the EC135 pilot had responded, the aircraft were diverging, therefore Traffic Information was not passed to the R44 pilot.

CAP 774 states that, if a controller considers that a definite risk of collision exists, a warning shall be issued to the pilot. In this case, the controller did pass Traffic Information to the EC135 when he realised that there was risk of collision; however, as the controller knew the altitude of each aircraft, meaning that they had 200ft vertical separation as their tracks merged, it would have been reasonable to identify the conflict sooner and pass timely Traffic Information to each pilot. That said, under Basic Service, whether Traffic Information has been provided or not, the pilot remains responsible for collision avoidance without assistance from the controller.

UKAB Secretariat

The EC135 and R44 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard[1]. If the incident geometry is considered as converging then the R44 pilot was required to give way to the EC135[2].

Summary

An Airprox was reported when an EC135 and a R44 flew into proximity at 1514hrs on Thursday 14th December 2017 within the Benson MATZ. Both pilots were operating under VFR in VMC, both in receipt of a Basic Service from Benson Zone.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, a transcript of the relevant R/T frequency, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC authority.

The Board quickly agreed that both pilots were operating in Class G airspace, each in receipt of a Basic Service from the Benson Zone controller, but that collision avoidance responsibility rested ultimately with them. Considering the provision of the ATS, members commented that there appeared to be several areas of misunderstanding or assumption which had contributed to the overall outcome. Members felt that although the Benson controller had appropriately passed Traffic Information to the third aircraft, the positions of the Airprox aircraft were such that they would likely have been inside his scan in the process of estimating bearing and range for the Traffic Information and so the opportunity existed for him to assess the conflict earlier. The EC135 contact was reported as having dropped Mode C, but the pilot had been requested for and had informed the controller of his altitude less than one minute before CPA and so it was reasonable that he should have been aware of the EC135's height. In the event, the controller passed Traffic Information to the EC135 pilot only very shortly before CPA. Taking all this into account, the Board agreed with the Military ATM report assertion that, with 3 aircraft on frequency, it would have been reasonable for the controller to have recognised the conflict sooner, and to have passed timely Traffic Information to each pilot; members agreed that this lack of timely Traffic Information was contributory to the Airprox.

Members also noted that the EC135 pilot had not expected an aircraft to 'come out of the MATZ' because he had not been informed of a MATZ crosser. The military ATM advisor informed the Board that, at Benson, MATZ crossing traffic was not declared to the Tower unless it was also going to cross the ATZ. Controller members opined that this then removed the possibility of the Tower controller advising departing aircraft about MATZ-crossers outside the ATZ before they departed the circuit

[1] SERA.3205 Proximity.
[2] SERA.3210 Right-of-way (c)(2) Converging.

pattern; this did not seem to be an optimal method of operating as highlighted in this incident where the EC135 pilot had been on the Tower frequency when the R44 pilot informed Benson of his MATZ crossing and therefore had not been informed of the MATZ crosser. Once with Benson Zone, as would be expected under a Basic Service, neither pilot was informed of the presence of the other. In this respect, members commented that it was for pilots to request the service they required, and noted that flight in low-sun conditions may warrant the request of a Traffic Service. That being said, in this case, members also considered that traffic within a MATZ should be informed of each other's presence irrespective of the service provided, the airspace being a Military Air Traffic Zone.

Turning to the cause and risk, members felt that the EC135 pilot had seen the R44 with insufficient time to increase separation, and the R44 pilot had only seen the EC135 once it was behind him; effectively a non-sighting by both pilots. The Board quickly agreed therefore that safety had not been assured, and debated whether collision had been avoided by providence. After some discussion, it was agreed that the vertical separation at CPA had been such that separation had not been at the bare minimum and that it was not a case of providence alone; however, they concluded that safety had been much reduced below the norm, Category B.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Effectively a non-sighting by both pilots.

Contributory Factors: The Benson controller did not pass timely Traffic Information.

Degree of Risk: B.

Safety Barrier Assessment[3]

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

ANSP:

Situational Awareness and Action were assessed as **partially effective** because the Benson Zone controller was aware of the R44 altitude and had acknowledged the EC135 pilot's altitude report less than a minute before CPA, but did not assimilate the confliction.

Flight Crew:

Tactical Planning was assessed as **partially effective** because neither pilot elected to request a Traffic Service in the reported poor visibility in low sun conditions.

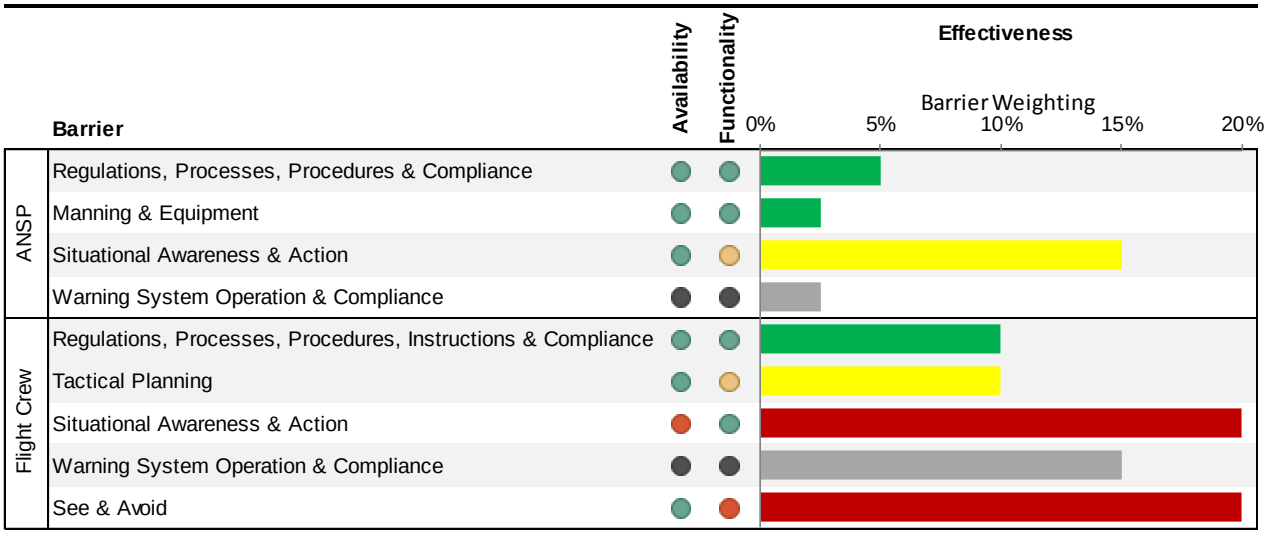
Situational Awareness and Action were assessed as **ineffective** because neither pilot was aware of the other aircraft in sufficient time to increase separation.

Warning System Operation and Compliance were assessed as **not used** because neither aircraft was fitted with a warning system.

See and Avoid were assessed as **ineffective** because neither pilot saw the other in time to take effective action to increase separation.

[3] The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the UKAB Website.

Airprox Barrier Assessment: 2017277. Outside Controlled Airspace



Key:

Availability	Fully Available	Partially Available	Not Available	Not Present
Functionality	Fully Functional	Partially Functional	Non Functional	Present but Not Used, or N/A
Effectiveness	Effective	Partially Effective	Ineffective	Not present / Not Used