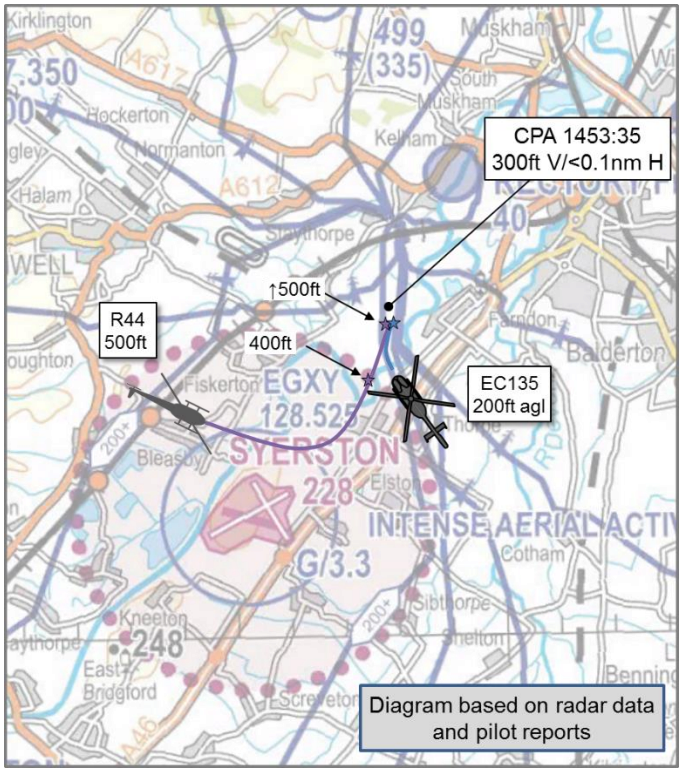
AIRPROX REPORT No 2017274

Date: 29 Nov 2017 Time: 1453Z Position: 5303N 00051W Location: Nr Syerston

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	EC135	R44
Operator	Civ Comm	Civ Comm
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Listening Out	Listening Out
Provider	Syerston	Syerston
Altitude/FL	200ft	500ft
Transponder	A, C, S	A, C
Reported		
Colours	Yellow	Yellow
Lighting	HISL, Nav, Strobes, Landing	HISL, Strobes, Nav
Conditions	VMC	VMC
Visibility	20km	20km
Altitude/FL	120ft	600-700ft
Altimeter	Rad Alt	RPS
Heading	359°	360°
Speed	28kt	90kt
ACAS/TAS	TAS	TCAS I
Alert	Information	Unknown
Separation		
Reported	300ft V/0m H	400ft V/500m H
Recorded	300ft V/<0.1nm H	



THE EC135 PILOT reports that he routinely flies to check the condition and serviceability of power-lines, and this can take place anywhere between 20 to 200ft. On this day he was following a power-line from Melton Mowbray to Newark on Trent, to the east of Syerston, at 120ft, at an average of 30kts. There are occasions along the inspection routes when there are other power-lines the same size, or higher, paralleling closely, and this was one of those occasions. They heard a pipeline aircraft, an R44, come onto the Syerston frequency and approach Syerston from the north-west to then enter the ATZ and depart south. Then another R44 (he thought) whose intentions weren't clear, also came onto the frequency [UKAB note: in fact this was the same R44]. They then saw an aircraft appear on their ACAS 300ft above and, when they looked for it, they saw it approaching from the 6 o'clock before going overhead to the 12 o'clock and doing a sharp turn to the left to go into Syerston, he thought. They were sandwiched between two power-lines and couldn't turn left or right. Going up was not an option, and there was nowhere to go except forward, or stop. Although the nature of their work is to fly low-level, there are times when they need to climb to remain clear of buildings or animals, and in such situations they would climb to 500ft at times. Therefore, he considered having a helicopter going over the top, with only 300ft clearance, was too tight. He mentioned on the frequency that it was a bit close and in future to give them 500ft, the R44 pilot apologised and commented that he hadn't seen them.

He assessed the risk of collision as 'Medium'.

THE R44 PILOT reports that he was on a pipeline patrol, approaching Syerston from the northwest. He called Syerston to pass his intentions and was informed about some gliders operating in the area. He replied that he would remain at about 500ft agl and would call clear. On approaching the A47 to the east of the field, he noticed a return on his TCAS showing an aircraft 700ft above and to the northeast. He was instructed by his observer to turn north to go to Staythorpe Substation, then pick up the pipeline and head south. On turning he noticed the TCAS return was still closing, and still showing

700ft above, which would put it at the cloud-base, which was scattered at 1200ft. He was desperately trying to see the other aircraft and was looking up at the cloud-base when the TCAS gave a warning of an aircraft 500ft above and closing, so he elected to descend further. The observer then pointed out the EC135 hovering by the pylons as the TCAS reported traffic 400ft below. The EC135 pilot then commented on the radio that he thought it had been 'a bit close there, pipeline' and he apologised. However, he didn't assess there had been any risk of collision.

He assessed the risk of collision as 'None'.

Factual Background

The weather at Cranwell was recorded as follows:

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METAR EGYD 291450Z 32015KT 9999 FEW012 04/02 Q1011 BLU TEMPO SHRA SCT012CB GRN=
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Analysis and Investigation

UKAB Secretariat

Although neither aircraft were receiving an ATS, the incident was captured by the NATS area radars. Figure 1 illustrates the geometry at 1451:39, prior to the R44 turning north, both the R44 and the EC135 are squawking 0036, a squawk assigned to pipeline inspections. It is likely that the aircraft squawking 2612 and indicating 1200ft is the aircraft that the R44 reported seeing on his TCAS at 700ft above because there are no other aircraft in the area at that level. Figure 2 shows the R44 turning northbound, and CPA is at 1453:35 (Figure 3) with the aircraft coincident.

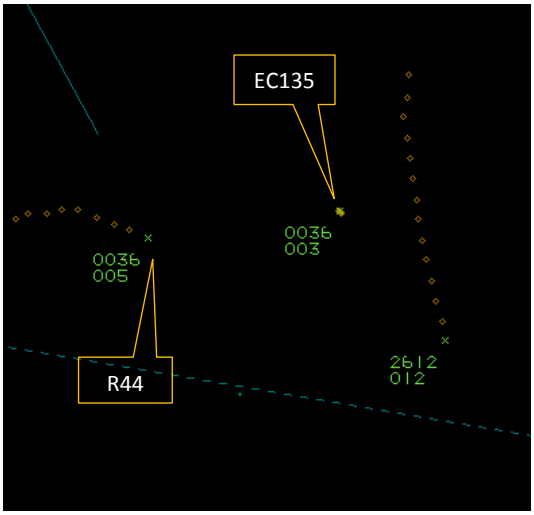


Figure 1: 1451:39

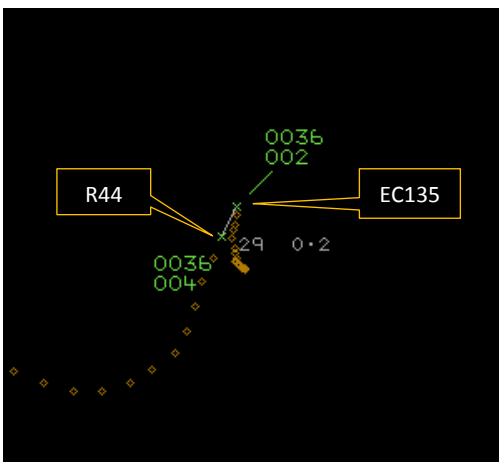


Figure 2: 1453:19

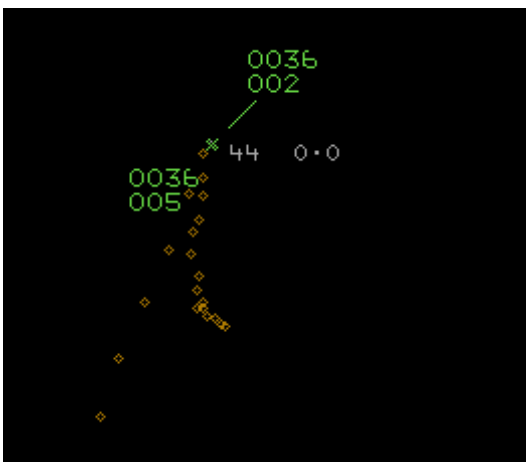


Figure 3:1453:35

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 overtaking then the EC135 pilot had right of way and the R44 pilot was required to keep out of the way of the other aircraft by altering course to the right[2].

Summary

An Airprox was reported when an EC135 and a R44 flew into proximity at 1453hrs on Wednesday 29th November 2017. Both pilots were operating under VFR in VMC, neither in receipt of an ATS. The EC135 was conducting a power-line survey, and the R44 a pipeline survey.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both aircraft and radar photographs/video recordings.

The Board first looked at the actions of the EC135 pilot. He was listening out on the Syerston frequency, and had heard the R44 initial call stating his intentions (albeit with some confusion in his mind because he had thought that there was another R44 in the vicinity). It was not clear to the Board whether the EC135 pilot was simply listening out on the Syerston frequency or whether he had been in prior communication with the Syerston A/G operator. If the latter then members debated whether the Syerston A/G operator could have warned the EC135 pilot and the R44 pilot about each other (albeit he was not required to do so because both aircraft were at that time outside the ATZ). Even if the EC135 pilot had been in previous communication with the A/G operator, members thought that, on hearing the R44 pilot's initial call, the EC135 pilot could usefully have called the R44 pilot to tell him where he was operating given that they were both in the same general area. Helicopter members commented that when operating in close proximity to pylons on such tasks, the EC135 pilot would want the option to climb quickly if there was any sort of engine malfunction, hence his concern when the R44 passed close overhead. Fortunately, he was alerted by his ACAS that the R44 was approaching from behind, and so was able to look for it and ensure he did not inadvertently climb into it.

The Board then turned to the R44 pilot and noted that he was conducting a pipeline inspection and had called on the Syerston frequency to give them his intentions. Other than being given information on gliders in the area by the A/G operator, the R44 pilot unfortunately had no knowledge of the EC135. He had reported that he was concerned by a TCAS contact that he could see was 700ft above (as shown on the radar screen-shots). Once he had turned to the north, the R44 pilot became visual with the EC135 and judged that 300ft was sufficient separation to go over the top, allowing him to continue with his own tasking. Members debated whether 300ft was indeed sufficient, and some wondered why the R44 pilot had not either turned to avoid the EC135 or slowed down to avoid going over the top. It seemed that the R44 pilot may have become task-focussed at this point, and had pressed on when he didn't need to.

The tasking of the two pilots was then discussed. Both had a similar job to do, and were obviously focused on following their exact routing for the pipeline and powerline inspection respectively. Although neither task had priority over the other, some members thought that because he was at a higher altitude the R44 pilot had more manoeuvrability and flexibility to give way once he had seen the EC135. Members wondered whether either of the pilots had entered their details of the Pipeline Inspection Notification System (PINS) into CADs. Although primarily intended to warn military low-level traffic about pipeline inspections, pilots are encouraged to also enter the details into CADS, it could have warned each pilot about the other's task whilst still in the planning phase. On interrogating the CADS[3] system, the Mil Low-Flying adviser was able to confirm to the Board that although the EC135 pilot had entered his flight into CADS, the R44's company had not.

[1] SERA.3205 Proximity.
[2] SERA.3210 Right-of-way (c)(3) Overtaking.
[3] CADS – Centralised Aviation Data Service, a military system for planning, deconflicting and notifying military low-flying that is also accessible by selected civilian operators such as pipeline and powerline inspections.

Turning to the cause of the Airprox, the Board quickly agreed that the R44 pilot had flown close enough to cause the EC135 pilot concern. However, in assessing the risk, there was considerable debate about whether the R44 pilot would have been able to get out of the way had the EC135 climbed unexpectedly, and whether the R44 had sufficiently respected the overtaking rule. In the end, the Board agreed that, although safety had been degraded due to the lack of margin had the EC135 climbed, because the R44 pilot was visual with the EC135 as he flew past 300ft above, there had been no risk of collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The R44 pilot flew close enough to cause the EC135 pilot concern.

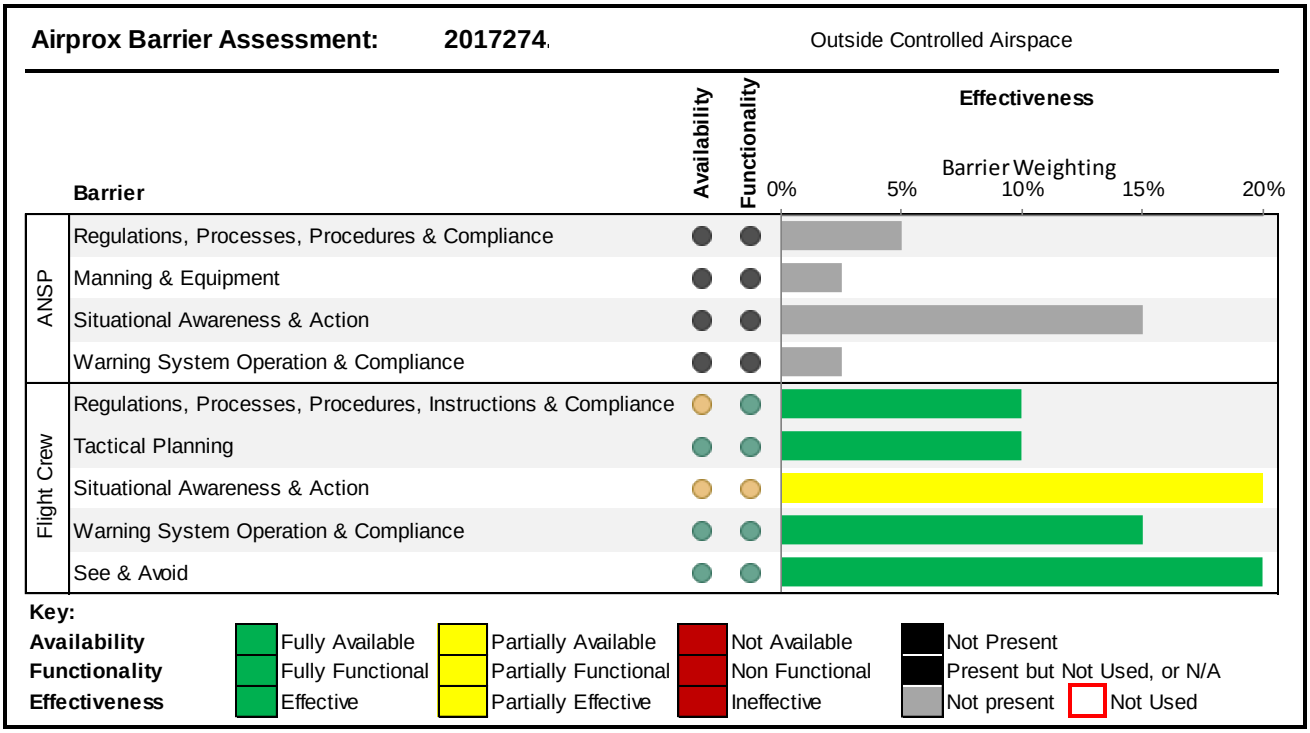
Degree of Risk: C.

Safety Barrier Assessment[4]

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

Flight Crew:

Situational Awareness and Action were assessed as **partially effective** because the R44 pilot had only generic TCAS information about the EC135 as turned towards it from behind.



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