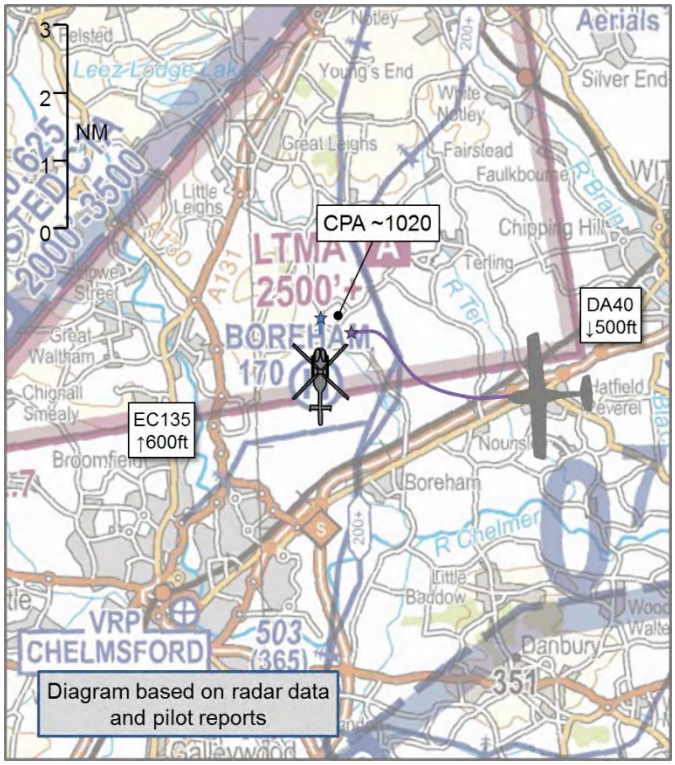
AIRPROX REPORT No 2018105

Date: 02 Jun 2018 Time: 1020Z Position: 5146N 00031E Location: Boreham airfield

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	EC135	DA40
Operator	NPAS	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	Basic
Provider		Southend
Altitude/FL	NK	NK
Transponder	A, C, S	A, C, S
Reported		
Colours	Blue/Yellow	
Lighting	Strobes, HISLs	Strobes, Nav
Conditions	VMC	VMC
Visibility	>10km	10km
Altitude/FL	350ft	800ft
Altimeter	QNH (1018hPa)	QNH (1019hPa)
Heading	010°	230°
Speed	55	88kt
ACAS/TAS	TCAS I	Not fitted
Alert	None	N/A
Separation		
Reported	0ft V/0.5nm H	500ft V/1nm H
Recorded	NK	



THE EC135 PILOT reports that they were tasked to go to Cambridgeshire to conduct a missing person search. They departed from Boreham airfield, manoeuvring on the airfield first, before taking up a northerly heading and starting to climb. The TCAS indicated an aircraft to their right, 400ft above and descending. At 200ft agl, they saw the other aircraft which was level with them as they passed 3-400ft. At this point it was heading towards them, but slowly turning left away from them. By maintaining heading and climb they were satisfied that they were clear of any threat and the other aircraft continued in a southerly direction. The EC135 pilot called Southend and reported the incident before continuing on task.

He assessed the risk of collision as 'Medium'.

THE DA40 PILOT reports that they were conducting student training and general handling exercises near 'Boreham disused airfield', including PFLs. Without warning or radio contact they saw a helicopter take-off in their 1o'clock and depart to the north-east. The PFL was aborted and they changed course to the south-west, turning away from the other aircraft which was now heading north, 1-2nm away from them. In his opinion there was no Airprox, at the closest point the two aircraft were 0.8-1nm apart and they had been visual throughout. Even without course correction they would have passed well clear behind the helicopter, but they chose to climb and turn away. They were receiving a Basic Service from Southend on 130.775 and had announced their intention to PFL east of Boreham on that frequency, if the other pilot had been listening out they would have heard the call and could have radioed their intention to take-off. He believed that the helicopter pilot did not have sufficient situational awareness or visual contact with the DA40 and may have been led to believe there was an Airprox because of his TCAS annunciation.

He assessed the risk of collision as 'None'.

THE SOUTHEND CONTROLLER reports that he was providing a Basic Service to the DA40 on a local flight. At about 1020 he announced that he was going to conduct a PFL at Boreham, which is 14nm NNW of Southend in Class G airspace. His primary contact was lost from radar at about 900ft. Two minutes later he had climbed away, tracking south. At 1022 the pilot of a EC135 reported on frequency having just lifted, he immediately enquired about any aircraft in his vicinity because he wanted to report an Airprox. The controller advised that the DA40 had just conducted a PFL in his vicinity and the two pilots had a brief exchange on the RT, when the DA40 pilot explained that he had seen the EC135 and that there had been no problem.

Factual Background

The weather at Stansted was recorded as follows:

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METAR EGSS 020950Z AUTO 25007KT 9999 BKN011 OVC017 17/15 Q1018=
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Analysis and Investigation

CAA ATSI

The DA40 had been carrying out general handing to the north of the Southend Control Zone and at 1018hrs the pilot advised the Southend Radar controller that they were routing to Boreham to carry out a PFL. The controller acknowledged this information and carried on vectoring a number of aircraft inbound to Southend.

The EC135 pilot was climbing out of Boreham and called the Southend radar controller at 1021. They were told to standby while the controller completed vectoring of an aircraft onto the ILS at Southend. The controller subsequently called the EC135 pilot and the pilot asked if the controller had been working any fixed-wing traffic in the vicinity of Boreham. The controller confirmed that they had been working an aircraft who had planned to conduct a PFL at Boreham. The DA40 pilot then came on frequency and spoke to the EC135 pilot, confirming that they were the aircraft concerned and that they saw the EC135. The EC135 pilot advised the DA40 pilot that they felt that an Airprox had occurred and that they would be filing a report.

The following radar replay snapshots are included to illustrate the developing situation. CPA could not be determined due to the EC135 not appearing on the radar replay until 1019:43, when the aircraft had already passed each other and the EC135 had climbed through the level of the DA40. At the point where the EC135 appeared on the radar the aircraft were separated by 0.4nm laterally, and 100ft vertically.

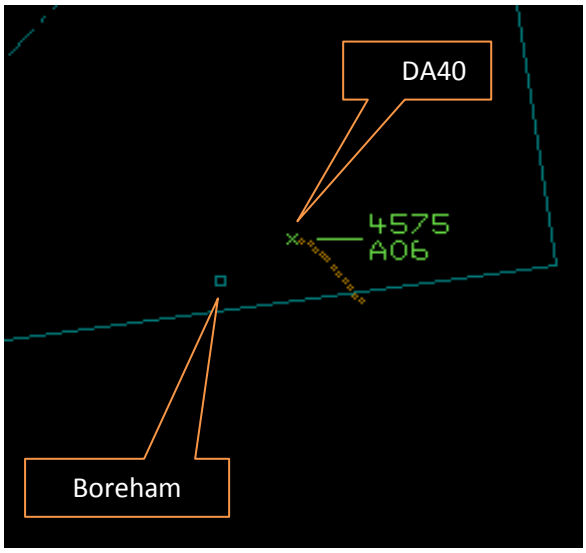


Figure 1-1019:30

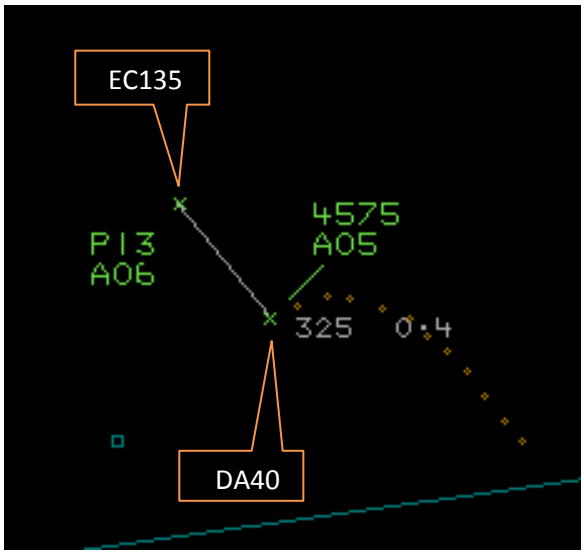


Figure 2-1019.43
(as the EC135 first appeared on radar)

The Southend radar controller could not have been expected to know that the EC135 was lifting from Boreham. Under the terms of a 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 DA40 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 EC135 pilot was required to give way to the DA40[2]. An aircraft operated on or in the vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in operation[3].

Comments

NPAS

Depending on the location of NPAS bases it is not always possible to call prior to lifting; any subsequent call will then depend on the aircraft's routeing. Aircraft taking off are particularly vulnerable as they do not have full visibility of the airspace around them. While not given any formal protection or absolution from the requirements of SERA, this is why NPAS bases are marked with an H on ¼ and ½ mil charts in order to raise awareness in other airspace users.

Summary

An Airprox was reported when an EC135 and a DA40 flew into proximity near Boreham airfield at 1020hrs on Saturday 2nd June 2018. Both pilots were operating under VFR in VMC, the EC135 pilot was not in receipt of an ATS and was lifting from Boreham. The DA40 pilot was in receipt of a Basic Service from Southend and was conducting a PFL.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both aircraft, transcripts of the relevant RT frequencies, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC operating authorities.

The Board first looked at the actions of the EC135 pilot, some members wondered whether he would have received any indications about the DA40 from his TCAS prior to lift-off and climb-out. Helicopter members said that whilst this was possible, any large buildings in the way might have blocked the TCAS signals so it was possible that the DA40 would only become fully visible on the display once he was established on climb-out. Furthermore, lift-off was a time of high cockpit workload, so even had TCAS shown the DA40, the pilot may not have noticed it until he was steady in the climb. Some members wondered whether the pilot could have called Southend prior to lifting to ask whether there was any traffic to affect, but it was not known whether Southend would have been able to hear him from ground level. Although he might have gained advantage from listening out on Southend's frequency (and therefore could potentially have heard the DA40's call about conducting PFLs), members thought that he would likely have been monitoring Essex Radar prior to departure in preparation for arranging any airspace clearances and ordinarily wouldn't have called Southend at all.

Turning to the DA40 pilot, some members thought that conducting a PFL to an airfield which was marked as active on the chart and known to have helicopters operating from it presented clear risks that had materialised in this incident. Other members familiar with Boreham noted that its use for PFL practice was common-place, and argued that the pilot would be able to see whether there were any

[1] SERA.3205 Proximity.
[2] SERA.3210 Right-of-way (c)(2) Converging.
[3] SERA.3225 Operation on and in the Vicinity of an Aerodrome.

helicopters taking off (as in this case), and modify their activities appropriately. They also believed that there were informal local agreements in place recognising such activities at Boreham, although this could not be verified and the Board felt that it was generally preferable for such agreements to be formally recorded to avoid any confusion. Members noted that Boreham's runways had now been dug up, and so it was unlikely to be widely used for PFL training activities in the future. Turning to the specifics of the incident, members noted that, having seen the EC135 climbing out, the DA40 instructor had called off the PFL and turned to the south, out of the EC135 pilot's way.

The Board briefly looked and the actions of the Southend controller and, noting that he was busy with inbounds, and that he had no way of knowing that the helicopter would be lifting from Boreham, they thought that there was little he could have done to mitigate the Airprox.

Finally the Board considered the cause of the Airprox and agreed that this incident was likely a case of one pilot seeing the other with plenty of time to assess the separation and the other being startled by the sudden appearance of an aircraft during a critical phase of flight. After some discussion, it was agreed that the incident was probably best described as the EC135 pilot being concerned by the proximity pf the DA40, with a contributory factor that the DA40 pilot was conducting a PFL near an active and promulgated helicopter operating site. In assessing the risk, it was agreed that because the DA40 pilot was visual with the EC135 and took action to increase the separation, this was a Category C incident; timely and effective actions had been taken and there had been no risk of collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The EC135 pilot was concerned by the proximity of the DA40.

Contributory Factor: The DA40 pilot was conducting a PFL near an active and promulgated helicopter operating site.

Degree of Risk: C.

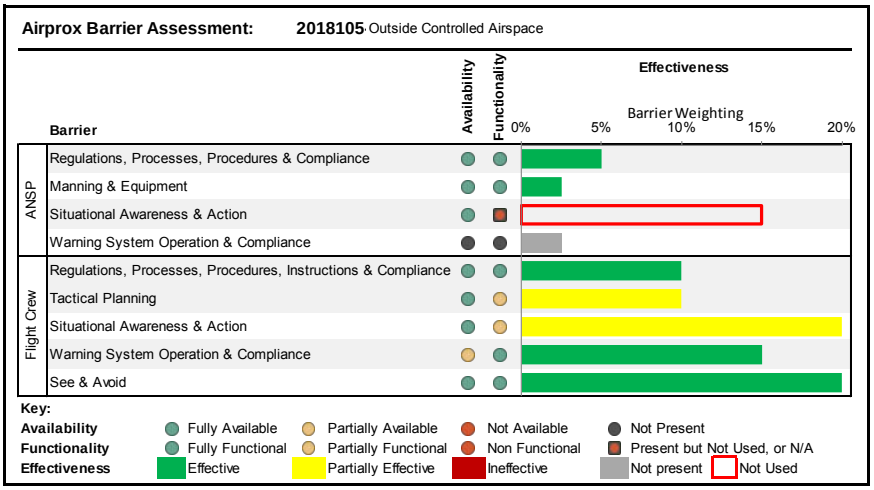
Safety Barrier Assessment[4]

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

Flight Crew:

Tactical Planning was assessed as **partially effective** because the DA40 pilot chose to conduct his PFLs close to and active Police Helicopter base.

Situational Awareness and Action were assessed as **partially effective** because it was only once airborne that the EC135 pilot assimilated the TCAS information on the DA40.



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