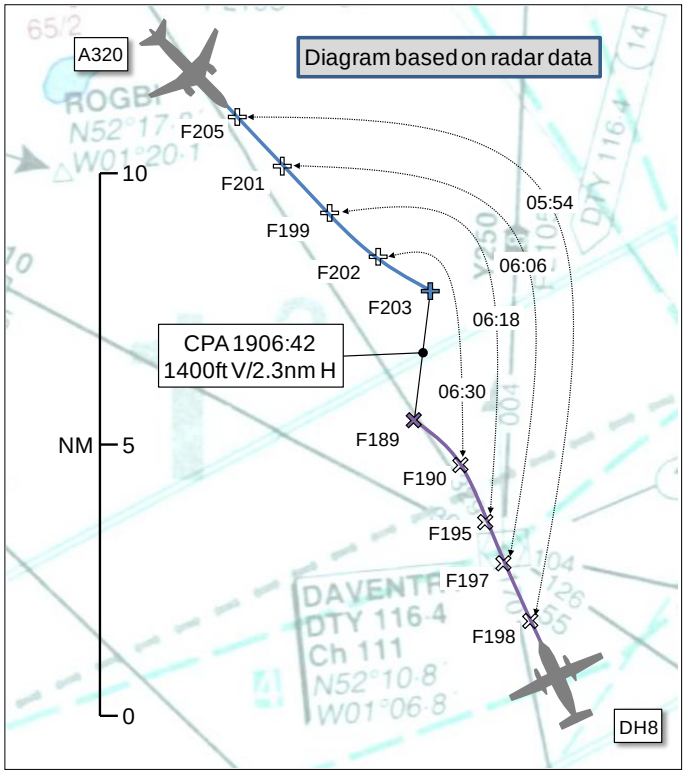
AIRPROX REPORT No 2013085

Date/Time: 22 Jul 2013 1906Z

Position: 5214N 00111W (4nm NW Daventry)

	Airspace: Daventry CTA	(*Class*: A/C)
	Reporting Ac	*Reported Ac*
Type:	A320	DH8D
Operator:	CAT	CAT
Alt/FL:	FL200	FL190
Weather:	IMC KLWD	VMC CLAC
Visibility:	Nil	10km
Reported Separation:	400ft V/2nm H	400ft V
Recorded Separation:	400ft V/6.2nm H 1400ft V/2.3nm H	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE A320 PILOT reports inbound to Heathrow (LHR), under the control of London ATC Centre. Anti-collision and navigation lights were illuminated, and SSR Modes C and S were selected. While deviating for weather, and in level flight at FL200, ATC instructed an immediate left turn for avoiding action. With Auto Pilot (AP) engaged, and turning left in response to the ATC instruction, he heard a TCAS RA climb instruction. AP and Flight Director (FD) were disengaged and a climb initiated in response to the RA. The aircraft climbed approximately 309ft and turned left 40°. From the TCAS read-out, he estimated that the other aircraft was never closer than 400ft. He did not see the other aircraft as he was in cloud and it was behind his aircraft. The other aircraft appeared suddenly on the TCAS display behind his aircraft and remained there until it disappeared from the display.

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

THE DH8D PILOT reports inbound to Birmingham (BHX). Position lights and white strobes were illuminated, the landing lights were selected off. The aircraft was cleared to FL90 on descent into BHX. There was a fair amount of CB activity at approximately 20nm SE of Honiley (HON) so the aircraft was descended at 500fpm to stay above a build-up. Passing FL195, a right turn was requested and approved to avoid a CB that was on the aircraft's track. Passing FL190 a TCAS TA was received followed closely by an RA. The AP was disengaged and the TCAS commands were followed. Concurrent with the TCAS RA, ATC gave an instruction to turn immediately onto a heading of 300° (he thought), which was carried out immediately. A similar instruction was heard to have been given to another aircraft immediately prior to this. Once clear of the conflict a report was made over the radio and clarification of any further instructions was sought.

He assessed the risk of collision as 'Low'.

THE LTC WELIN CONTROLLER reports that there was a lot of weather avoidance being carried out in his sector. He had co-ordinated the DH8D to enter Cowly's airspace from HEMEL. Because the Cowly controller had aircraft inbound to Bovingdon (BNN), he descended the DH8D to FL170 i.e. beneath all the LHR traffic in the Cowly sector. He then issued further descent to the aircraft to FL90.

When N of DTY, inbound to HON, the pilot requested a turn onto heading 335° to avoid weather. Having approved this request, he noticed that the A320 was level at FL200 and the DH8D was passing FL197 and seemed to have stopped descending. He issued an avoiding action turn onto heading 280° and the Cowly controller also gave the A320 avoiding action. Both aircraft received TCAS RAs. He reported there was no loss of separation.

THE LTC COWLY CONTROLLER reports weather avoidance was taking place. He was monitoring a trainee on TC Cowly when the A320, descending to FL200, requested a weather avoidance heading of 135°. This was approved and notified to the Welin controller who had the DH8D heading 335°, descending to FL170. A short time later the STCA flashed red when the two aircraft were about 10nm apart with the A320 level at FL200 and the DH8D observed at FL197. He took over the RTF and gave avoiding action to the A320 (left turn onto 090° degrees (he thought) and traffic information (TI) was issued). The pilot reported a TCAS RA and was seen to be climbing. The DH8D was also given avoiding action (by TC Welin) and reported a TCAS RA. There was no loss of separation.

Factual Background

Required minimum separation between the subject aircraft was 3nm horizontal and/or 1000ft vertical.

Analysis and Investigation

CAA ATSI

An Airprox was reported in Class C airspace by an Airbus A320 (A320), descending to FL200 in the vicinity of Daventry when it received a TCAS RA against a Bombardier DHC-8-402 (DH8D), which was descending into Class A airspace to FL90. ATSI had access to both pilot reports, reports from the Cowly and Welin controllers, recorded area surveillance and transcription of frequencies 121.025MHz and 130.925MHz, together with the unit report.

The A320 was operating IFR on a flight inbound to LHR, displaying SSR code 7664 and was in receipt of a Radar Control Service from the London Terminal Control (LTC) Cowly sector on frequency 121.025MHz.

The DH8D was operating an IFR flight inbound to BHX, displaying SSR code 4406 and was in receipt of a Radar Control Service from the LTC Welin sector on frequency 130.925MHz.

Training was in progress on the Cowly sector. There was a high level of Thunderstorm activity in the area which brought a high level of workload complexity for the Welin controller.
At 1900:15 the DH8D pilot contacted the Welin controller descending to FL220 heading 310° and was given descent to FL170. At 1902:15 the DH8D was given further descent to FL90.

At 1903:32 the A320 pilot contacted the Cowly controller descending to FL200 heading 135° due to weather. The Cowly controller advised Welin that the A320 was avoiding weather and the A320 pilot subsequently asked for a 5° right-turn heading 140°, which was approved by Cowly.

At 1905:13 the DH8D pilot requested a 20° right turn onto heading 335° to avoid weather which was approved by the Welin controller (Figure 1). The two aircraft were 19.2nm apart and the DH8D was 2100ft below the A320, however, the DH8D was only descending at a rate of 500fpm while the A320, descending to FL200, was descending at a rate of 2000fpm.

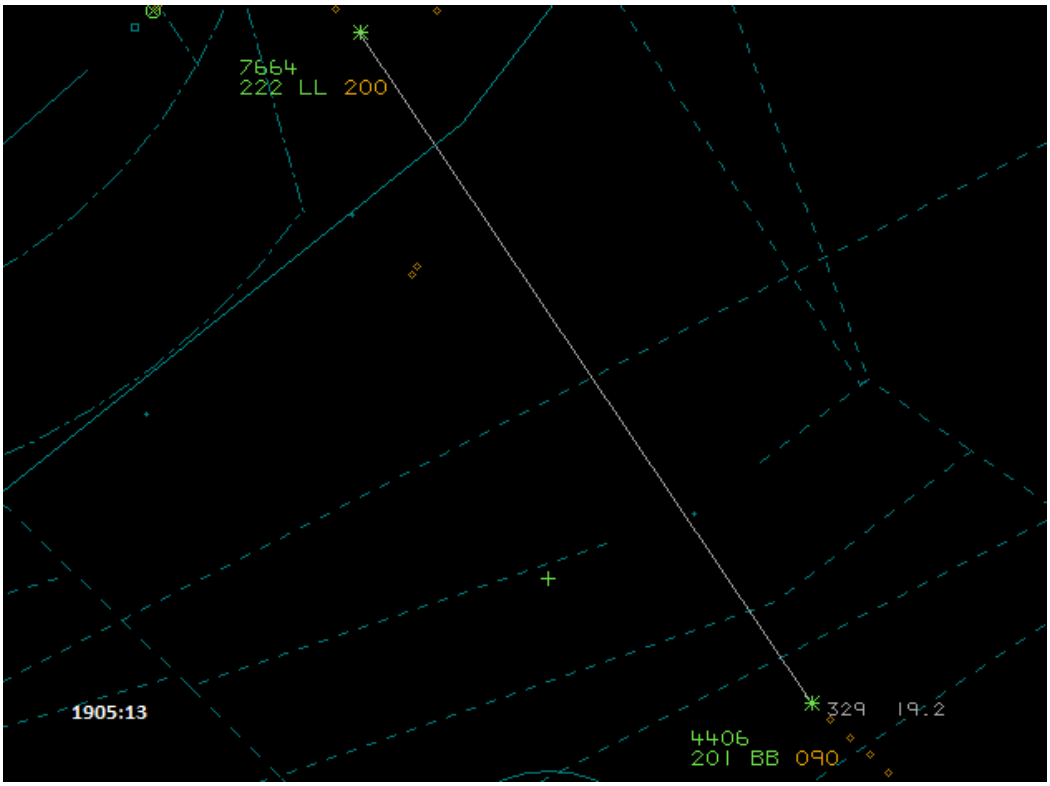


Figure 1

At 1906:00 the two aircraft were 10nm apart with the A320 descending through FL204 for FL200 and the DH8D was passing FL198 for FL90. The Welin controller instructed the DH8D to expedite descent due to traffic above. Low level STCA activated.

At 1906:05 High level STCA activated. The Cowly controller issued avoiding action to the A320 to turn left heading 095°. The Welin controller issued avoiding action to the DH8D to turn left heading 290°. At 1906:20 the A320 reported receiving a TCAS RA (Figure 2).

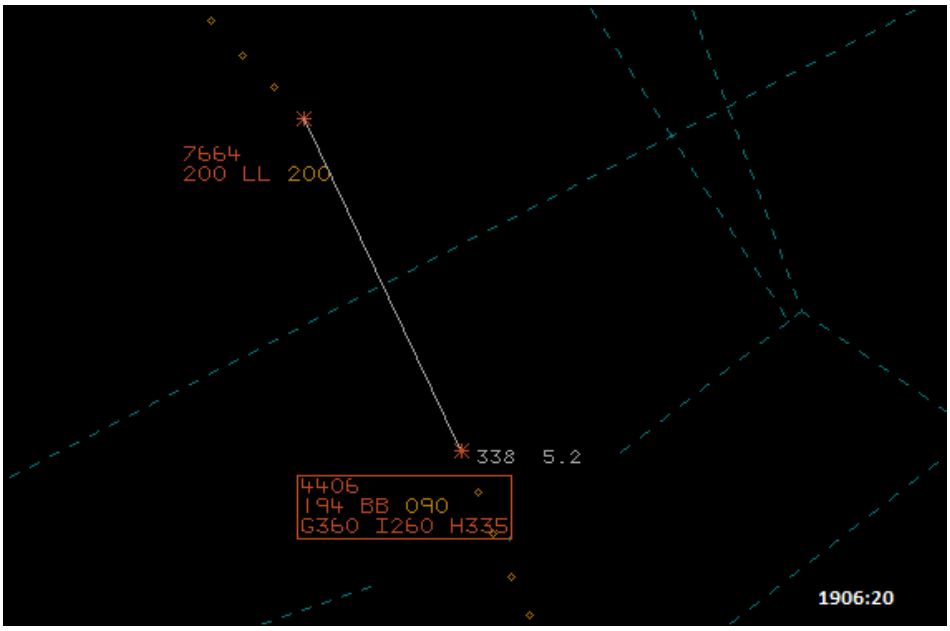


Figure 2

At 1906:22 the two aircraft were 4.1nm and 1000ft apart (Figure 3).

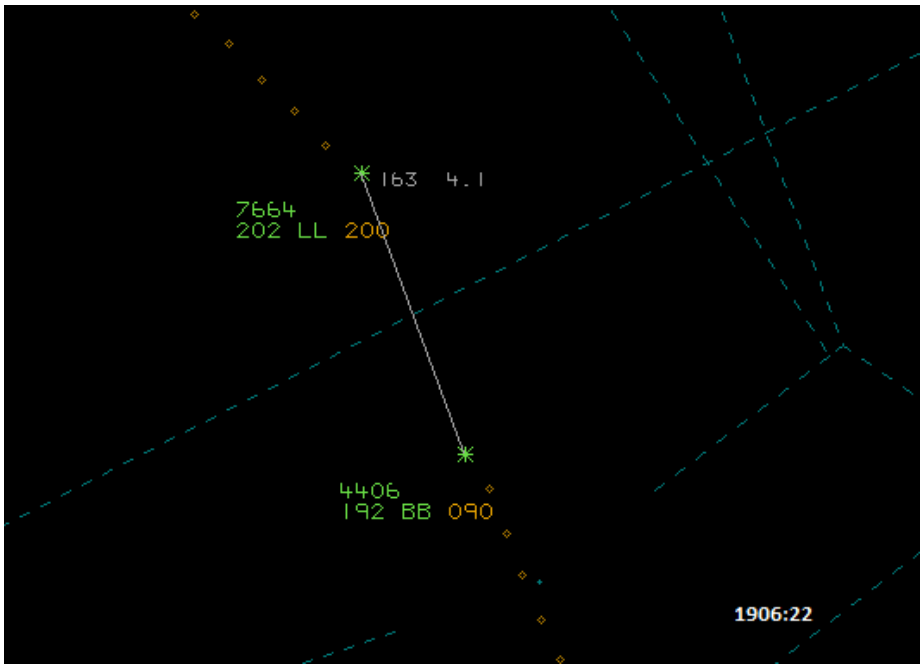


Figure 3

A high level of thunderstorm activity caused both aircraft to deviate off track to avoid weather and into closer proximity with each other. Also, due to the thunderstorm activity, the DH8D was descending at a significantly slower rate than the A320. This was not noticed by the Welin controller.

Summary

An Airprox was reported following TCAS RAs being received by an A320 and a DH8D.The TC Welin controller did not notice that the descent rate of the DH8D was significantly less than that of the A320 and the two aircraft came into closer proximity than anticipated by the Welin controller. Both the Cowly and Welin controllers issued avoiding action following low level STCA.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots and air traffic controllers involved, radar recordings, transcripts of the relevant RT frequencies and reports from the appropriate ATC and operating authorities.

The Board first considered the actions of the Welin and Cowly sector controllers. Although the Airprox occurred within the Cowly sector, the Welin controller was in control of the DH8D, having co-ordinated it into the Cowly sector. The Board noted that both controllers had reported conducting significant weather avoidance within their sectors, which increased their respective workloads considerably. However, civil ATC members commented that, in conditions when aircraft may ask for heading changes for weather avoidance, it was prudent to ensure vertical separation as the fundamental method. The Board opined that in deciding to clear the DH8D to descend through the level of the A320, the Welin controller should have been more pro-active in monitoring the DH8D's descent profile. In this respect, the clearance issued by the Welin controller was not 'fail-safe' but relied on his ability to monitor the aircraft in a busy traffic environment. One ATC member thought that the Cowly controller could have stopped the A320's descent at FL210, when the aircraft were about 19nm apart and the DH8D was passing FL201. However, the Board considered that it was the Welin controller's responsibility to ensure separation between the two flights.

Turning to the actions of the pilots, the Board noted that both aircraft were being operated in accordance with their clearances, albeit the DH8D was making a 'slow' descent at a rate of 500fpm to

stay above a cloud build-up. Notwithstanding that this is within the approved minimum descent rate[1], the Board opined that the DH8D pilot could usefully have alerted the Welin controller that he was descending more slowly than he might have otherwise expected. A Controller member commented that, in his recent experience, it is becoming more prevalent for aircraft to descend at a slower rate than previously expected, which can affect controller planning. It was pointed out that this may be due to the use of 'economy' speeds and that this might need to be factored into controllers' future strategies for sequencing aircraft in the terminal phases of their flights.

The Board decided that, even though separation was subsequently achieved through a combination of avoiding action turns, and the pilots following their respective TCAS RAs, it was the Welin controller's responsibility to ensure the fail-safe descent of his DH8D through the A320's level; therefore, the Board concluded that the cause of the Airprox was that the Welin controller allowed the DH8D to come into conflict with the A320. The Board members were unanimous in considering that the remaining safety barriers had been effective and that, in the end, there was no collision risk; they therefore agreed a risk assessment of Category C .

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The TC Welin controller allowed the DH8D to come into conflict with the A320.

Risk: C.

ERC Score:[2] 50.

[1] UK AIP ENR 1.1, Paragraph 3.2.2.4.1: Minimum Rates of Climb and Descent

[2] 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.