

AIRPROX REPORT No 2013035

Date/Time: 14 May 2013 1703Z

Position: 4956N 00333W
(28nm S of Berry Head)

Airspace: UAR UN864 (Class: C)

Reporter: LAC S6/S9/S36 (BHD)

1st Ac 2nd Ac

Type: B737 A319

Operator: CAT CAT

Alt/FL: FL360 ↑FL390

Weather: VMC CLOC NK

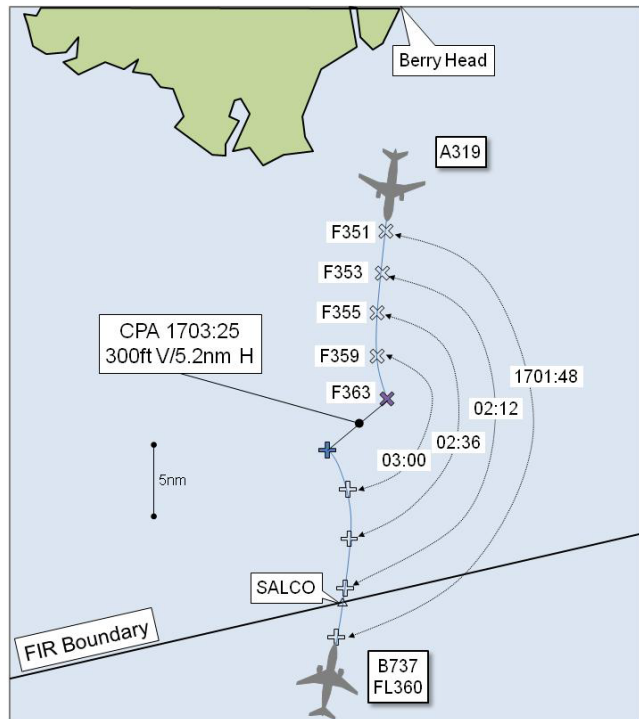
Visibility: 10nm NK

Reported Separation:

NK V/5nm H 0ft V/5nm H

Recorded Separation:

300ft V/ 5.2nm H



CONTROLLER REPORTED

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE LAC S6/S9/S36(BHD) P and T CONTROLLERS report that the southbound Bristol departure A319 was transferred to Brest ATC at FL330 in the Berry Head (BHD) area [20nm S of Exeter]. Shortly afterwards, when the northbound B737 was transferred to the Sector from Brest ATC, iFACTS¹ showed a flashing red interaction. Both controllers noticed that the A319's SFL was at FL390. P telephoned Brest immediately, whilst T issued the B737 with an avoiding action L turn heading 330°. Brest was advised of the action taken. As the L turn appeared slow, the B737 was instructed to increase rate of turn and to continue L heading 310°. TI was passed to the B737 on 2 or 3 occasions.

THE B737 PILOT reports en-route in level cruise, under IFR in VMC at FL360, with a RCS from London ATC. He was just below cloud, between layers, with flight visibility of 10km. Approaching the southern UK coastline, London ATC requested an immediate L turn (about 20-30°) to avoid an ac climbing towards him on an opposite track. At first the ac was not displayed on TCAS. Shortly after he started turning, the ac (the subject A319) appeared on TCAS and visually. ATC issued a further L turn (believed 270°). He selected 25° AOB to speed up the turn. He confirmed there was no TCAS RA warning, with the ac always showing more than 5nm away on the display. When clear of traffic he returned en-route to his destination. His assessment of risk was medium.

THE A319 PILOT reports en-route, operating under IFR under the control of Brest ATC. Beacon and strobe lights were selected on. He was in a climb passing FL280 on own navigation to DELOG [a RP on the Brest/Madrid FIR boundary, 54nm N of Santander], when ATC requested a turn. The initial message was garbled and ATC repeated the instruction to

¹ iFACTS (Interim Future Area Control Tools Support) is a set of computer based predictive tools, developed jointly by NATS Ltd, that enable trajectory prediction and pre-emptive conflict detection.

turn L 30°, which was carried out. Shortly afterwards, a TCAS TA was received on an ac above on a reciprocal track. The TA was quickly resolved and ATC cleared the A319 pilot direct to DELOG again. As far as he was aware ATC separation was not compromised as he believed the other ac was at least 5nm away. However, without the turn instruction he assessed that a TCAS RA would probably have occurred. He reported the severity as low.

Factual Background

The Airprox occurred in Class C airspace. Standard separation required is 5nm horizontal and/or 1000ft vertical.

Analysis and Investigation

CAA ATSI

CAA ATSI had access to written reports from the BHD T and P controllers and the LAC SUP, together with reports from both pilots, area radar recordings, RTF recordings and transcripts of the London Control frequency and desk-side telephone calls. ATSI also had access to the analysis of the incident conducted by Brest ACC. Further information was provided by NATS Swanwick ATSI.

At 1658:00 UTC the A319 was passing FL318, climbing to FL330, 10nm NE of BHD and was transferred to Brest Control by BHD T.

At 1658:58 the Mode S SFL of the A319 changed to FL390. At 1659:53, as the aircraft had been 'OutComm'd' (selected as being no longer in communication with that sector) in the Interim Future Area Control Tools Support (iFACTS) and had crossed the transfer of control point, the SFL of the A319 disappeared from the aircraft's data block.

At 1701:37 the B737 contacted the BHD Sector at FL360 on a reciprocal track to the A319, which was passing FL349, 30nm NNE of the B737. The climb rate of the A319 had slowed from approximately 1000fpm to 400-450fpm as the aircraft approached FL349. As the BHD T 'InComm'd' the B737 (i.e. selected it as being in communication with that sector) the separation monitor displayed a flashing red confliction against the A319 (no confliction would have been displayed by iFACTS previously as each pilot was in communication with a different ACC).

At 1701:54 the BHD T used the over-ride function to see the SFLs of all ac on the display and observed that the SFL of the A319 was FL390. 7 seconds later low-level STCA activated.

At 1702:06 the A319 and the B737 were 23.7nm and 900ft apart. The BHD T instructed the B737, "*...turn left immediately avoiding action heading three four zero degrees*".

At 1702:20 the BHD P telephoned Brest and told them that London was turning the B737 L, to which Brest replied that they were also turning L with the A319. The B737 was given TI on the A319 and at 1702:27, when the two aircraft were 17.8nm and 600ft apart, the B737 was instructed "*...turn left as much as you can radar heading three one zero degrees now*". High-level STCA activated and updated TI was passed to the B737 stating that the A319 was "*...a range of ten miles climbing passing flight level three five six*".

At 1703:20 the B737 was informed that the A319 was passing down its RHS. At 1703:25 (CPA) both ac had turned away from each other and were 5.2nm apart with the A319 300ft above the B737 (see Figure 1).

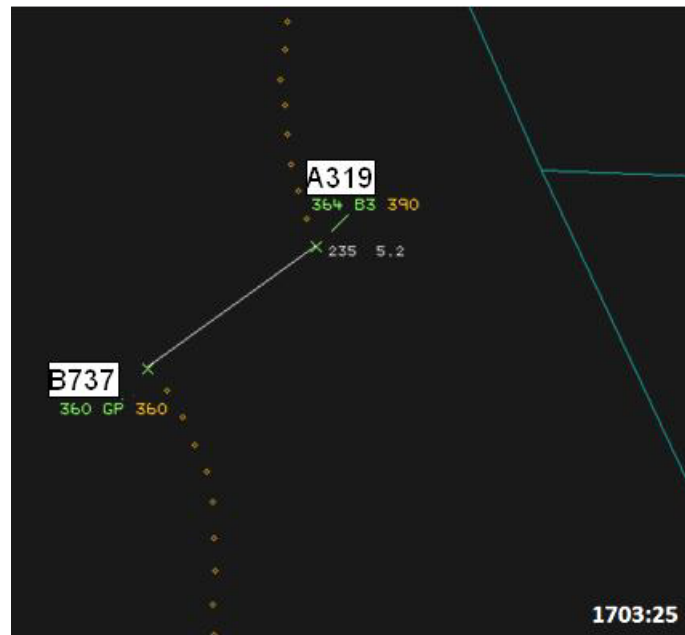


Figure 1

The report from the A319 pilot stated that, after being asked to turn L by ATC (Brest control), the crew received a TCAS TA; however, it was quickly resolved and the pilot did not believe that separation had been compromised.

The BHD T stated that although the SFL was observed to change on the A319 following transfer to Brest he did not think anything of it and became occupied with other tasks. When the B737 pilot called on frequency neither the T nor the P realised that the A319 was climbing. As the iFACTS separation monitor displayed a confliction the controllers checked the Mode S SFL and discovered that the selected level of the A319 was FL390.

Brest ACC

Brest ACC, Local Safety Commission, reports that the KW sector was manned with 2 fully qualified Air Traffic Controllers. The B737 was maintaining FL360, en route to SALCO [a RP on the London/Brest FIR boundary, 40nm S of BHD]. The A319 pilot called Brest still 8nm N of BHD, climbing to FL330. Flight plan management system CAUTRA profile for Bristol departures is London S6 -> Brest VS. This profile is designed to let Brest decide which final flight level will be allocated to these flights. This explains why S6/S9/S36 cleared the A319 to FL330 and not higher. The KW radar controller cleared the A319 to route direct to DELOG. The pilot then read back this message correctly and requested FL390 for his cruising level. In accordance with the LOA between Brest and London ACCs, the A319 was released to continue climbing to FL390 (subject Brest traffic). Flights cleared to climb to, or above, FL 310 by London S6/S36 are released for further climb by Brest, without prior coordination with S36. However, when climb clearance to FL390 was issued to the A319, the conflicting B737 was not detected by Brest ATC. A few minutes earlier, the B737, at FL360, had crossed another ac's track and was cleared to resume its own navigation direct to SALCO. Having

resolved this problem, it is possible that ATC considered the B737 would no longer be a factor to other traffic, thus overlooking its presence when issuing the climb clearance to the A319. Additionally, ATC turned its attention to two other ac, which were routing to DELOG at FL370. Approximately two minutes later, the B737 was transferred to London S36. Meanwhile, the A319 continued climbing at the approximate average rate of 1000fpm (calculated using data from replay software EPOQUES). When the two ac were about 27nm apart, the A319 leveled at FL350 for about 20sec. As soon as climb was resumed, an STCA was displayed on the radar displays.

The radar controller reacted, transmitting to the A319 pilot, “[A319 C/S] immediately turn errr...right errr 2 0 degrees, 3 0...”. The hesitation in the transmission was as a result of the P telling him to delay any action. The P was in telephone contact with London S36, discovering that S36 had turned the B737 L. After this turn co-ordination, Brest radar instructed the A319 to turn L 30°. Meanwhile, S36 had turned the B737 L 50 (at first 20°, then another 30°). Appropriate action ensured that standard separation was maintained between the two ac.

Summary

Both ac were operating in Class C airspace. At the time of the Airprox, the A319 pilot was under the control of Brest ATC and the B737 pilot was being controlled by LAC BHD sector. The southbound A319 was transferred to Brest ATC at FL330 in the BHD area. Shortly afterwards, when the northbound B737 was transferred to BHD from Brest, at FL360, iFACTS showed a flashing red interaction. The T and P noticed that the A319's SFL was FL390. P telephoned Brest immediately, whilst T issued the B737 with an avoiding action L turn. Brest was advised of the action taken and the A319 was also turned L. A further L turn was issued to the B737. TI was passed to the B737 on 2 or 3 occasions. As a result of turns given to both ac, separation was maintained. Neither ac received a TCAS RA.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both aircraft, transcripts of the relevant RT frequency, radar video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC authorities.

The Board members quickly decided that the cause of the Airprox was that Brest ATC had cleared the A319 pilot to climb through the level of the B737; Brest had admitted this was the case in their report. Discussion then took place about the operating aspects of iFACTS. Civil controller members were very concerned that when an aircraft is 'OutComm'd' i.e. no longer in communication with the sector, the Selected Flight Level (using Mode S information) of the aircraft disappears from the aircraft's data block. This, they commented, removes the ability for controllers to monitor the intended level of an aircraft, especially, as in this case, it was still within UK airspace when it was transferred to Brest ATC. The NATS advisor explained that the reason for removing an aircraft's data, after it had been transferred, was to reduce clutter on the radar display, and that there is no requirement to monitor SFLs. On this occasion, when the A319 was transferred to Brest ATC, neither of the subject aircraft were under the control of the BHD Sector. Consequently, even if the sector had been aware of the potential confliction, avoiding action could not have been taken as there was no communication possible with either aircraft. Civil controller members pointed out that if the A319's SFL had been displayed, showing the aircraft climbing to FL390 i.e. through the level of the B737, early co-ordination could have taken place with Brest to resolve the confliction. Because of the Members concern about the removal of SFL's it was agreed that a recommendation should be made to NATS Ltd to review the procedure for Mode S display near the FIR boundary. A civil airline pilot member commented that it should be made clear that other safety measures such as TCAS and Short Term Conflict Alert were

still in force to assist in preventing the possibility of a collision. In the event, iFACTS did show the confliction after the B737 had been transferred to the BHD Sector and co-ordination took place with Brest ATC regarding avoiding action issued to both aircraft resulting in standard separation being maintained with no risk of collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Brest ATC cleared the A319 pilot to climb through the B737's level.

Degree of Risk: C.

Recommendation: NATS Ltd review the procedure for Mode S display near the FIR boundary.

ERC Score: 50²

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.