

AIRPROX REPORT No 2010164

Date/Time: 21 Oct 2010 1320Z

Position: 5048N 00136W (9nm E
Bournemouth - elev 38ft)

Airspace: Solent CTA/LFIR (Class: D/G)

Reporting Ac Reported Ac

Type: B737-500 EV97 Eurostar

Operator: CAT Civ Club

Alt/FL: 2500ft ↓ 1500ft
(QNH) (QNH)

Weather: VMC CLOC VMC CAVOK

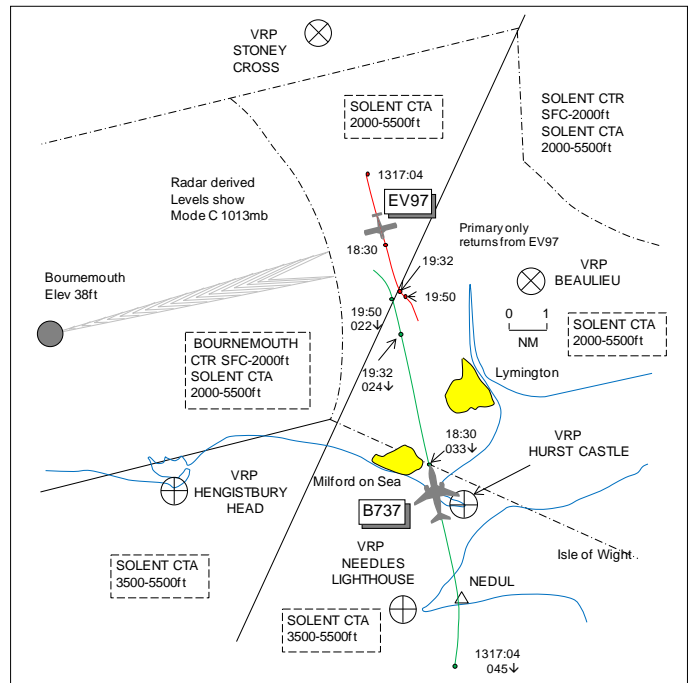
Visibility: 5nm 20nm

Reported Separation:

Nil V/3nm H 500ft V/1-2nm H

Recorded Separation:

0-4nm



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE B737 PILOT reports inbound to Bournemouth IFR and in receipt of a RCS from Bournemouth on 119.475MHz, squawking an assigned code with Modes S and C. The visibility was 5nm in VMC and the ac was coloured white/red with nav, landing and strobe lights all switched on. They were under radar vectors towards the LLZ RW26 about 10nm E of BIA, heading 350°, descending to altitude 2500ft at 210kt reducing to 180kt. They received instructions to descend to altitude 2000ft and turn L heading 290° to intercept the LLZ. On reaching over to set the new values into the MCP he saw a light ac in his 1-2 o'clock at the same level. This white coloured low-wing ac with winglets remained clear and proceeded down their RHS by about 3nm. No avoiding action was needed owing to the turn being commenced. He assessed the risk as low/medium.

THE EV97 EUROSTAR PILOT reports en-route from Popham to Bembridge VFR and listening out on Bournemouth frequency 119.475MHz; no transponder was fitted. The visibility was 20nm in CAVOK and the ac was coloured silver; no lighting fitted. He had routed via Alderbury VRP and then turned onto heading 170° at 85mph and descended from 2000ft to 1500ft QNH to be level at Stoney Cross VRP, remaining clear of CAS. He heard ATC clearing a flight inbound over the Needles from the S descending to 2500ft or 2000ft, he was unsure. As he heard this clearance he was descending to 1500ft and once over Stoney Cross he turned slightly to pass W of Lymington and E of Milford-on-Sea (both of which he could see clearly) aiming then to turn direct for the Needles, which he could also see. Near to Stoney Cross he saw a large airliner on what looked to be a reciprocal heading in his 1230 to 1 o'clock position above the horizon at a distance of approximately 10-12nm. Although not on its projected flightpath when initially seen, or anytime subsequently, and by virtue of hearing the RT exchanges and anticipating the ac would turn W towards Bournemouth, he nevertheless turned to port (probably about 45°) to put additional lateral distance between them as a simple response to seeing another ac. The airliner continued to descend, presumably to its cleared height of 2000 or 2500ft QNH, but when he judged himself to be safely clear, he turned back onto a S'ly heading, watching the airliner pass 1-2nm clear down his starboard side and about 500ft above. He did not believe he was close enough to be a cause for concern. He accepted that he knew about and had seen the other ac for some time and recognised that it's a little different if you only see something as it's passing you; also, being a Microlight, his ac was probably not very easy to spot. He did not hear ATC offer avoiding action and/or any information on his presence. Whether or not ATC were

aware of his presence, he felt there was no cause for concern and he assessed the risk of collision as none.

THE BOURNEMOUTH APR reports carrying out OJTI duties and neither he nor his trainee was aware of the incident at the time. The B737 pilot did not report anything on frequency and waited until he contacted GMC. The pilot remarked about seeing an ac at a similar level as he was instructed to turn onto a closing heading for the ILS; at this stage of the approach the ac was at 2500ft and about 9nm from touchdown. Concerned that he had missed something, he contacted Solent Radar to see if they had any knowledge of an ac in that area but they did not. Later he viewed a radar replay and whilst the B737 was on base leg, no other ac was showing but when the B737 flight was told to turn. A non-squawking contact paints just to its E and then continues to track intermittently to the SE. He opined that had anything been seen on radar before this time he would have deemed the ac to be below the base of CAS (2000ft). It is common for light ac to transit in that area between Southampton and Bournemouth CTRs.

ATSI reports that the Airprox occurred at 1319:47, 9.3nm to the E of Bournemouth Airport, the B737 is within the Solent Control Area (CTA), which extends from altitude 2000ft to 5500ft.

The Airprox was reported by the pilot of a Boeing 737, inbound IFR to Bournemouth Airport from Faro. The B737 routed via airway Q41 and reporting point NEDUL, which is situated 124° at 13nm from the Bournemouth BIA NDB. The B737 was released to Bournemouth Radar in the descent to altitude 5000ft and instructed by London Area Control (Swanwick) Sector 21 to leave NEDUL on a heading of 350°.

The EV97 Eurostar was a VFR flight from Popham to Bembridge and the pilot's written report indicated an intention to underfly the Solent CTA at an altitude of 1500ft routeing via Alderbury, Stoney Cross, West of Lymington and E of Milford on Sea. This route would keep the ac approximately 9.5nm E of Bournemouth airport and E of the Bournemouth CTR, which extends from the surface to an altitude of 2000ft.

The Bournemouth Radar controller together with a trainee, was providing an Approach Control Service with the aid of the Bournemouth, 10cm primary and SSR radar systems. The Bournemouth MATS Part 2 refers to known areas of poor radar performance NE of the airfield, outside the CTR, N of VRP Stoney Cross, in the sector 020° to 040°.

Bournemouth METAR EGGH 211250Z 26007KT CAVOK 12/02 Q1024=

The B737 flight was in receipt of a RCS. At 1316:20 the B737 called Bournemouth Radar in the descent to altitude 5000ft, QNH1024mb, with an instruction to leave NEDUL on heading 350°. Radar acknowledged the call confirming the QNH and vectoring for ILS RW26. The B737 flight was given descent to an altitude of 4000ft and at 1316:34 advised it was 24nm from touchdown.

At 1317:05, whilst on base leg, the B737 flight was given descent to altitude 2500ft and then at 1319:34 instructed, *"(B737)c/s descend to altitude two thousand feet turn left heading two nine zero degrees closing the localiser from the left when established on the localiser descend on the glidepath."* This was acknowledged correctly by the B737 pilot.

At 1320:46 the B737 crew reported fully established at 6nm and Radar transferred the flight to Bournemouth TWR on frequency 125.6MHz. After landing the crew of the B737 reported the incident to Bournemouth GMC.

The Bournemouth Radar controller's written report indicates that as the B737 was being vectored towards L base, no other ac was observed on the radar display. A replay of the Bournemouth radar showed an intermittent primary contact appear, just to the E of the point when the B737 was given a L turn towards the LLZ. The intermittent contact was observed tracking to the SE.

[UKAB Note (1) At 1312:42, the NATS Pease Pottage radar recording shows a primary contact in the vicinity of Stoney Cross tracking SSE'ly. This primary contact is observed to follow the intended track of the EV97 and remains E of the Bournemouth CTR. When Bournemouth, at 1317:05, issued the B737 flight with descent to 2500ft, the B737 is seen descending through FL033 (3600ft QNH) with the EV97 in its 12 o'clock range 6nm. Later, at 1319:32, as Bournemouth issues the B737 flight with descent to 2000ft and a L turn towards the LLZ, separation had reduced to 1.2nm. The CPA occurs at 1319:50 as the ac pass starboard to starboard with about 0.4nm lateral separation with the B737 descending through FL022 (2500ft QNH).]

The B737 was allocated an altitude of 2500ft on base leg which provided 500ft vertical separation from any unknown traffic operating below 2000ft which is the base of the Solent CTA. The Manual of Air Traffic Services (MATS) Part 2, Section 1, Chapter 6, Page 4, Paragraph 9, states:

"..... controllers should not normally allocate a level to an aircraft which provides less than 500 feet vertical separation above the base of a control area or airway. This will provide some vertical separation from aircraft operating beneath the base of controlled airspace...."

The Bournemouth Radar controllers written report indicates that it is common for light ac to transit the base of the Solent CTA in this area and that if the primary contact had been observed, it would have been deemed to be below the base of CAS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

Members could not resolve the apparent discrepancies between the separation distances reported by both crews. The EV97 pilot reported that he had descended to 1500ft by Stoney Cross to transit beneath the Solent CTA, base level of 2000ft, and saw the B737 pass 1-2nm clear and 500ft above. If the EV97 was cruising at 1500ft altitude it should have provided 1000ft separation at the CPA. The B737 crew were undoubtedly surprised on seeing the EV97 without warning, apparently at the same level as their ac, 2500ft, about 3nm away as they were just about to commence the L turn towards the LLZ. Both crews had, in fact, overestimated the lateral separation, the radar recording shows the ac passing 0.4nm apart at the CPA. As the EV97 is a small ac, this would have given the B737 crew the impression that the ac was further away than it actually was; however, the perceived height difference could not be explained. If the B737 was already turning, it could have lead to an erroneous judgement of the EV97's position relative to the horizon, but the radar recording shows the CPA with the B737 not having commenced its turn. It is not unusual for about 500ft vertical separation to exist when IFR traffic is flying 500ft above the CAS base level whilst VFR traffic is just below CAS, the controller deeming separation to exist unless other information indicates the VFR traffic might have penetrated CAS. One Member suggested that an altimeter subscale setting error could have led to the EV97 flying at a level higher than that indicated to the pilot. As the EV97 did not carry a transponder, there was no Mode C information to corroborate the ac's altitude; the ac could fly legitimately up to an altitude just below 2000ft whilst remaining below CAS. Leaving that hypothesis aside, in the end Members agreed that on the balance of probability, this encounter had been a perceived loss of separation where the visual sightings by both crews had ensured that any risk of collision was removed.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Perceived loss of separation.

Degree of Risk: C.