

## AIRPROX REPORT No 2011144

Date/Time: 18 Oct 2011 1324Z

Position: 5047N 00155W ~2nm  
W of Bournemouth  
Airport - elev 38ft)

Airspace: Bournemouth ATZ/CTR (Class: D)

Reporting Ac      Reported Ac

Type: B737-800      Diamond DA40

Operator: CAT      Civ Club

Alt/FL: 1500ft↑      1200ft  
QNH (1013hPa)      QNH (1013hPa)

Weather: VMC      VMC NR

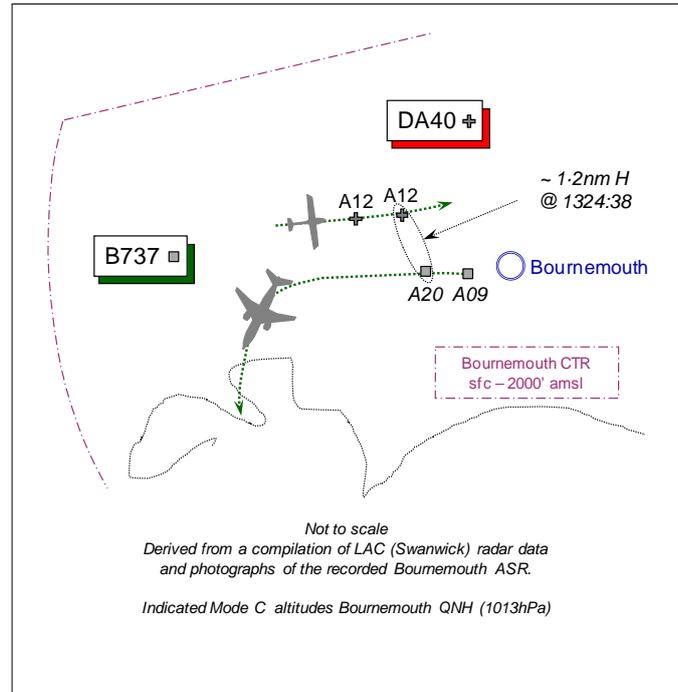
Visibility: 10km      >10km

Reported Separation:

1700ft V/1.25nm H      NK

Recorded Separation:

See ATSI report



## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

**THE B737-800 PILOT** reports that he was departing from Bournemouth Airport under IFR bound for Tenerife. TOWER cleared them for take-off from RW26 with a L turn after 'noise' for a departure to the S via THRED. After take-off, heading 270° at 170kt climbing through 1500ft QNH (1013hPa) an ac was first sighted at 2 o'clock - 2nm away and closing. No information had been passed to the crew about traffic heading their way during the initial part of the SID. It appears that the other ac – the DA40 - was in the process of arriving at the airport from the W at an altitude of about 1500ft. Minimum horizontal separation was about 1.25nm when they were climbing through 1700ft ALT and he assessed the Risk as 'medium'. Their departure required them to turn directly towards the direction this ac was coming from and climb through its level. It would have been impossible for the controller to predict with any certainty the separation that could be achieved as this would depend on their ROC and radius of turn at 0.6DME, coupled with their tracking accuracy on the 270° track.

The assigned squawk of A0306 was selected with Modes C and S on. As it turned out, TCAS only enunciated a TA during this event and they managed to spot the single-engine ac heading in the opposite direction passing their 3 o'clock position at 1.25nm exactly on TCAS. This was too close for comfort, especially as they had not been given TI as a potential conflict.

He added that the report had been filed to highlight an incident that could have easily had a worse outcome. The ac has a blue and white livery; the HISLs anti-collision lights, turn-off and fixed landing lights were all on.

**THE DIAMOND DA40 PILOT** reports he was returning to Bournemouth from the NW on completion of a local VFR training flight. A squawk of A7000 was selected with Mode C; elementary Mode S is fitted, TCAS is not.

Bournemouth ATC was informed and they were directed to join downwind RH for RW26. Proceeding as directed at 100kt, he joined the RH cct to RW26 heading 120° downwind at 1200ft QNH. As the B737 departed he was visual with it from 3nm NW of the Airport and estimated the minimum horizontal separation as about 2nm. No information was passed to him at the time and he was quite surprised that the other pilot had filed an Airprox. The first he heard of the Airprox was a couple of weeks later when his CFI told him about the incident. He assessed the Risk as 'none'.

**THE BOURNEMOUTH AERODROME CONTROLLER (ADC)** reports he was advised of the B737 pilot's written Airprox report against a light ac joining the cct from the NW VFR. At the time the Airprox occurred, he was not aware of any problem, although the radar controller made a passing comment later in the day about something non-specific relating to the B737's departure.

Having viewed the radar replay and listened to an RT recording, it is apparent that the joining DA40 was notified to him as a W join that joined the cct from the NW, and reported on the TOWER frequency as joining from the NNW. The DA40 subsequently routed to a downwind via a point somewhat to the W of the start of the downwind leg, passing around 1.2nm N of the departing B737, about 700ft below it at the closest point. He was not observing the ATM closely at the time of the encounter and did not consider it necessary to pass TI. The DA40 pilot was aware of the departing B737 as radar had passed brief TI. In retrospect, TI on the joining DA40 should have been passed to the departing B737 crew in anticipation of the possibility that the ac might join the cct close to the climb-out.

UKAB Note (1): The Bournemouth Aerodrome Traffic Zone (ATZ) is notified in the UK AIP at AD 2-EGHH-1 – 5 2.17 as a circle radius 2½nm centred on RW08/26, extending from the surface to 2000ft above the aerodrome elevation of 38ft and active H24.

**ATSI** reports that the Airprox occurred about 2nm W of Bournemouth Airport, within the Class D Bournemouth CTR. The vertical dimensions of the CTR are from the surface to 2000ft amsl. Above this, with an upper level of 5500ft amsl, is the Class D airspace of the Solent CTA.

The B737, whose pilot filed the Airprox, was outbound on an IFR flight from Bournemouth Airport to Tenerife. The DA40 was inbound to the airport from the NW, following a local VFR flight.

Both flights were under the control of the Bournemouth ADC. The ADC and Ground Movement Control (GMC) functions were combined. The ADC described his workload at the time of the incident as 'medium to low' and considered that the combining of the two operating positions was not a causal factor to the Airprox.

ATSI had access to the Bournemouth Airport surveillance radar recording.

The 1250UTC METAR for Bournemouth Airport: 28013KT 9999 FEW045 13/04 Q1013:  
The 1350UTC METAR: 27014KT 9999 FEW035 13/04 Q1013

The B737 was cleared to start and push for its flight to Tenerife at 1312. Five minutes later it was cleared to taxi to holding point 'G3', for departure from RW26.

While taxiing, the pilot was issued with his departure clearance: "*cleared to Tenerife routeing THRED QUEBEC 4-1 ORTAC climb to altitude 4 thousand feet squawk 0-3-0-6*". The clearance was read back correctly. Onward taxi clearance to 'G1' was issued at 1320.

Meanwhile, at 1317, the DA40 established communication with Bournemouth APP, requesting to, "*rejoin from the west*". The DA40 pilot was cleared to, "*join direct downwind right-hand runway 2-6 QNH 1-0-1-3 not above 2 thousand feet VFR*". After reading back the clearance the pilot was requested to report passing Newton Peveril. This village is 10nm WNW of the airport, on the western edge of the Solent CTA (2000-5500ft ALT). When the DA40 pilot reported passing Newton Peveril at 1321:08, he was cleared by APP to, "*join downwind there's two Falcons departing followed shortly by a 7-3-7*". This was the subject B737. The pilot replied, "*all copied wilco*".

Having obtained a release from Solent Radar, the Bournemouth Approach Radar Controller (APR) informed the ADC accordingly, at 1321, that the B737 could depart. At the same time, the ADC was advised by the APR about the DA40 positioning RH downwind.

At 1322:35 the DA40 was transferred to the TOWER frequency. The radar recordings show that it had just entered the Bournemouth CTR approximately 2nm S of its NW corner. At 1322:47 the DA40 pilot contacted TOWER reporting, *"inbound from the north north westish"* and was instructed to report downwind.

The B737 was cleared for take-off at 1322:58, *"a left turn out after noise clear for take-off the surface wind Two Six Zero One Five knots"*. This was acknowledged by the pilot.

As stated in the UK AIP, Page AD 2-EGHH-1-8, the applicable Noise Abatement Procedure for the B737 departing from RW26 was:

'Climb on runway QDM to 0.6 DME then track 270 degrees MAG. As soon as 3.1 DME and 2000 ft have been attained, execute a turn on track as directed by ATC'. (Runway direction 257 degrees M.)'

Approximately 1½ minutes later, at 1324:30, the B737 was transferred to the APP frequency. The Bournemouth ASR radar photograph shows that, at the time, the subject ac had not passed abeam each other. The B737, which was 2nm W of the airport, had turned R on its noise abatement procedure and was climbing through 1700ft. The DA40 was 1.5nm NW at 1100ft, tracking ESE. The radar photograph, timed at 1324:38, shows the two ac were passing abeam each other 1.2nm apart. The B737 was passing 2000ft and the DA40, which had made a L turn to track ENE, was at an altitude of 1200ft. The cct height at Bournemouth is 1200ft QFE (aerodrome elevation 38ft).

The B737 crew contacted Bournemouth APP at 1325:00, reporting passing 2400ft climbing to 4000ft. The ac was instructed to climb to FL70. After the pilot read back the clearance to FL70 he commented, *"just be advised that we did have a traffic warning with..an ac passing opposite direction on our righthand side by 1 point 2-5 miles"*. The message was acknowledged. The B737 pilot made no further comments and he was, subsequently, transferred to London CONTROL.

The DA40 made its downwind call at 1325 and was instructed to report on Final. The pilot continued in the cct to land and made no comment about the departing B737.

The Manual of Air Traffic Services (MATS) Part 1 (CAP493) Section 2, Chapter 1, Page 1, states the responsibilities of Aerodrome Control:

'Aerodrome Control is responsible for issuing information and instructions to ac under its control to achieve a safe, orderly and expeditious flow of air traffic and to assist pilots in preventing collisions between: a) ac flying in, and in the vicinity of, the ATZ; b) ac taking-off and landing.'

The Airprox occurred within Class D airspace. The MATS Part 1, Section 1 Chapter 2, Page 1, states the minimum services to be applied by ATC in different classes of airspace. For Class D:

- (a) Separate IFR flights from other IFR flights;
- (b) Pass traffic information to IFR flights on VFR flights and give traffic avoidance advice if requested;
- (c) Pass traffic information to VFR flights on IFR flights and other VFR flights.

The MATS Part 1, Section 3, Chapter 1, Page 5, states:

'Approach Control shall retain all arriving VFR flights under its jurisdiction until appropriate traffic information on IFR flights and other VFR flights has been issued and co-ordination effected with Aerodrome Control. Approach Control must ensure that VFR flights are transferred in sufficient time for Aerodrome Control to pass additional information in respect of local traffic'.

On this occasion, the APR informed the DA40 pilot when he was about 10nm from the airport about the departing B737. He co-ordinated the DA40's arrival with the ADC and transferred it as it entered

the CTR. The ADC did not issue, as is required, TI to the B737 about the DA40, either prior to, or after, its departure.

The ADC explained that as he did not believe that the subject ac would approach close to each other, he considered that it was not necessary to issue TI to the B737 crew. From his experience, ac joining RH downwind for RW26 were usually further N than the actual track of the DA40. Additionally, inbound light ac were restricted to not above 2000ft, descending to cct height of 1200ft, whereas outbound commercial jet traffic, climbing to 4000ft or higher, are quickly above this altitude.

The Bournemouth Visual Control Room (VCR) is equipped with an Aerodrome Traffic Monitor (ATM), which is situated virtually in front of the ADC. The MATS Part 1 allows controllers to use the information derived from an ATM to: 'provide information to ac on the position of other ac in the cct or carrying out an instrument approach'. The ADC confirmed that he had not looked at the ATM to establish the position of the DA40. He could not readily explain why he had not carried this out. He commented that he would normally prefer to look out of the window rather than relying on a radar display. However, he agreed that a quick look at the ATM would have shown the DA40 closer to the RW26 climb out path than anticipated. Consequently, he would have issued appropriate TI. He had not sighted the DA40 until it had joined downwind, by which time it had passed the B737, which had already been transferred to the APR.

The Noise Abatement procedures applicable to the B737 meant that, after departure, it would turn R 13° after 0.6nm DME. This meant that it was turning towards the DA40 proceeding righthand downwind.

The B737 pilot later reported sighting the DA40 in his 2 o'clock, about 2nm and closing. The DA40 pilot reported he was visual with the ac departing Bournemouth.

The Bournemouth APR complied with his responsibilities by issuing TI to the DA40 about the departing B737 and by transferring the flight in sufficient time for the ADC to issue any information in respect of local traffic as necessary.

The Bournemouth ADC did not comply with MATS Part 1 procedures i.e. he did not issue, as is required, TI to the departing B737 crew about the DA40. Had the B737 pilot been informed about the downwind traffic prior to departure, he could have decided whether or not to delay his take off. Additionally, under the terms of an ADC's responsibilities, as stated in MATS Part 1, i.e. issuing information and instructions to ac under his control, he could have instructed the DA40 pilot to widen his cct away from the departure path.

Although not suggesting that an ADC should continually monitor an ATM rather than looking out of the window, in this instance a brief observation of the display would have shown the necessity for at least issuing TI to the B737 about the DA40.

## **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 photographs and video recordings, reports from the air traffic controllers involved and the appropriate ATC authority.

Whilst the DA40 pilot had been clear in his request to APP to "*rejoin from the west*", Members noted he was somewhat vague when he made his misleading initial call to TOWER reporting that he was, "*inbound from the north north westish*". The ATSI report reflects that the DA40 pilot had actually entered the Bournemouth CTR about 2nm S of its NW corner, virtually on a steady course to enter the downwind leg for RW26. However, the ADC did not see the DA40 until after it had passed the B737 despite the co-ordination effected by APP for the DA40 pilot's downwind join from the W. The ATM is provisioned to help controllers locate A/D traffic and integrate IFR and VFR flights but the ADC did not refer to the ATM, which would have shown him that the DA40 was joining more westerly

than he might otherwise have anticipated thereby prompting TI. Plainly the ADC was required to provide TI to the B737 crew departing under IFR about the VFR DA40 flight but did not do so, which the Board agreed was a significant part of the Cause. Nevertheless, the DA40 pilot had been advised of the B737's departure by APP and spotted it when 3nm away from the Airport. With about 1½nm displacement N of the RW, there was no suggestion by the Board that the DA40 had joined too close downwind, even allowing for the B737's R turn for noise abatement. However, a pilot Member perceived that there was also an element of surprise here when the B737 crew unexpectedly saw the DA40 to starboard, which they had not been forewarned about. The B737 crew was plainly concerned about the DA40's presence and they should have been told about it beforehand. This would have allowed the PIC to decide whether to proceed or possibly delay his take-off to allow the DA40 to clear the vicinity. The Board agreed that this Airprox had resulted because, in the absence of TI from the ADC, the B737 crew was concerned to see the DA40 during their departure.

The separation evinced by the Bournemouth radar photographs, shows that the two ac passed about 1.2nm apart at the closest point. The B737 crew's first sighting of the DA40 was at a range of 2nm, with the latter's pilot sighting the B737 earlier as it took-off, clearly in his field of view. Thus the DA40 pilot was always able to take robust avoiding action if need be, which convinced the Board that no Risk of a collision had existed in these circumstances.

**PART C: ASSESSMENT OF CAUSE AND RISK**

Cause: In the absence of TI from the ADC, the B737 crew was concerned to see the DA40 during their departure.

Degree of Risk: C.