

AIRPROX REPORT No 2013050

Date/Time: 7 Jun 2013 0953Z

Position: 5310N 00031W
(RAF Waddington Visual Cct
- elevation 231ft)

Airspace: RAF Waddington ATZ (Class: G)

Reporting Ac Reported Ac

Type: Islander BN2 BE200

Operator: JHC HQ Air (Trg)

Alt/FL: 450ft 1000ft
 QFE (1014hPa) QFE (1014hPa)

Weather: VMC NK VMC NK

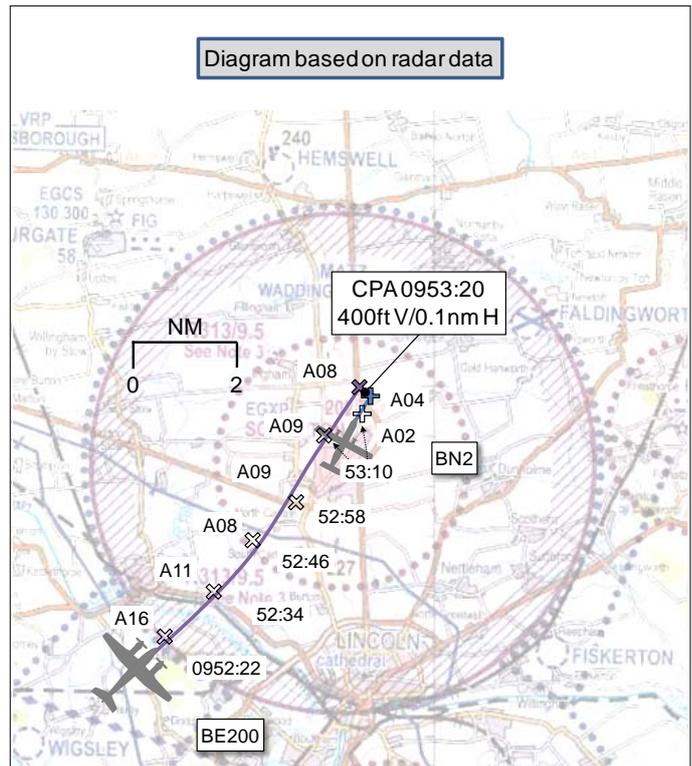
Visibility: 40km NK

Reported Separation:

 300ft V/0nm H 0ft V/0.6nm H

Recorded Separation:

 400ft V/0.1nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE BN2 PILOT reports that he had booked out for a sortie from RAF Waddington, to depart to the W, climbing to FL100. He was operating under VFR, in VMC, in communication with Waddington ADC [121.300MHz]; the agreed ATS was not reported. The grey ac had navigation, landing and strobes lights selected on, as was the SSR transponder with Modes A, C and S. The ac was not fitted with an ACAS. He was cleared to taxi to the Foxtrot hold for RW02 RH at 0945 and, when approaching the hold, saw a 'light single', believed to be a Cessna, rolling to join the visual cct. Once this ac had rolled he was cleared to line up and wait. Around this time the BE200 pilot requested, and was cleared, to join; the controller passed TI on '2 in', one upwind and 'one on'. The BN2 pilot was then cleared to take-off with the Cessna in sight. Once the BN2 was airborne, the BE200 pilot was asked if he was visual with the departing traffic (which was not specified) to which he replied 'affirm'. About this time a 'HeliMed' called ready to depart, and was cleared not above 500ft. The BE200 pilot called extending upwind to fit in with downwind traffic. As the BN2 pilot was passing about 450ft, on RW track at 75kt in the climb and beginning to look L to turn W, the BE200 passed directly overhead, crossing from the dead side to active with an estimated 300ft V separation. The BN2 crew believed separation had been lost and that a significant risk of collision had existed.

He assessed the risk of collision as 'High'.

THE BE200 PILOT reports he was the ac Captain for a cct training detail and had instructed the student to carry out a Radar-to-Initials join to Waddington for visual ccts. The blue and white ac had HISLs selected on, as was the SSR transponder with Modes A and C. The ac was fitted with TCAS. When approaching the rwy 'Initial Point', ATC advised him of 3 other ac in the cct; one light ac on crosswind/downwind, one helicopter on the ground and one BN2 to depart shortly. He assessed that the best course of action would be to extend upwind to gain separation from the light ac; this intention was transmitted to ATC. As he flew along the deadside at 220kt he could see the BN2 become airborne and decided not to configure, but to maintain speed in order to ensure suitable overtake and adequate lateral clearance on the departing traffic. Having ensured that he was sufficiently ahead of the departing BN2, and with adequate spacing to follow the light ac downwind, he initiated the turn onto downwind. He stated that the other ac were kept in sight throughout and that there was no risk of collision.

THE WADDINGTON U/T ADC CONTROLLER reports that the BE200 joined on the dead-side from a Tower-to-Tower procedure and, on passing the joining clearance, the U/T controller stated "1 in, 1 shortly for departure". As he made this call, the BN2 was taxiing and in RT contact on 121.300MHz, he believed, and the 'one in' (the Cessna), was upwind. He cleared the BN2 pilot to line up and wait, and asked the BE200 pilot if he was visual with 'the one on', to which he replied in the affirmative. The Cessna turned downwind and the U/T controller issued take-off clearance to the BN2 pilot; the ac took-off shortly afterwards. The BE200 pilot declared he was extending upwind for spacing behind the Cessna, by which time the BN2 was airborne and the U/T controller again asked if the BE200 pilot was visual with the departing traffic, which he called the position of. The BE200 pilot stated he was. The BN2 departed, turned on to a W'yly heading and continued with Waddington APR.

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

THE WADDINGTON OJTI ADC CONTROLLER reports screening a U/T controller. He was not aware of the Airprox until 0958, when the BN2 pilot declared his intention to file against the BE200 whilst departing from the visual circuit. At this point, the BN2 pilot was about to change to his en-route frequency, and was 5nm E of Syerston.

THE WADDINGTON SUP reports that although he was in the Approach Control Room (ACR), he was monitoring the ADC RTF [121.300MHz]. At 0950, the ADC controller had 4 ac on frequency: a Cessna flying visual ccts, a HeliMed on start for a VFR departure to the NE, a BN2 on taxi for a VFR departure to the W and a BE200 joining through initials. The BE200's joining instructions included the information "one in & one shortly for departure". Although the BE200 pilot did not acknowledge on the first transmission, after the BN2 pilot had been cleared to "line up & wait" the information for the BE200 pilot was transmitted again and was acknowledged. The HeliMed departed to the NE. As the Cessna turned downwind and the BE200 was joining through deadside, the BN2 pilot was given departure clearance. The BE200 pilot declared his intention to extend upwind for spacing behind the Cessna and that he was visual with the departing BN2. Neither the BE200 pilot nor the BN2 pilot stated anything regarding an Airprox, of being too close to each other, or of anything else regarding turning, climbing or descending to avoid. He was unaware of an Airprox until the BN2 pilot declared his intention to file at 0958. The SUP stated that the ATC Unit's workload was 'Medium to Low' and he assessed the ADC U/T Controller's workload as 'Medium'.

Factual Background

[UKAB Note(1): The RT transcript was recorded as follows:

From	To	Speech Transcription	Time
BN2	ADC	Waddington Ground Good morning [BN2 C/S]	0947.01
ADC	BN2	[BN2 C/S] on Ground, Good morning pass message	0947.04
BN2	ADC	[BN2 C/S], Islander 4 POB, we got Foxtrot copied looking for start, departing as briefed	0947.09
ADC	BN2	[BN2 C/S] err information Foxtrot correct, start	0947.15
BN2	ADC	Start [BN2 C/S Digits Only]	0947.17
Cessna	ADC	[Cessna C/S] downwind touch and go	0947.50
ADC	Cessna	[Cessna C/S], surface wind 070 13 knots	0948.01
HeliMed	ADC	Waddington Tower, [HeliMed C/S]	0948.13
ADC	HeliMed	[HeliMed C/S] Waddington Tower standby	0948.21
ADC	HeliMed	[HeliMed C/S] pass message	0948.51
HeliMed	ADC	[HeliMed C/S] err request start 4 POB routing 3 miles NE of Branstan	0948.57
ADC	HeliMed	[HeliMed C/S] runway 02 QFE 1017 surface wind 070 12 knots, confirm this isn't an Alpha call	0949.10

HeliMed	ADC	Cleared start 02 right hand, err it's a PR event at Branstan, negative priority and can you say QFE again please Helimed	0949.19
ADC	HeliMed	[HeliMed C/S] that's 1017	0949.20
HeliMed	ADC	1017 [HeliMed C/S]	0949.24
Cessna	ADC	[Cessna C/S] finals touch and go	0949.27
ADC	Cessna	[Cessna C/S] cleared touch and go	0949.30
Cessna	ADC	Touch and go [Cessna C/S]	0949.32
ADC	SUP	On Landline	
BN2	ADC	[BN2 C/S Digits Only] ready for taxi	0949.45
ADC	BN2	[BN2 C/S] Runway zero ...	0949.52
ADC	BN2	[BN2 C/S] runway 02 right hand QFE 1017, err taxi 02 Foxtrot hold	0949.56
BN2	ADC	Taxi 02 Foxtrot hold 02 right hand 1017 [BN2 C/S]	0949.59
ADC	BN2	[BN2 C/S] err depart as requested and when airborne continue with Waddington Approach stud 3, do you require a squawk	0950.10
BN2	ADC	Negative given the pre brief squawk and departing as requested and then stud 3 [BN2 C/S]	0950.19
ADC	BN2	[BN2 C/S]	0950.19
BN2	ADC	[BN2 C/S] to Tower	0950.28
ADC	BN2	[BN2 C/S]	0950.30
BN2	ADC	Waddington Tower Hello [BN2 C/S] ready on reaching	0950.36
ADC	BN2	[BN2 C/S] Good afternoon, correction Good morning err Waddington tower hold	0950.42
BN2	ADC	Hold [BN2 C/S Digits Only]	0950.45
BE200	ADC	Waddington Tower [BE200 C/S] request join	0951.13
ADC	BE200	[BE200 C/S] join runway 02 right hand, QFE 1017, 1 in,1 shortly to depart	0951.19
ADC	BN2	[BN2 C/S] line up and wait	0951.25
BN2	ADC	Line up and wait [BN2 C/S]	0951.27
		Garbled	0951.30
BE200	ADC	Waddington tower [BE200 C/S] how do you read	0951.31
ADC	BE200	[BE200 C/S] Waddington Tower runway 02 right hand QFE join runway 02 right hand, QFE 1017, 1 in, 1 shortly to depart	0951.39
BE200	ADC	02 1017 just through initials [BE200 C/S]	0951.45
ADC	BE200	[BE200 C/S] 1 in, up 1 upwind, 1 on	0951.48
BE200	ADC	Roger	0951.49
ADC	BN2	[BN2 C/S] cleared for take-off surface wind 070 9 knots gusting 15 knots	0951.59
BN2	ADC	Cleared for take-off [BN2 C/S]	0952.00
Cessna	ADC	Err Waddington [Cessna C/S] we'll depart VFR west after this next err touch and go	0952.10
ADC	Cessna	[Cessna C/S] roger standby	0952.16
HeliMed	ADC	[HeliMed C/S] ready for departure	0952.21
ADC	HeliMed	[HeliMed C/S] not above height 500 feet take off your discretion bay 1-0 surface wind 070 7 knots gusting err 15 knots	0952.32

HeliMed	ADC	Cleared take off not above 500 feet [HeliMed C/S]	0952.36
ADC	BE200	[BE200 C/S] are you visual with the one departing	0952.38
BE200	ADC	Affirm [BE200 C/S]	0952.40
		On Landline frequency garbled	0952.52
ADC	ALL	Station calling Waddington tower say again	0952.57
BE200	ADC	[BE200 C/S] extending upwind to slightly avoid the downwind traffic	0953.01
ADC	BE200	[BE200 C/S] roger confirm you are visual with the traffic in your left 11 o'clock	0953.07
BE200	ADC	Affirm [BE200 C/S Digits Only] we got airborne with the traffic behind us departing, is this the one you mean	0953.19
ADC	BE200	[BE200 C/S] Affirm and the erm HeliMed is just lifting 500 feet on the north eastern side of the airfield	0953.24
BE200	ADC	[BE200 C/S] copied	0953.26
Cessna	ADC	[Cessna C/S] late downwind touch and go	0953.30
ADC	Cessna	[Cessna C/S] surface wind 080 07 knots gusting 15	0953.34
BN2	ADC	[BN2 C/S] continue with Waddington Approach stud 3	0953.40]

Investigation Analysis

BM SAFETY POLICY AND ASSURANCE reports that the Airprox occurred within the visual cct at RAF Waddington (WAD) at 0953:22 on 7 Jun 13, between a BN2 Islander and a BE200 King Air, whilst WAD were operating to RW02RH. The BN2 pilot was departing the A/D and the BE200 pilot was conducting a Radar-to-Initial (R2I) join; both ac were receiving an ATS from WAD ADC.

All heights/altitudes quoted are based upon SSR Mode C from the radar replay unless otherwise stated. WAD QFE was 1017hPa, equating to approximately 120ft difference between heights reported by the aircrew and those associated with the radar replay. Ranges from WAD quoted within the report are based on the ARP; Figure 1 refers. The WAD RWY 02RH magnetic heading is 023°.

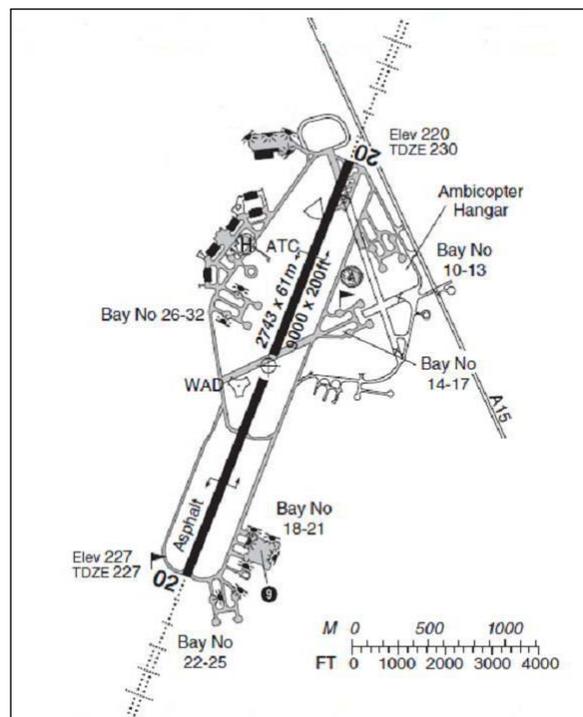


Figure 1: RAF Waddington Aerodrome Layout

Both aircrews reported VMC, with nil cloud. The WAD ADC reported moderate workload but did not assess the task complexity; they were providing ATS to 4 ac, including the BN2 and BE200.

The incident sequence commenced at 0951:13 as the BE200 pilot called ADC to “request join” and was instructed to “join runway 0-2 right hand, Q-F-E 1-0-1-7, one in, one shortly to depart.” The BE200 crew did not acknowledge or readback the joining clearance and airfield details. At this point the BE200 was 6nm SW of WAD, indicating descent through 3200ft, tracking 036°; the BN2 was at the hold, not yet airborne. Figure 2 depicts the incident geometry at this point; SSR 3A 3631 and 0020 were the unrelated ac being provided with an ATS by WAD ADC. The IP for WAD RW02RH is 4nm S and 1nm W of the RWY centre-line; at 0951:13, the BE200 was positioned 2.2nm W of the RWY centre-line.

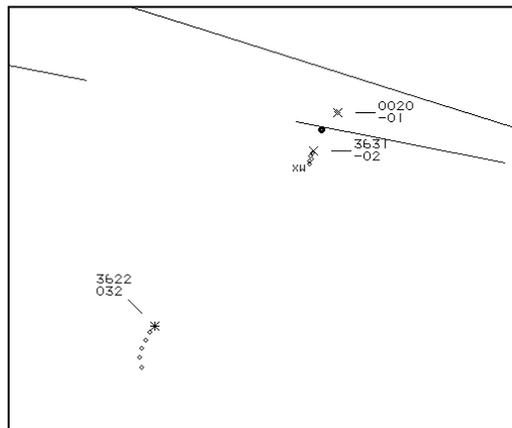


Figure 2: Incident Geometry at 0951:13.

At 0951:25, the ADC instructed the BN2 pilot to “line up and wait” which was acknowledged and, at 0951:31, the ADC returned to the BE200, asking “how do you read?” The BE200 crew did not reply and, at 0951:39, the ADC re-iterated the BE200’s joining clearance, “[BE200 C/S] Waddington Tower, runway 0-2 right hand, Q-F-E...join runway 0-2 right hand, Q-F-E 1-0-1-7, one in, one shortly to depart”. At this point, the BE200 was 4.6nm SW of WAD, indicating descent through 2400ft. The BE200 crew acknowledged the joining clearance stating “0-2, 1-0-1-7, just through initials [BE200 C/S]”. The ADC immediately replied, advising the BE200 of “one in, up...one upwind, one on” which was acknowledged.

At 0951:59, the ADC instructed the BN2 pilot, “cleared for take-off, surface wind 0-7-0, 9 knots, gusting 1-5 knots”, which was acknowledged. At this point the BE200 was 3.6nm SW of WAD and 1.4nm W of the extended RWY Centre-line, tracking 036° and indicating descent through 1900ft.

At 0952:38, the ADC asked the BE200 crew “are you visual with the one [BN2] departing?” who replied that they were. Figure 3 depicts the incident geometry, with the BE200 1.5nm SW of WAD and the BN2 not yet airborne. At this point, the BE200 had closed to 0.7nm W of the extended RWY centreline and was tracking 045°.

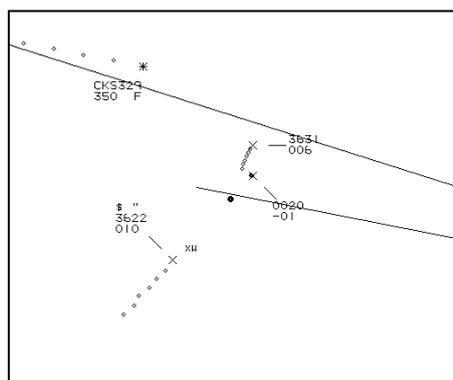


Figure 3: Incident Geometry at 0952:38.

From 0952:54, some track jitter is evident on the radar replay; however, it appears that the BE200 had manoeuvred W'ly to open their distance from the extended centreline. At 0953:01, the BE200 crew advised ADC that they were “extending upwind to slightly avoid the downwind traffic [SSR 3A 3631 in Figure 3]” which was acknowledged by the ADC at 0953:07, asking them to “confirm you are visual with the traffic [BN2] in your left 11 o'clock?” The BE200 crew replied “Affirm [BE200 C/S] we got airborne with the traffic [BN2] behind us departing, is this the one you mean?” The ADC replied in the affirmative. At 0953:09, the BE200 passed 0.3nm W of the RWY, tracking 037°. The BN2's crew related in their DASOR that they were aware of this R/T exchange between the ADC and the BE200 pilot; however, they were unaware that it related to them as the ADC had specified “one departing” rather than ‘a BN2 departing’.

The CPA occurred at 0953:20 as the BE200 passed 0.1nm down the BN2's L side, indicating 400ft above; Figure 4 depicts the incident geometry. At 0953:26, the BE200 passed 0.2nm through the BN2's 12 o'clock, breaking downwind at 0953:50, 0.8nm NE of the BN2 and co-altitude with it.

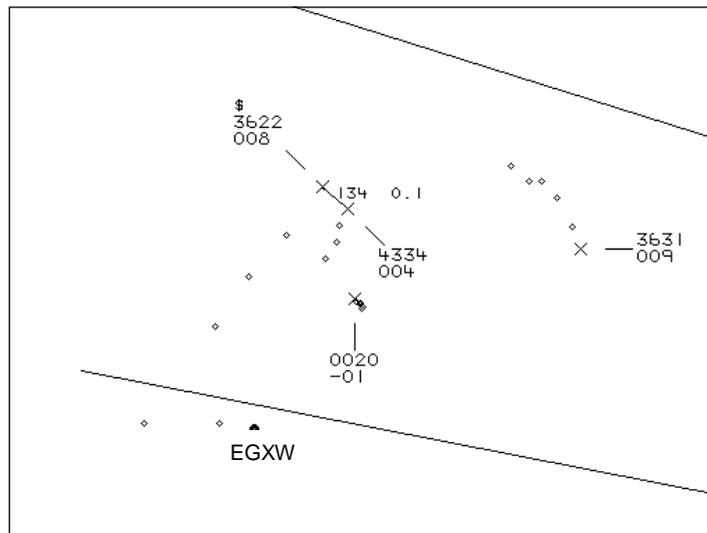


Figure 4: Incident Geometry at 0953:22.

WAD ADC correctly passed cct TI to the BE200 and checked on 2 separate occasions that the BE200 crew was visual with the departing aircraft. The BE200's crew stated in their DASOR that the BN2 was 'kept in sight throughout and there was no risk of collision'.

HQ AIR (OPS) comments that apart from the missed response to the initial join clearance and the call of ‘..left, 11 o'clock’ rather than ‘...right, 1 o'clock’, nothing abnormal occurred in this instance. The BE200 crew ensured safe lateral visual separation from the departing traffic, and passed well ahead and above the BN2's flight-path during the turn onto the downwind leg. It was kept in sight at all times and there was no risk of collision. This report is almost identical to an Airprox reported in the same location in Aug 2011. As in that case, the concern of the Islander pilot appears from the reports to be centred on the perception that the King Air was unaware of his location.

JHC comments that the BN2 pilot, concerned that the BE200 pilot was not visual with his aircraft, is fully justified in submitting an Airprox. The perception of the BN2 pilot that the BE200 was not visual, could have easily been resolved with clearer and less verbose R/T transmissions from both the ADC Controller and the BE200 pilot. If either had mentioned the type of aircraft taking off/departing in their transmissions it would have served to increase the SA of the BN2 crew, as it is clear that in this circumstance the BE200 was visual with the BN2 aircraft throughout.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available to the Board consisted of the reports from both crews, the controllers and the ATC Supervisor as well as radar recordings and RT transcripts.

The Board's initial discussion centred on the RT calls made by the ADC. Some members felt that the JHC suggestion that the inclusion of ac types in the cct joining instructions might well have improved the BN2 and BE200 pilots' overall situational awareness but not greatly given that the BE200 pilot had twice confirmed that he was visual with all the aircraft in the cct and was taking separation accordingly. The Board noted that the joining and departure clearances were transmitted in quick succession, and some members opined that the transmissions may have merged or been garbled as a result, and therefore difficult to follow. Other Members felt that the speed of transmission was normal for a busy aerodrome, and that the RT transmissions were acceptable and accurate.

It was noted by the Board that the ADC had checked twice that the BE200 pilot was visual with the BN2, and that the BN2's pilot was on the Tower frequency when ADC transmitted the joining clearance to the BE200 crew. The Board agreed that either the BN2's pilot had not heard or assimilated the joining clearance (and was therefore surprised when the BE200 appeared), or that he had heard the transmissions but was simply uncomfortable with the separation that the BE200 pilot had given him.

Notwithstanding the BN2 pilot's discomfort at the proximity of the BE200, the Board concluded that such separation was normal for a military visual circuit and that the BE200 pilot had all aircraft in sight and was avoiding them appropriately. The Board therefore allocated a Risk Grading of E to the Airprox; it met the criteria for reporting but, by analysis, it was determined that the occurrence was so benign that it would be misleading to consider it an Airprox event. Normal procedures, safety standards and parameters pertained.

The safety barriers pertinent to this Airprox were: 'ATC rules and procedures', 'controller action', 'aircrew rules and procedures', 'visual sighting', 'aircrew action' and 'situational awareness from RT'. The Board concluded that, whilst the BN2's crew had probably not gained complete situational awareness from the RT transmission, the other barriers had been 'effective' and allocated an Event Risk Classification score of 2.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The Islander pilot was concerned by the proximity of the BE200.

Degree of Risk: E.

ERC Score: 2.