## AIRPROX REPORT No 2014069

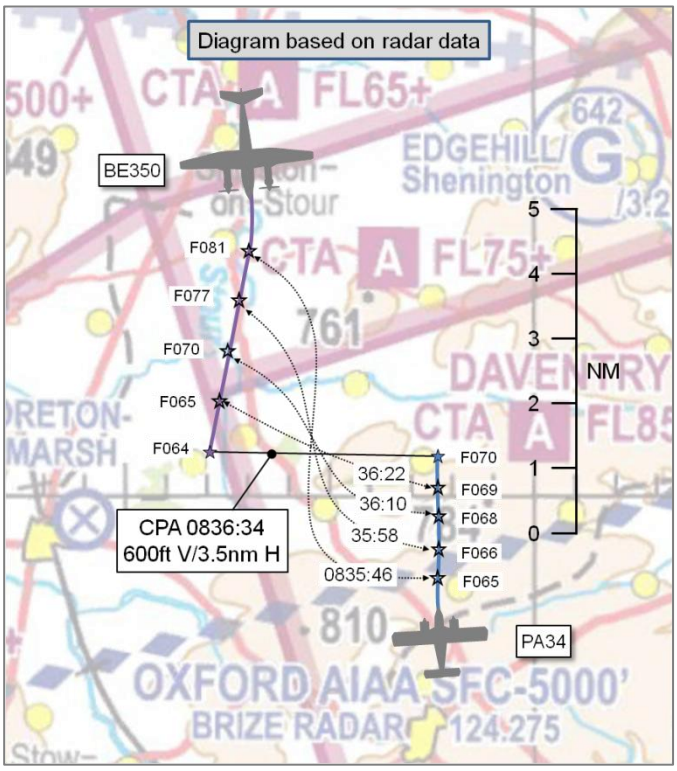
*Date/Time*: 20 May 2014 0837Z

*Position*: 5200N 00135W (Moreton-In-Marsh)

*Airspace*: London FIR (*Class*: G)

*Reporter*: Oxford Radar

| | Aircraft *1* | *Aircraft 2* |
|---|---|---|
| *Type*: | PA34 | BE350 |
| *Operator*: | Civ Trg | HQ Air (Ops) |
| *Alt/FL*: | NK | NK |
| *Conditions*: | VMC | VMC |
| *Visibility*: | 10km | NK |
| *Reported Separation*: | 2000ft V/1nm H | NK |
| *Recorded Separation*: | 800ft V/3.5nm H | |




## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

**THE OXFORD CONTROLLER** reports operating as the Radar controller (RAD) in light traffic. He was providing a traffic service to a PA34 routing IFR via MORTN to BADIM which, because Brize Norton (BZN) ATSU normally work the traffic to BADIM, was pre-noted to BZN. The PA34 was outbound to MORTN climbing to FL70 when the controller noted a 1402 squawk southbound from Birmingham with a Mode S selected-level of FL90. As this was still in CAS, he instructed the PA34 to climb to FL80, his requested cruising level. As the PA34 pilot did so, the controller noted the 1402 squawk's selected-level change to FL70, and then quickly to 2800ft, on a constant bearing toward the PA34. Because the controller did not know which unit was working the 1402 squawk, and judging that its course and descent profile would cause a collision risk, he elected to follow the Rules of the Air and turn the PA34 out of confliction. He judged that the crew of the PA34 would not have time to visually acquire the 1402 squawk with Traffic Information alone. Although the PA34 was only on a Traffic Service, the risk of collision was judged to be great enough to warrant avoiding action to break the constant bearing aspect. Had this action not been taken, the controller assessed that the blips would merge at the same level just west of MORTN. By the time he managed to ascertain which ATSU was in control of the 1402 squawk, the opportunity for meaningful coordination had passed. Following the action taken, the blips passed 2nm apart at the same level, and the captain of the PA34 eventually saw the other aircraft as it passed down the left hand side.

**THE BZN DIR CONTROLLER** reports controlling under examination from ATC STANEVAL in the Director (DIR) position when he received a BE350 on frequency under a Traffic Service on a heading of 180°. After noticing Oxford traffic [the subject PA34] he descended the BE350 to FL70 initially to allow himself time to assess the situation. After assessing the rate of climb/descent of both aircraft, he issued the BE350 a descent to 2800ft (QNH 1005hPa) to get underneath the PA34 with a heading correction of 10° to the right to increase separation from the other traffic. When the conflicting traffic was approaching 3 miles, he called the traffic as 'left 10 o'clock, 3 miles, crossing left to right, 500ft below, climbing' and, with the rates of climb/descent displayed, he assessed the aircraft would be through each other's level in good time. Oxford had already turned the PA34 away by this point. He called the traffic on two occasions and the BE350 pilot sounded like he was not concerned. At no point did the controller feel the lateral or vertical separation of either aircraft was unsafe.

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

**THE BZN SUPERVISOR** reports he was Supervisor of the watch during the period and had been asked to take a call from the Oxford RAD. Whilst they conversed, the SUP asked BZN DIR if there had been any issues with the descent of the BE350, to which he was informed that, other than a small turn correction and some Traffic Information, there was nothing to suggest a problem. Both aircraft where under the same service, had been called to each other and, with their respective predicted tracks, no threat was perceived. The SUP passed this information to the Oxford RAD. He also commented that both aircraft were in Class G airspace and that all relevant information had been passed. In addition to an experienced Approach controller, a member of the STANEVAL Team had been examining DIR and had made no comment upon any perceived threat to the Oxford departing traffic.

**THE PA34 PILOT** reports conducting an initial instrument rating test with IF screens in place. The white and blue aircraft lighting state was not reported. The SSR transponder was selected on, with Modes A, C and S; the aircraft was not fitted with ACAS or a TAS. The pilot was operating under IFR in VMC, in receipt of a Traffic Service from Oxford Radar. Airborne from Oxford en route to join controlled airspace at BADIM having been cleared to climb to FL80, the controller then instructed them to turn onto a northerly heading. This was done by the PF (the IR candidate). The controller later explained that the turn was against traffic he had observed on radar descending through their level, working another ATC unit. The pilot was given a position report on the other aircraft and managed to get a visual sighting on an aircraft that she assumed to be the conflicting traffic, in the left 7 o'clock position at a range of about 2nm, descending and heading south, presumably after CPA.

She did not make an assessment of the collision risk.

**THE BE350 PILOT** reports recovering to BZN. The white aircraft's lighting state was not reported. The aircraft was fitted with an SSR transponder (with Modes A, C and S selected) and with TCAS. The pilot was operating under VFR in VMC, in receipt of a Traffic Service from Brize Radar. The pilot stated that he was unaware of an Airprox event at the time of flight and was only made aware via email a few weeks later. He was therefore not able to report all details fully. At the time of the event he was carrying out one of three instrument approaches to RAF Brize Norton. He was not aware of any conflicting traffic and received neither a TCAS TA nor RA. No report of an Airprox being filed was passed to him through ATC after the flight.

He assessed the risk of collision as 'None'.

## Factual Background

The weather at BZN was recorded as follows:

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METAR EGVN 200850Z 18006KT 9999 SCT022 SCT070 17/11 Q1005 WHT BECMG SCT025 BLU
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A transcript of the BZN DIR RTF was provided, as follows:

| From | To | Speech Transcription | Time | Remarks |
|---|---|---|---|---|
| BE350 | DIR | Brize Approach good morning it's [BE350 C/S] in the descent flight level nine zero currently heading direct the Bravo Zulu November | 0834:17 | |
| DIR | BE350 | [BE350 C/S] Director identified descending flight level nine zero what type of service on leaving controlled airspace | 0834:23 | |
| BE350 | DIR | Traffic service [BE350 C/S] | 0834:28 | |
| DIR | BE350 | [BE350 C/S] roger | 0834:31 | |
| DIR | BE350 | [BE350 C/S] descend flight level seven zero | 0834:35 | |
| BE350 | DIR | Descend flight level seven zero [BE350 C/S] | 0834:39 | |
| DIR | BE350 | [BE350 C/S] confirm heading | 0834:42 | |
| BE350 | DIR | Eh we're currently heading one eight zero [BE350 C/S] and we're looking for vectors to the SRA | 0834:44 | |

| From | To | Speech Transcription | Time | Remarks |
|---|---|---|---|---|
| DIR | BE350 | [BE350 C/S] roger set Brize QNH one zero zero five descend to altitude two thousand eight hundred feet | 0834:55 | |
| BE350 | DIR | One zero zero five set descend to altitude two thousand eight hundred [BE350 C/S] | 0835:01 | |
| DIR | BE350 | [BE350 C/S] touchdown zone elevation two six six feet | 0835:06 | |
| BE350 | DIR | That's copied [BE350 C/S] | 0835:11 | |
| DIR | BE350 | [BE350 C/S] traffic left eleven o'clock eight miles crossing left right indicating two thousand six hundred feet above although climbing, if not visual turn right ten degrees | 0835:14 | |
| BE350 | DIR | Eh we're turning right head, eh, ten degrees to one nine zero now [BE350 C/S] | 0835:22 | |
| APP | Oxford Radar | Brize Approach | 0835:28 | Landline Call on APP consol |
| Oxford Radar | APP | Oxford Radar are you working the one four zero two North of Brize by about fifteen miles | 0835:29 | Landline Call on APP consol |
| APP | Oxford Radar | Do you want coordination? | 0835:33 | Landline Call on APP consol |
| Oxford Radar | APP | Eh well it was just against [PA34 C/S] climbing flight level eight zero you're just about to come down on top of | 0835:34 | Landline Call on APP consol |
| APP | Oxford Radar | Em, I'll speak to Director you can coordinate if you wish | 0835:39 | Landline Call on APP consol |
| Oxford Radar | APP | Ok, thank you very much | 0835:41 | Landline Call on APP consol |
| APP | Oxford Radar | Standby | 0835:42 | Landline Call on APP consol |
| DIR | BE350 | [BE350 C/S] confirm P O B and do you have flight information code Lima | 0835:45 | |
| APP | Oxford Radar | I'm afraid I can't, I can coordinate for you, what level are you climbing to on with the [PA34 C/S] | 0835:43 | Landline Call on APP consol |
| Oxford Radar | APP | It was eh pre-noted out to you climbing to flight level eight zero routing MORTN BADIM | 0835:46 | Landline Call on APP consol |
| APP | Oxford Radar | Ok what type of service are you | 0835:49 | Landline Call on APP consol |
| BE350 | DIR | We have Lima copied with two P O B [BE350 C/S] | 0835:49 | |
| Oxford Radar | APP | Eh , he was a Traffic Service for the moment but he is IFR | 0835:50 | Landline Call on APP consol |
| APP | Oxford Radar | Eh, ok so Traffic Service, our aircraft actually descending two thousand eight hundred feet also under Traffic Service | 0835:53 | Landline Call on APP consol |
| DIR | BE350 | [BE350 C/S] squawk ident leaving controlled airspace traffic service | 0835:56 | |
| Oxford Radar | APP | Eh roger what aircraft type is he | 0835:57 | Landline Call on APP consol |
| APP | Oxford Radar | He's a eh King Air | 0835:59 | Landline Call on APP consol |
| Oxford Radar | APP | Ok, roger | 0836:00 | Landline Call on APP consol |
| BE350 | DIR | Squawk ident traffic service [BE350 C/S] | 0836:00 | |
| APP | Oxford Radar | Brize Approach | 0836:01 | Landline Call on APP consol |
| DIR | BE350 | [BE350 C/S] previously called traffic left ten o'clock three miles opposite direction indicating five hundred feet below climbing | 0836:06 | |
| BE350 | DIR | [BE350 C/S] looking | 0836:12 | |
| DIR | BE350 | [BE350 C/S] turn left heading one six zero degrees | 0836:25 | |
| BE350 | DIR | Left turn heading one six zero [BE350 C/S] | 0836:28 | |
| DIR | BE350 | [BE350 C/S] vectoring for PAR runway two six procedure minima seven two zero feet | 0837:15 | |
| BE350 | DIR | Procedure minima seven seven zero to touch and join eh touch and go join the visual circuit | 0837:22 | |
| DIR | BE350 | [BE350 C/S] roger | 0837:28 | |

A transcript of the Oxford RAD RTF was provided as follows:

| From | To | Speech Transcription | Time | Remarks |
|---|---|---|---|---|
| PA34 | Oxford Radar | Oxford Radar [PA34 C/S] passing one thousand seven hundred feet, climbing to altitude five thousand feet, heading three one five | 0829:45 | |
| Oxford Radar | PA34 | [PA34 C/S] Oxford Radar good morning identified, traffic service, climb flight level seven zero | | |
| PA34 | Oxford Radar | Traffic Service, climb flight level seven zero [PA34 C/S] | 0830:00 | |
| Oxford Radar | PA34 | [PA34C/S] resume own navigation | 0830:10 | |
| PA34 | Oxford Radar | Resume own navigation [PA34 C/S] | 0830:15 | |
| Oxford Radar | PA34 | [PA34 C/S] climb flight level eight zero | 0834:35 | |
| PA34 | Oxford Radar | [PA34 C/S] climb flight level eight zero | | |
| Oxford Radar | PA34 | [PA34 C/S] turn right, I say again right, heading er three six er zero degrees, there's traffic now north leaving controlled airspace descending to flight level seven zero | 0835:00 | |
| PA34 | Oxford Radar | Turn right heading three six zero [PA34 C/S] | | |
| PA34 | Oxford Radar | Er [PA34 C/S] do you want us to stay on this heading and continue the climb to flight level eight zero? | | |
| Oxford Radar | PA34 | [PA34 C/S] turn right heading er one eight zero degrees, unfortunately Brize have just brought er traffic out of the airway descending straight through your level just turning you so it didn't hit you | 0836:40 | |
| PA34 | Oxford Radar | Okay no problem we're er turning right heading one eight zero [PA34 C/S] | | |
| PA34 | Oxford Radar | [PA34 C/S] we've seen the traffic going southbound now | | Second voice |
| Oxford Radar | PA34 | [PA34 C/S] roger just continue the right turn to keep you outside er London controlled airspace | 0836:55 | |
| PA34 | Oxford Radar | Roger [PA34 C/S] | | Original voice |
| Oxford Radar | PA34 | [PA34 C/S] resume own navigation, route direct BADIM | 0839:05 | |
| PA34 | Oxford Radar | Own navigation direct BADIM er [PA34 C/S] | | |

## Analysis and Investigation

### CAA ATSI

The PA34 pilot was operating under IFR on a local training flight from Oxford and was in receipt of a Traffic Service from Oxford RAD. The BE350 pilot was on a flight to RAF Brize Norton and was in receipt of a Traffic Service from Brize Radar. ATSI had access to reports from Oxford ATSU and both pilots, area radar recordings, together with RTF and transcripts of the Oxford Radar frequency.

At 0829:46, the PA34 pilot contacted Oxford RAD, passing 1700ft and climbing to 5000ft. The PA34 was identified by the Oxford RAD, a Traffic Service was agreed, and the pilot was instructed to climb to FL70. At 0834:46, the Oxford RAD instructed the PA34 pilot to climb to FL80, which was the pilot's requested cruising level. At this time, the BE350 was 11.5nm north of the PA34, on a reciprocal track. The BE350's Mode S selected flight level had previously displayed FL90; however, this changed to FL70. At 0835:00, the Oxford RAD instructed the PA34 pilot to turn right heading 360°, advising that there was traffic "*north leaving controlled airspace descending to flight level seven zero*" (see Figure 1).

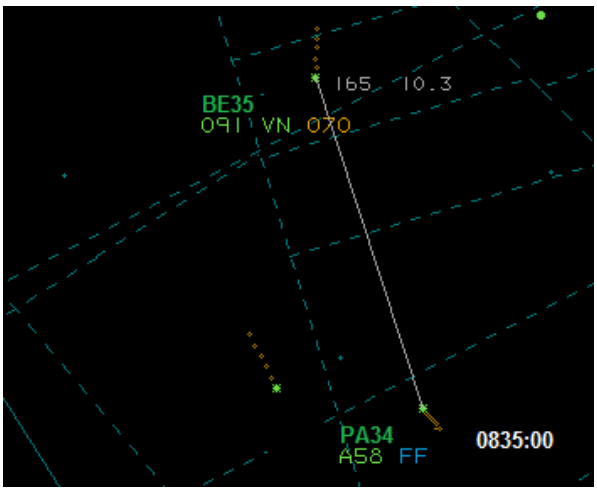

Figure 1

At 0835:23, the Oxford RAD initiated a phone-call to Brize Norton to co-ordinate the PA34 against the BE350. Brize advised Oxford that the BE350 was descending to 2800ft but specific agreement on a course of action between the two controllers was not reached.

The two aircraft passed each other at a range of 3.5nm and with vertical separation of 584ft at 0836:27 (see Figure 2). The PA34 pilot was subsequently given a heading of 180° to avoid entering controlled airspace without a clearance.

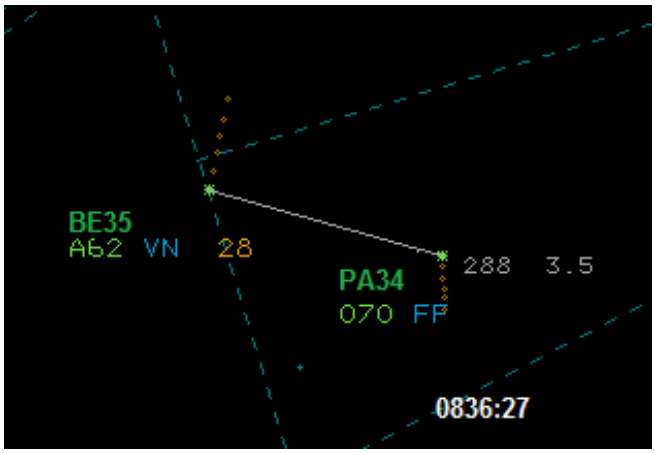

Figure 2

The report from the Oxford RAD stated that the PA34 was pre-noted to Brize ATSU. The Oxford RAD climbed the PA34 to FL80 because the Mode S selected level of the BE350 was indicating FL90. When the selected level of the BE350 changed to FL70 the controller judged that the course and descent profile of the BE350 posed a risk of collision with the PA34. The Oxford RAD turned the PA34 as he believed that the PA34 would not have time to visually acquire the BE350 with traffic information alone.

The Oxford RAD instructed the PA34 pilot to fly heading 360° to avoid confliction with the BE350. The PA34 pilot was in receipt of a Traffic Service at the time of the incident. Deconfliction advice is not provided under a Traffic Service and, although controllers may provide headings and/or levels for the purpose of positioning and/or sequencing, there is no requirement to achieve deconfliction minima and the pilot remains responsible for collision avoidance. In considering Duty of Care, the CAP774, UK Flight Information Services, Chapter 1, paragraph 1.3 states:

> 'The nature of the ATS task in uncontrolled airspace means that it is not possible to be totally prescriptive about all actions to be taken, particularly with regard to unknown traffic and the passing of advice and warnings on high risk conflictions to pilots who have requested Basic Service and Traffic

Service. Consequently, there is a need for controllers/ FISOs to remain free to use their professional judgement to determine the best course of action for them to take for any specific situation.'

However, paragraph 1.9, Provision of ATS states:

'By incorporating elements of another ATS to that agreed, there is a danger that pilots will come to routinely expect those elements as a part of that ATS. This could lead to pilots requesting an inappropriate ATS for the flight profile or flight conditions in the future. Therefore, pilots should not expect, nor ask, controllers/ FISOs to provide any element of another ATS; likewise, controllers/FISOs should not offer nor provide elements of any other ATS.'

Although the Oxford RAD acted with the intention of preventing a confliction between the 2 aircraft, agreeing a course of action with the PA34 pilot following the issuance of Traffic Information, or providing a Deconfliction Service if the pilot requested it, may have allowed the Oxford RAD to resolve the confliction without blurring the terms of the service being provided.

**Military ATM**

The BE350 pilot called Brize at 0834:17, descending to FL90, heading direct to BZN; the controller descended the BE350 to FL70 at 0834:35 (see Figure 1).

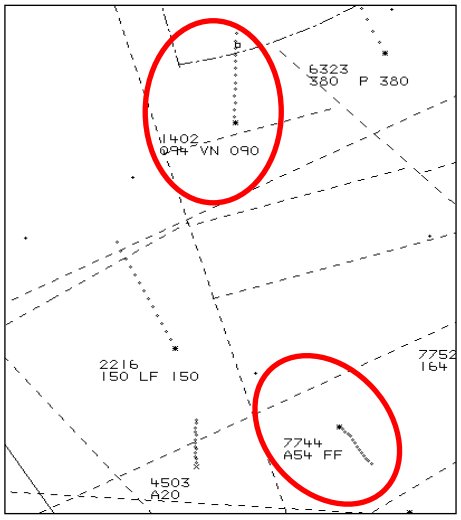


Figure 1: Aircraft geometry at 0834:35 (King Air 1402; PA34 7744)

At 0834:55, with 10.6nm separation, the Brize controller provided further descent to 2,800ft on the Brize QNH, see Figure 2.

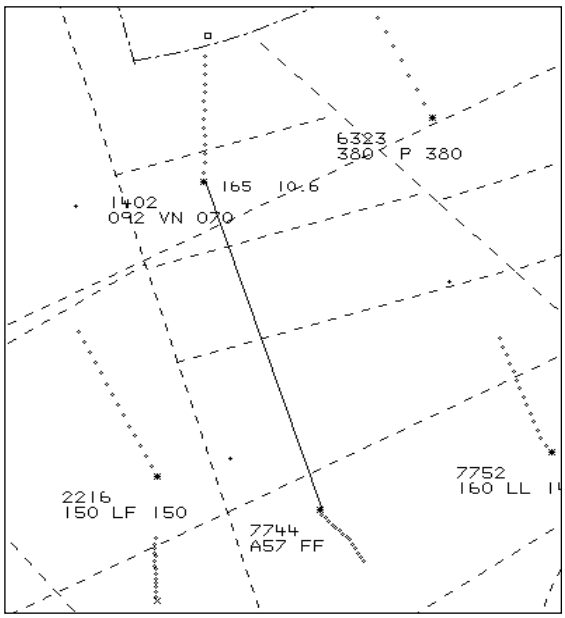

Figure 2: Aircraft geometry at descent point at 0834:55

Brize Director called Traffic Information at 0835:14, see Figure 3, "*traffic left eleven o'clock eight miles crossing left right indicating two thousand six hundred feet above…below climbing, if not visual turn right ten degrees*." The controller emphasized 'below' in his correction. The BE350 pilot was not visual and turned right 10° onto a heading of 190°.

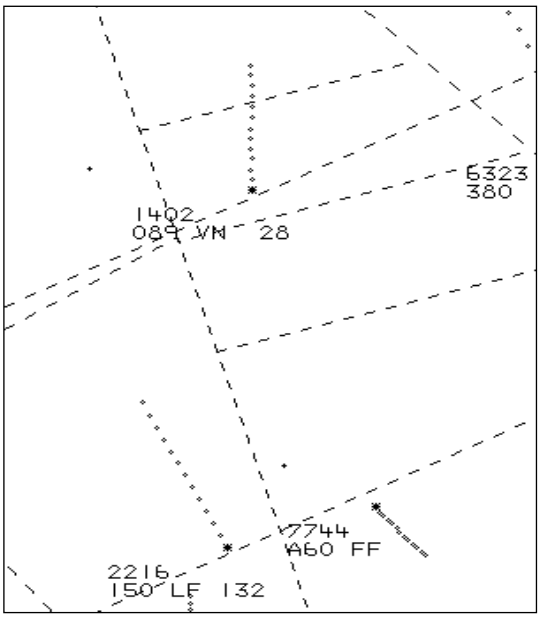

Figure 3: Traffic Information at 0835:14

At 0835:28, the Oxford controller called to ask Brize Approach/Supervisor if they were controlling the BE350. At 0835:33, Brize asked, "Do you want coordination?". Oxford pointed out that the PA34 was climbing to FL80 and Approach asked Oxford to standby whilst Director was asked to answer the landline. Brize Director was transmitting to the BE350 pilot and Brize Approach continued to co-ordinate on Director's behalf. At 0835:43, Brize Approach asked what level the PA34 was climbing to and Oxford replied, "*It was pre-noted out to you climbing to FL80 routing Morton, BADIM."*, see Figure 4.

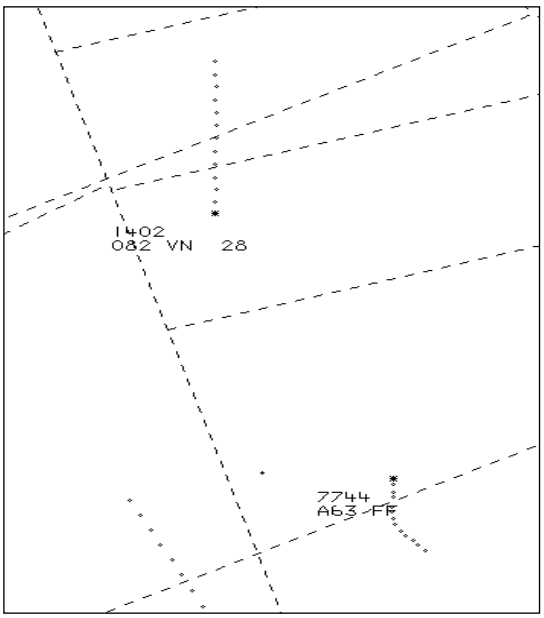

Figure 4: Aircraft geometry at 0835:43

Brize Approach asked what type of service the PA34 pilot was under and Oxford confirmed a Traffic Service but IFR. At 1835:53, Brize confirmed, "*ok, so Traffic Service, our aircraft actually descending 2,800 feet, also under Traffic Service*.", see Figure 5. At the same time, Brize Director had told the BE350 pilot that he was leaving controlled airspace and applied a Traffic Service.

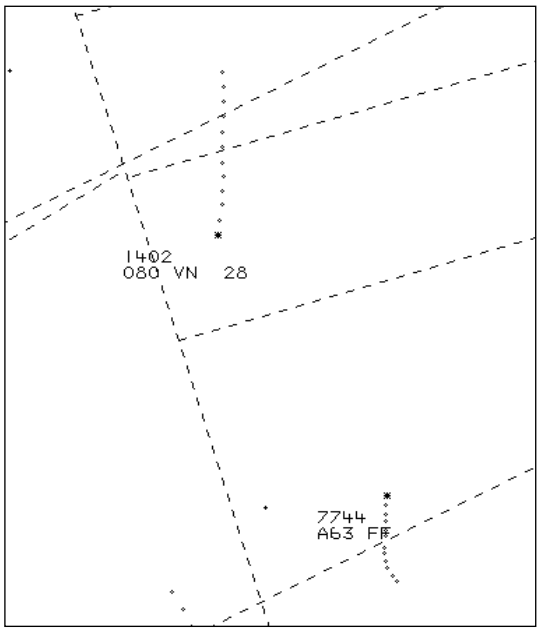

Figure 5: Aircraft geometry at 0835:53

Oxford requested the Brize aircraft type and after confirmation that it was a BE350 there appeared to be no further discussion between controllers. At 0836:06, Brize Director called traffic as, "*previously called traffic left ten o'clock three miles opposite direction indicating five hundred feet below climbing*." Figure 6 shows the geometry at the time of the Traffic Information with 4.3nm lateral separation.

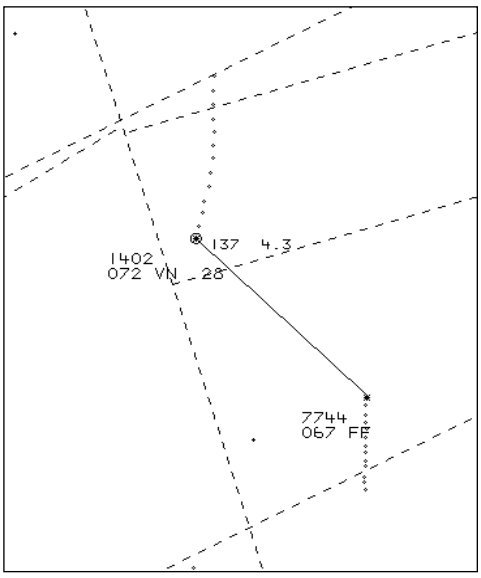

Figure 6: Traffic Information at 0836:06

The Brize Director provided a vector of 160° at 0836:25, see Figure 7. The CPA occurred between 0836:28 and 0836:36 with 3.5nm lateral separation and 800ft vertical separation.

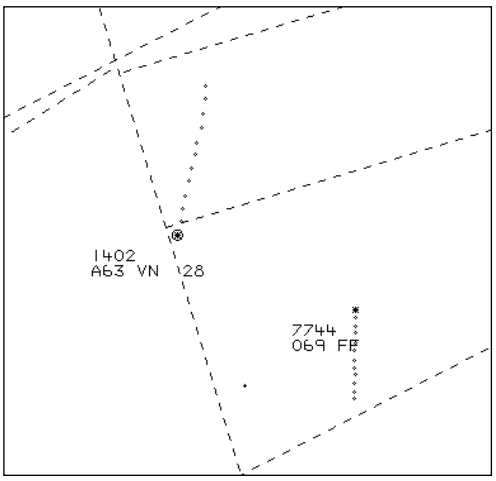

Figure 7: Aircraft geometry at 0836:25

The barriers that exist to prevent mid-air collisions worked on this occasion to provide 3.5nm separation in Class G airspace to aircraft under a Traffic Service. Brize called Traffic Information twice and provided a vector; Oxford provided Traffic Information and a vector to the PA34 pilot flying under IFR. Both pilots had information on other airspace users and did not require an upgrade to a Deconfliction Service. TCAS was fitted to the BE350 but it is believed that the respective aircraft did not approach close enough to trigger a TA or RA. The Brize Supervisor took the landline call from Oxford RAD. Director commented that both aircraft were under a Traffic Service, not on converging tracks, and no threat was perceived. The Supervisor added that an experienced Approach room, including the STANEVAL examiner, had not made comment on a perceived threat to the traffic.

**UKAB Secretariat**

Both pilots shared an equal responsibility to avoid collision and not to fly into such proximity as to create a danger of collision[1], which they achieved. The aircrafts' flight paths did not converge after the Oxford controller's instruction to turn right on to north, nor could the subsequent geometry be considered as 'Head-on'. Of note, the radar replay pictures in this report are taken from area radar

[1] Rules of the Air 2007 (as amended), Rule 8 (Avoiding aerial collisions) and as reflected in Military Flying Regulations

feeds and thus may not depict the same picture as that seen by the Oxford RAD from his own radar, within the limits of resolution of each radar system.

**Comments**

**HQ Air Command**

Brize Director acted responsibly and correctly throughout this incident, to the extent where neither the Supervisor nor the visiting examiner had any cause to intervene or, indeed, comment.

**Summary**

An Airprox was reported by the Oxford Radar controller when a PA34 and a BE350 flew into proximity at 0837 on Tuesday 20th May 2014. The PA34 pilot was operating under IFR in VMC, in receipt of a Traffic Service from Oxford RAD and the BE350 pilot was operating under VFR in VMC, in receipt of a Traffic Service from BZN DIR.

## PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both aircraft, transcripts of the relevant RT frequencies, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

The Board discussed the geometry of the incident and agreed that the Oxford controller had perceived a collision risk and had exercised his duty of care to prevent collision by issuing the PA34 pilot with a right turn onto north. The BZN DIR had also seen a potential confliction and had issue the BE350 pilot, still within CAS, with a 10° right turn in order to increase separation. The traffic passed with 3.5nm horizontal and 600ft vertical separation, which underlined the effectiveness of the controllers' timely actions.

ATC members noted that the Oxford controller had applied a service akin to a Deconfliction Service, with the BE350 at a range of 8.5nm from the PA34 at the point he issued the right turn onto north. Notwithstanding his duty of care to prevent collision, which all controllers share, CAP774 was clear in that it was for the pilot to request the service he or she felt was most appropriate to their flight conditions; in this case, the PA34 pilot had requested a Traffic Service.

The Board agreed that the Oxford controller had perceived a confliction, that was resolved within normal safety standards and parameters.

## PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The Oxford controller perceived a conflict which he resolved.

Degree of Risk: E.

ERC Score[2]: 2

[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.