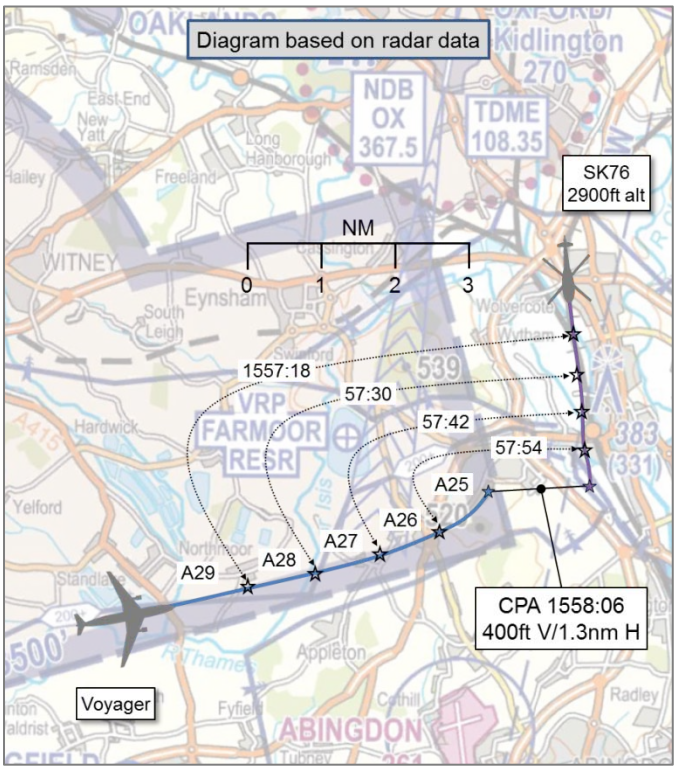
AIRPROX REPORT No 2014078

Date/Time: 5 Jun 2014 1558Z

Position: 5145N 00117W (RAF Brize Norton RTC[1])

Airspace: Brize CTR/ Oxford AIAA (*Class*: D/G)

	Aircraft 1	*Aircraft 2*
Type:	Voyager KC3 (A330)	SK76
Operator:	HQ Air (Ops)	Civ Exec
Alt/FL:	2300ft QNH (1011hPa)	2500ft QNH (NK hPa)
Conditions:	VMC	VMC
Visibility:	10km	50km
Reported Separation:	0ft V/1.5nm H	500ft V/1nm H
Recorded Separation:	400ft V/1.3nm H	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE VOYAGER PILOT reports conducting a radar-vectored PAR to RW26 at Brize Norton (BZN). The grey aircraft had lights selected on, as was the SSR transponder with Modes A, C and S. The aircraft was fitted with TCAS II. The pilot was operating under IFR in VMC and reported being in receipt of a Traffic Service from Brize Director (DIR). The aircraft was level in the BZN CTR at 2300ft on the BZN QNH, heading 090° towards the CTR boundary, when co-altitude traffic was noted on TCAS at the 12 o'clock position, crossing from left to right at a range of about 2 miles. The traffic was seen visually as a white and blue civil helicopter of roughly S76 size. An avoiding turn to the left was made, and simultaneously the crew received a TCAS TA alert. No Traffic Information was passed on the conflicting aircraft.

He assessed the risk of collision as 'Medium'.

THE SK76 PILOT reports in transit between landing sites. The blue and white helicopter had strobes, HISLs, navigation and landing lights selected on, as was the SSR transponder with Modes A, C and S. The aircraft was fitted with TCAS I. The pilot was operating under VFR in VMC, in receipt of a Traffic Service from Oxford Radar (RAD). The transit routeing took them overhead Oxford on a track of about 175°, level at altitude 2500ft and parallel to the BZN CTR, about ½nm to the east of its most eastern point. The crew were advised by Oxford of traffic in the Brize CTR which would be positioning to finals. This confirmed their visual sighting of a grey A330, in their right 3 o'clock at a range of 3nm, which was beginning a left-hand turn and then descending inside the BZN CTR. Given their proximity to the Brize CTR, the constrained airspace, and the Voyager being an airliner-type, he confirmed with Oxford that the helicopter was outside the BZN CTR. Oxford confirmed the position as outside the BZN CTR in Class G airspace. Oxford commented that the new wide-body aircraft (A330) were coming quite close to the edge of the CTR when positioning for the westerly runway at BZN. The TCAS indicated a TA but the helicopter crew were visual with the A330 at all times and at no time did they consider taking any form of avoiding action as there was no threat of collision.

He assessed the risk of collision as 'None'.

[1] Radar Training Circuit

THE BZN DIR CONTROLLER reports being the ATCO I/C whilst also vectoring the Voyager for a single frequency PAR, inside Brize CTR on the downwind leg. At the time of the incident she was also monitoring the Red Arrows transiting the zone along with other aircraft, and was also checking that the PAR was set up for the Voyager. She issued an early left turn for the base leg, from 080° onto a heading of 340° having observed the aircraft's [low] rate of the turn following previous vectors. Once the turn was issued, the pilot reported that he 'may have had an Airprox' on the downwind leg with a civil rotary aircraft that was outside the Brize CTR, in his 12 o'clock. Due to the workload and 'other contributing factors', the DIR did not call the traffic outside Brize CTR to the Voyager pilot. As the Voyager turned onto the base leg, it flew outside the Brize CTR.

She perceived the severity of the incident as 'Medium'.

THE BZN DEPUTY SATCO reports that the ATCO I/C role at BZN is a controlling position, and, under normal circumstances, this is appropriate for the task to be completed efficiently. During this incident, the ATCO I/C was assisting other controllers in the execution of their duties when traffic levels spiked and she took over the DIR position to control the Voyager. However, once the controller had taken control of the aircraft, it would have been expected that their full concentration would be afforded to that traffic. The Brize CTR is of a sufficient size to allow all aircraft types to maintain within its lateral limits during a radar vectored approach, irrespective of wind conditions and rates of turn. It would also have been expected that Traffic Information be passed on aircraft operating outside the CTR, as it was clearly relevant during the Voyager's turn. The Deputy DATCO noted that setting up the PAR during the single-frequency approach was likely to cause momentary distraction but, if no other controllers were available, the Voyager pilot could have been informed that the PAR was unavailable. He opined that the incident was indicative to him of an inappropriate allocation of attention and poor concentration during a relatively benign aircraft recovery.

Factual Background

The weather at BZN was recorded as follows:

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METAR EGVN 051550Z 25007KT CAVOK 17/05 Q1011 BLU NOSIG
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Analysis and Investigation

CAA ATSI

At 1555:45, the S76 was at an altitude of 2900ft, 1.2nm northeast of Oxford Airport tracking south. The Voyager was at an altitude of 4700ft, 2.6nm south of Brize Norton positioning downwind left-hand for Brize RW26. At 1556:45, the Voyager passed an altitude of 3500ft and entered the Brize CTR, Class D airspace, from above. The Oxford Radar controller passed Traffic information to the S76 pilot, who reported sighting the Voyager as it commenced a left turn. At 1558:02, the horizontal distance between the aircraft was 1.6nm as the Voyager started its turn, see Figure 1.

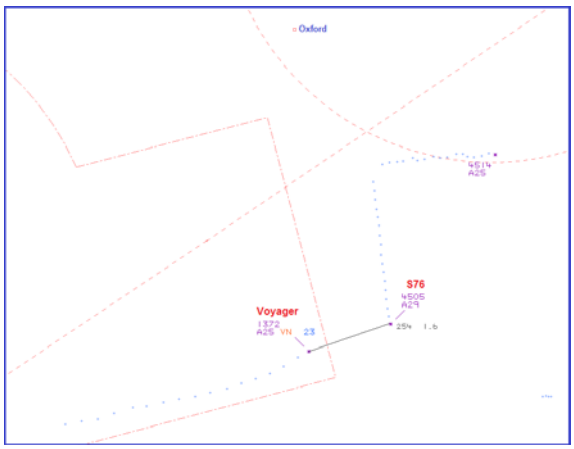

Figure 1 – Swanwick MRT at 1558:02

At 1558:06 (CPA), the aircraft passed abeam with a horizontal distance of 1.3nm and vertical distance of 400ft, (Figure 2). The Voyager's turn resulted in the Voyager leaving CAS on base leg.

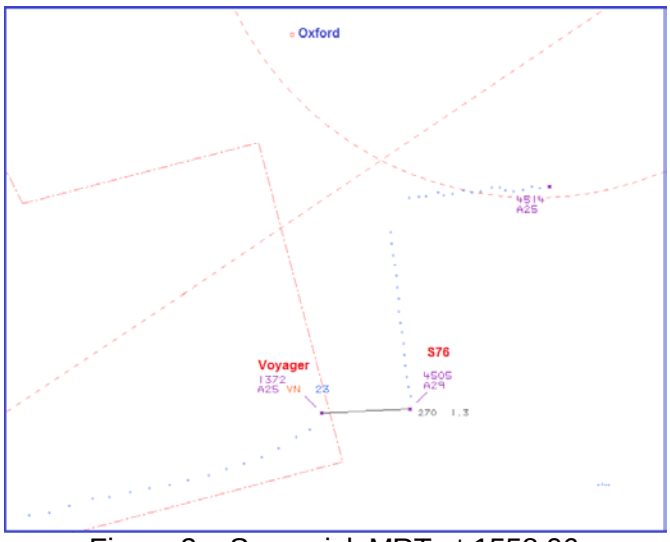

Figure 2 – Swanwick MRT at 1558:06

The Voyager pilot was operating in Class D airspace and was in receipt of a Radar Control Service from BZN DIR. The S76 pilot was in receipt of a Traffic Service and the Oxford Radar controller provided appropriate Traffic Information. The S76 pilot visually acquired the Voyager and did not consider avoiding action was necessary; he continued south without further incident.

Military ATM

The Brize DIR was also the ATCO I/C responsible for the shift. The DIR had just received the Voyager on frequency in the BZN Class D CTR, under radar vectors for a PAR. Having noticed a slow rate of turn on previous vectors, the DIR provided an early base leg turn on to 340°. As the turn was issued, the pilot reported an Airprox with a rotary aircraft outside the BZN CTR. The DIR placed her own workload as medium-to-low, but the overall unit workload as high-to-medium. As the ATCO I/C and DIR, the controller commented that the APR and ZONE controllers were busy with an unusual occurrence and she was attempting to monitor the situation and check the PAR console set-up. At 1557:14, the Voyager was on the downwind leg for RW26 (squawking 1372) and the SK76 (squawking 4505) was transiting to the east of the BZN CTR, see Figure 1.

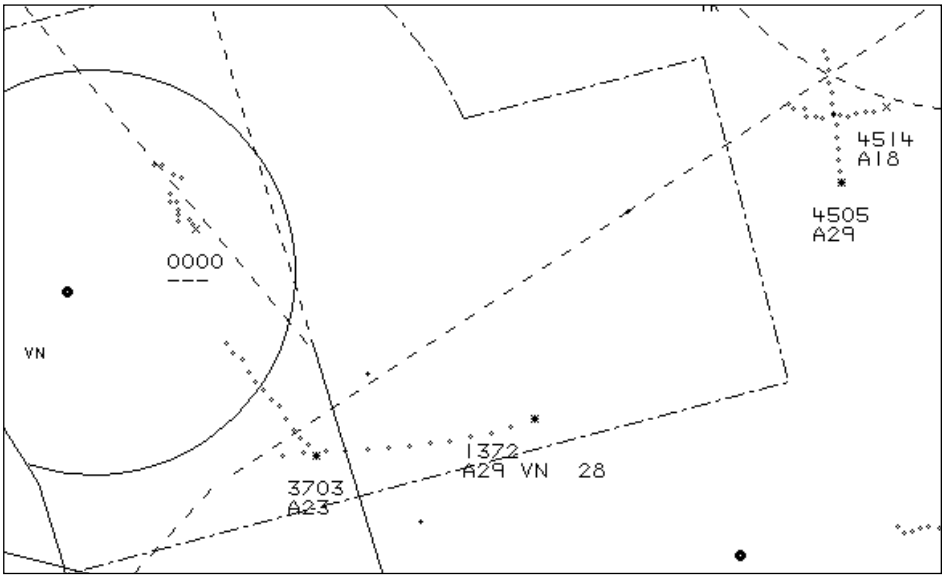

Figure 1: Geometry at 1557:14

At 1557:37, the DIR passed the Voyager pilot a base leg turn, left onto 340°, see Figure 2.

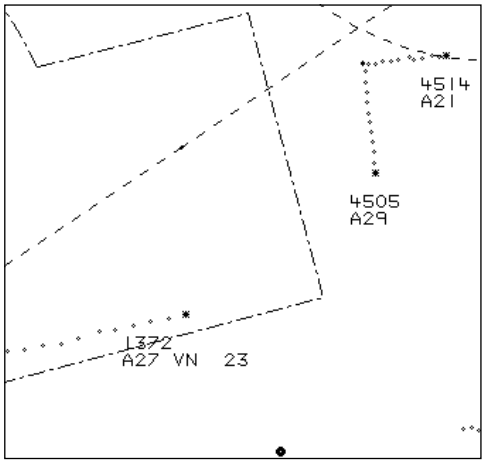

Figure 2: Geometry at 1557:37

The radar replay showed that the Voyager pilot initiated a left turn at 1557:55. The CPA was at 1558:06 with 1.3nm lateral separation and 400ft vertical separation, see Figure 3.

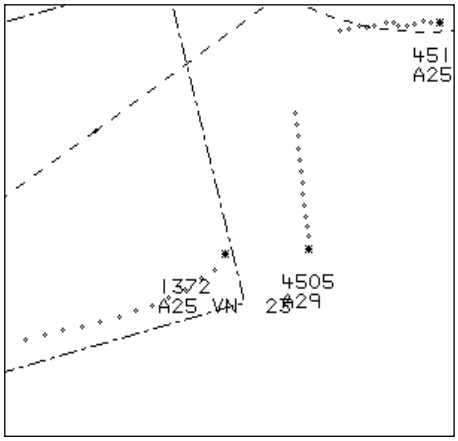

Figure 3: CPA at 1558:06

At 1558:12, the Voyager pilot declared, "*Left heading two eight zero degrees and for your information we may have had an Airprox, traffic was in our twelve o'clock range about two miles*." The radar replay picture at 1558:21, as the Voyager left the BZN CTR, is shown at Figure 4.

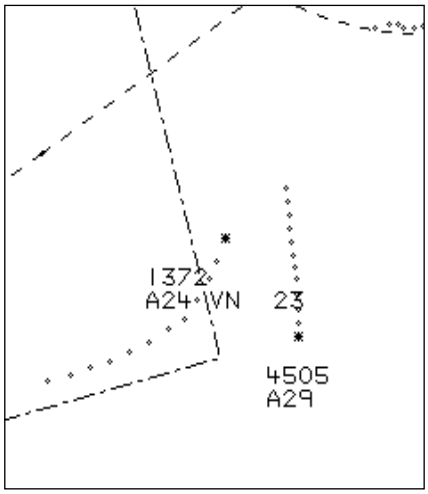

Figure 4: Geometry at 1558:21

In an open and honest occurrence report, the DIR acknowledged the distraction from other tasks. As ATCO I/C, responsible for the shift, the DIR may have been watching what was occurring elsewhere in the Approach Control Room, which was experiencing a high workload and an unusual occurrence with a Fairford departure. Despite the high workload, the APR and ZONE controllers were experienced, fully endorsed controllers and were able to cope with their tasks. DIR was also to deliver the PAR to the Voyager and checking the PAR console set-up may have also temporarily distracted her. The slight delay in the Voyager pilot's turn on to base (issued 1557:37, effective 1557:55 with 1.8nm lateral separation) could have occurred as the Voyager pilot was considering the TCAS TA. The DIR had mentioned the rate of the previous Voyager turns and the intention to provide an early base leg turn; DIR may have been expecting the Voyager to stay within the confines of the BZN CTR and that the base leg turn meant that Class G transits outside the CTR were not a threat. It is local practice to call all traffic, even if it is outside the CTR. Traffic Information was not passed on the SK76 and had information been passed, along with the plan for the base leg turn, it may have allayed the concerns of the Voyager crew, who commented that they 'may have had an Airprox'.

The barriers to an Airprox of this nature include lookout, TCAS and Traffic Information. The lookout and TCAS combined to provide the Voyager crew with a left-hand avoiding action turn but Traffic Information was not passed. The DIR had been distracted with other tasks and had intended to turn the Voyager onto a north-westerly heading, deconflicting with the SK76 transiting outside the BZN CTR. Workload and possible distraction factors add context to the lack of Traffic Information and help explain why the crew filed an Airprox report.

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[2]. The BZN DIR was not required to achieve mandatory separation minima from VFR traffic, whether outside or inside the CTR.

Comments

HQ Air Command

Without the radar awareness available to Brize DIR, and despite being in receipt of a Traffic Service, the Voyager crew were reliant on TCAS and lookout in detecting and avoiding the SK76. Brize DIR did not provide TI to the Voyager crew, which generated unnecessary concern for them. The Brize DIR's own report is welcomed for its honesty and for reminding us that tasks must be effectively prioritised at all times.

Summary

An Airprox was reported when a Voyager KC3 and a Sikorsky SK76 were flown into proximity in the vicinity of the RAF Brize Norton CTR at 1558 on Thursday 5th June 2014. Both pilots were operating in VMC, the Voyager pilot under IFR in receipt of a Radar Control Service from Brize DIR and the SK76 pilot under VFR in receipt of a Traffic Service from Oxford Radar.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

The Board first considered the pilots' actions. The pilot of the TCAS equipped SK76 was conducting a VFR transit in Class G airspace and was in receipt of a Traffic Service from Oxford. He had been advised of the Voyager, had seen it in his right 3 o'clock position and noted a TCAS TA. Having taken

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

the added precaution of confirming with the Oxford controller that he was maintaining a track outside the BZN CTR, he continued on his way. In the Board's opinion, this represented the template for aviation practice in Class G for this type of aircraft and operator. As for the Voyager pilot, he was operating under IFR in the BZN instrument pattern, but had not been given Traffic Information on the SK76 before seeing it at relatively close range ahead of the aircraft and receiving a TCAS TA. His autonomous avoiding action left turn helped to resolve the perceived conflict, but the aircraft still flew outside the CTR, thereby losing the protection a CTR affords. Had the Voyager pilot been given Traffic Information, the Board opined that he would probably have been much more comfortable with the situation overall knowing that ATC were aware, and would probably not have felt the need to conduct an avoiding action turn.

Turning to the BZN DIR, members agreed that she appeared to have been distracted by the high-profile departing Fairford traffic, and by setting up the PAR, and had consequently omitted to pass Traffic Information to the Voyager crew. Some ATC members wondered why the Supervisor had stood down and designated the DIR as ATCO I/C given the presumably known activity spike that would be associated with the Red Arrows' no doubt complex and unusual departure from Fairford; members surmised that the volume and complexity of this departure may have warranted the attention of a Supervisor rather than a dual-tasked DIR/ATCO I/C.

The Board agreed that the cause of the Airprox was that the Voyager pilot was concerned by the proximity of the SK76, especially in the absence of Traffic Information, and that the Voyager's turn outside the BZN CTR had been contributory to his concern. Some members felt that a collision risk had been prevented by effective and timely avoiding action, but the majority agreed that there was no risk of collision and that normal safety standards had applied.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: In the absence of Traffic Information, the Voyager pilot was concerned by the proximity of the SK76.

Contributory Factor(s): The Voyager's turn took it outside the BZN CTR.

Degree of Risk: E.

ERC Score[3]: 50.

[3] 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.