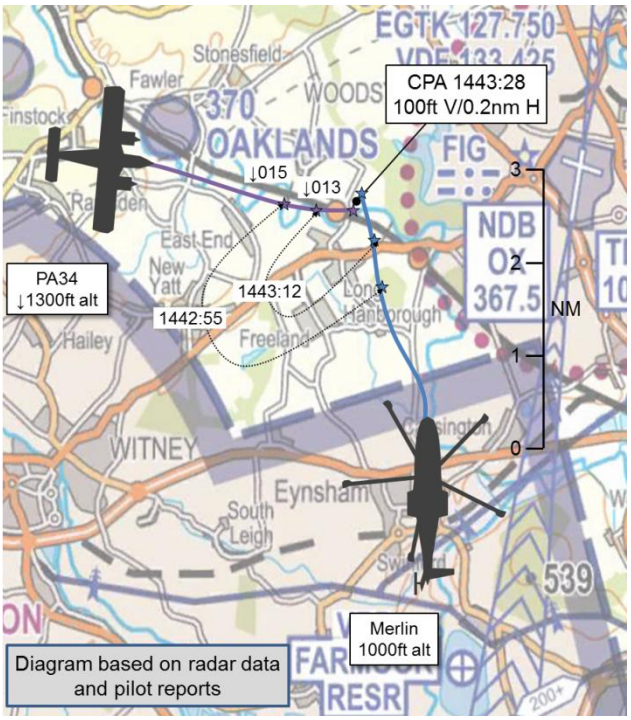
AIRPROX REPORT No 2014095

Date/Time: 19 Jun 2014 1445Z

Position: 5150N 00123W (5nm NE Brize Norton)

Airspace: Oxford AIAA (*Class*: G)

	Aircraft 1	*Aircraft 2*
Type:	Merlin	PA34
Operator:	HQ JHC	Civ Trg
Alt/FL:	1000ft QNH (1023hPa)	1300ft QNH (1023hPa)
Conditions:	VMC	VMC
Visibility:	10k	9k
Reported Separation:	0ft V/100yds H	0ft V/400m H
Recorded Separation:	100ft V/0.2nm H	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE MERLIN PILOT reports flying a green helicopter with all lights illuminated and SSR transponder Mode 3A, C and S selected. He was receiving a Basic Service from Brize ATC. The aircraft departed the Brize CTR at 1000ft and requested a frequency change; just before they went on route the controller gave Traffic Information 10 o'clock, 2nm away and 200ft above. Shortly afterwards the PF spotted the aircraft in his peripheral vision, at a range of 200yds. He turned right and descended away, at the same time the crewman saw the other aircraft and, on assessing that the aircraft were suitably divergent, called 'maintain heading'. Heading and altitude were then resumed. On landing the crew reviewed the incident and decided the proximity of the flight paths constituted an Airprox.

He assessed the risk of collision as 'Medium'.

THE PA34 PILOT reports flying a white and blue aircraft with all lights illuminated and SSR transponder modes 3A, C and S selected. The aircraft was not fitted with TCAS. As a Flight Examiner, he was conducting an initial instrument rating test on a student. The final part of the test was a simulated asymmetric NDB approach to Oxford. The final approach fix for this procedure is 1nm from the northern edge of the Brize CTR. The aircraft was fitted with screens to restrict the student pilot's view from the left hand seat, but they did not in any way restrict the examiner's view to the right and straight ahead. Until the final approach fix they had received a Traffic Service from Oxford radar, but were then passed to Oxford tower for a Procedural Service, although they retained the squawk for conspicuity. During the instrument approach the instructor was dividing his time between looking out and checking the student's compliance with the procedure for examination purposes. At 2.8nm there is a 'not below' step of 1250ft on the approach as well as the usual +/-5° tracking limits which must be complied with. At around 4nm from Oxford, he saw a Merlin crossing right to left at a similar altitude, it was close enough to make a comment to the student and to ATC, but it was apparent that it would pass ahead, so he did not take control or initiate avoiding action as this would have resulted in the need to re-fly the approach.

He assessed the risk of collision as 'Medium'.

THE BRIZE CONTROLLER reports working as the Radar Approach controller with Zone bandboxed. The Merlin had been cleared to cross the Brize CTR on a VFR crossing, not above 1300ft, he was receiving a Basic Service outside controlled airspace. The controller passed traffic information to

Oxford, which was standard procedure, who said they had nothing to affect. Because the Merlin was now outside controlled airspace with nothing to affect, his attention was drawn to other traffic that he was controlling. The Merlin reported that he wanted to change to Enstone's frequency. As the pilot called, the controller noticed that he had traffic north-west of his position and, even though he was on a Basic Service, the controller felt he should call it before releasing the Merlin. He called it at 2nm away and 200ft above, although with hindsight he thought that the range may have been closer to 1nm. A few moments later the pilot thanked him for calling the traffic because he only became visual after it was called, the Merlin pilot then went en-route.

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

Factual Background

The weather at Brize Norton was recorded as:

```
METAR EGVN 191350Z 36008G18KT 9999 FEW018 BKN032 20/13 Q1023 BLU NOSIG
```

Analysis and Investigation

CAA ATSI

ATSI had access to reports from both pilots, area radar recordings and RTF and transcripts of the Oxford Tower and Radar frequencies.

At 1435:42 the Oxford Radar Assistant took a phone call from Brize Norton advising Oxford of a Merlin squawking 3707 routeing just east of Farmoor Reservoir and then west of the Oxford ATZ. The Assistant acknowledged the information before hanging up.

The PA34 pilot was conducting the NDB DME 100 procedure under a Traffic Service agreed at 1414:30 and at 1442:23 reported that they were passing four miles (Figure 1). The Merlin was 3.2nm southeast of the PA34, tracking north, indicating 1100ft. The Oxford Radar controller had initiated a phonecall to Brize Norton to co-ordinate other traffic and was on the phone when the PA34 reported at 4nm. The PA34 was instructed to contact Oxford Tower.

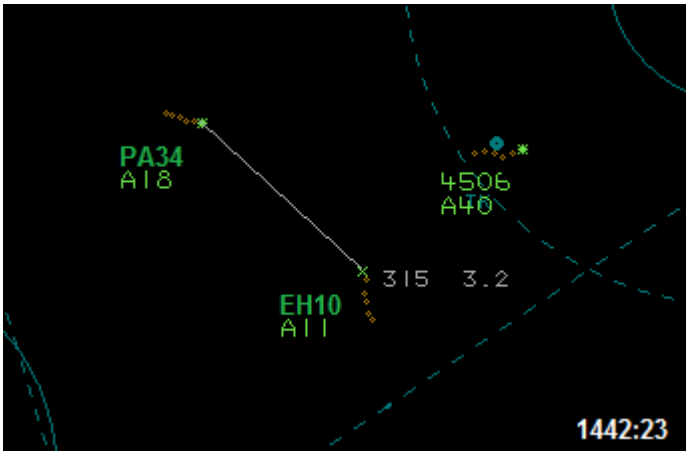


Figure 1. (EH10 = Merlin)

At 1442:37, the PA34 pilot reported base turn complete, passing four miles, to Oxford Tower and was instructed to report downwind right-hand low level which was read back correctly. The two aircraft continued to converge. At 1443:03 the Oxford Radar controller, who was engaged on another operational phonecall, passed Traffic Information on the Merlin to the traffic squawking 4506 (Figure 2).

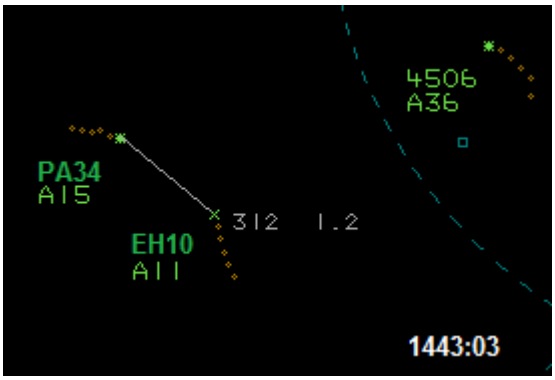


Figure 2.

The Oxford Radar controller then attempted to pass Traffic Information on the Merlin to the PA34 pilot before realising that the PA34 had already transferred to the Tower. The Oxford Radar controller was heard to comment "*bet he's got traffic on that in the tower*". There were no transmissions made on the Oxford Tower frequency after the PA34 pilot read back the instruction to report downwind until, at 1443:26 the PA34 pilot reported that a helicopter had just flown in front of them (Figure 3). This was acknowledged by the Tower controller who stated that it looked like a military helicopter. CPA occurred shortly afterwards as the Merlin turned left and was measured as 0.2nm/100ft.

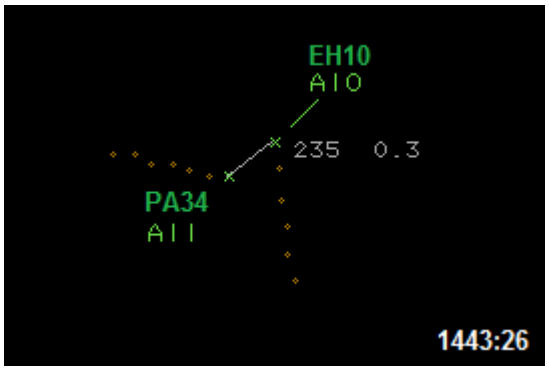


Figure 3.

The report from the pilot of the Merlin stated that they were informed of traffic by Brize Norton in their 10 o'clock, 2nm, 200ft above. The handling pilot saw the PA34 and turned right, commencing a descent until it was assessed that the aircraft tracks were divergent and the previous heading and altitude were resumed. The report from the pilot of the PA34 stated that at around 4nm from Oxford he became aware of a Merlin helicopter crossing right to left at similar altitude. The Merlin was close enough that the pilot of the PA34 made a comment to his student and to ATC but it was apparent that the Merlin would pass ahead so avoiding action was not taken. The term "Airprox" was not used to Oxford ATC and the unit did not file a report on the incident. When follow-up enquiries were made to the ATSU, it was stated that the controllers involved did not recall the occurrence.

Prior to being transferred to the Oxford Tower controller the PA34 pilot was in receipt of a Traffic Service from the Oxford Radar controller. CAP774, Chapter 3, Paragraph 3.5 states:

> 'The controller shall pass traffic information on relevant traffic, and shall update the traffic information if it continues to constitute a definite hazard, or if requested by the pilot. However, high controller workload and RTF loading may reduce the ability of the controller to pass traffic information, and the timeliness of such information.
> *Traffic is normally considered to be relevant when, in the judgement of the controller, the conflicting aircraft's observed flight profile indicates that it will pass within 3 nm and, where level information is available, 3,000 ft of the aircraft in receipt of the Traffic Service or its level-band if manoeuvring within a level block.'*

The Oxford Radar controller was talking on the telephone to Brize Norton when the PA34 pilot reported at 4nm. Traffic information on the Merlin was not passed to the PA34 pilot and he was transferred to the Tower. It is likely that the Oxford Radar controller was unaware of the position of the Merlin at that time. During a subsequent operational phonecall the Oxford Radar controller passed traffic information on the Merlin to another pilot before attempting to pass traffic information to the PA34. The Oxford Radar controller then realised that the PA34 had already been transferred to the Tower and indicated on the open telephone line her belief that the Tower controller would pass traffic information. The realisation that the Merlin was conflicting with the PA34 seems to have come quite late and may not have allowed sufficient time for the Radar controller to alert the Tower controller to the presence of the Merlin (either by ending the ongoing telephone call and calling the Tower, or requesting the radar assistant, if they were in the room, to do so) and ensure that traffic information was passed to the PA34.

The passing of traffic information using the ATM is part of the advanced uses of the ATM and requires approval and training. Oxford does not have approval for advanced uses of the ATM. However, the Oxford Radar controller stated on the telephone recordings that the PA34 would receive traffic information from the Tower controller so there appears to have been an expectation that the Tower controller would pass traffic information. Traffic information was not passed on the Merlin to the PA34 by the Tower controller. It is not known if the Tower controller was aware of the presence of the Merlin either on the ATM or visually from the Tower.

Regardless of the service being provided, both aircraft were operating in Class G airspace where the principle of see-and-avoid applies and were ultimately responsible for their own collision avoidance.

Military ATM

All heights/altitudes quoted are based upon SSR Mode C from the radar replay unless otherwise stated.

At 1435:14, the Merlin was cleared to cross the Brize Zone not above 1300ft Brize QNH 1023hPa, maintaining VMC. At 1440:07, traffic was called as, "*traffic north three miles manoeuvring, indicating two hundred feet below believed to be ah in the visual circuit for Oxford."* The Merlin reported looking for the traffic (Figure 4) .

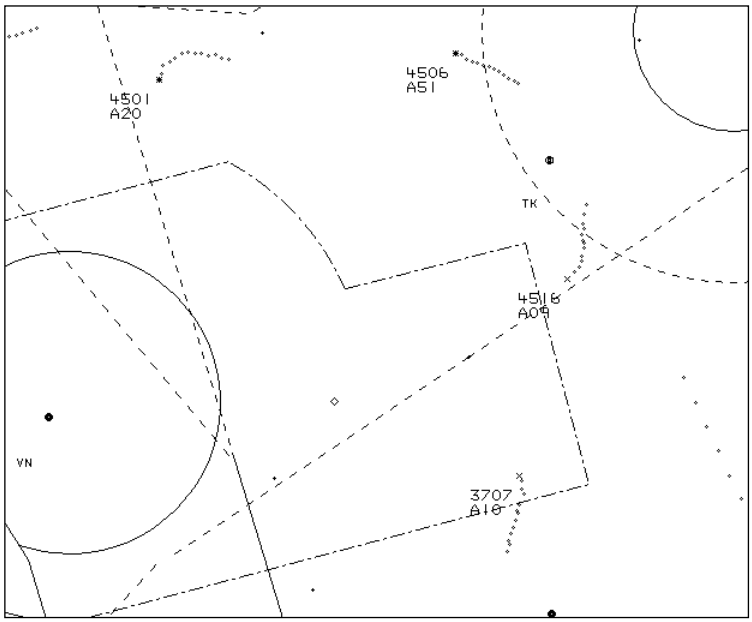


Figure 4: Traffic Information at 1440:07 (Merlin squawk 3707, non-airprox traffic 4516; PA34 squawk 4501).

At 1442:24, the Merlin departed the Brize Zone and reverted to a Basic Service (Figure 5) .

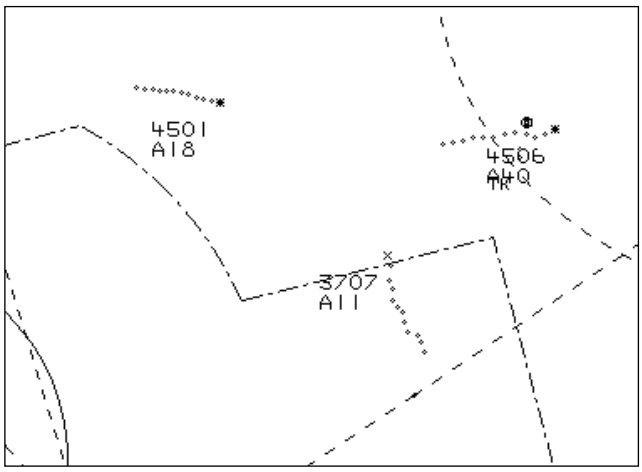


Figure 5: Geometry 1442:24 as the Merlin departed the Brize Zone.

At 1442:58, the Merlin declared clear of the Brize Zone, squawking 7000 and changing to the en-route frequency (Figure 6).

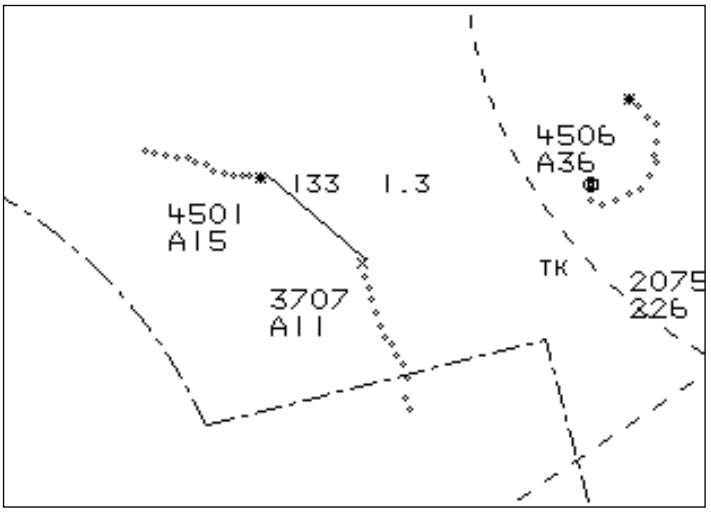


Figure 6: Geometry at 1442:58 as the Merlin reported intention to change to en-route frequency.

At 1443:12, the controller replied with, "[Merlin c/s] *roger, traffic northwest half a mile crossing left right ah indicating two hundred feet above descending*." The Merlin pilot replied with, "*looking*" (Figure 7).

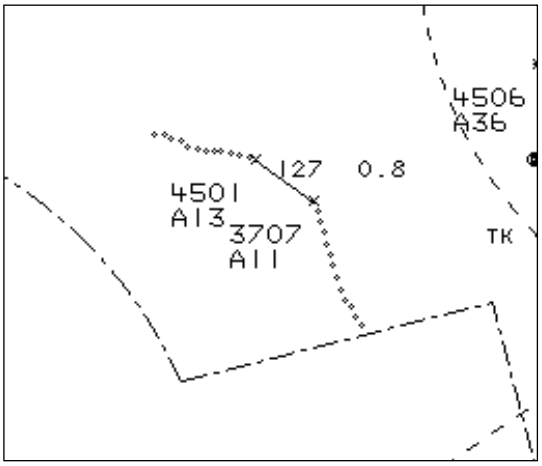


Figure 7: At 1443:12 Traffic Information from Brize.

The CPA on radar replay was at 1443:28 with 100ft height separation and 0.2nms lateral separation (Figure 8) .

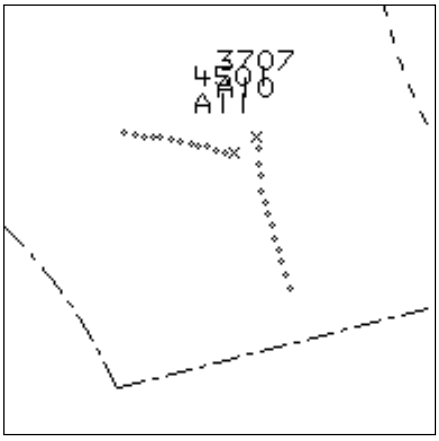


Figure 8: CPA at 1443:28.

At 1443:55, the Merlin pilot added, "*we did catch that aircraft, reasonably close thanks for the late call*."

The PA34 was being controlled by Oxford. Having left the Brize Zone, the Merlin was under a Basic Service and therefore both pilots were responsible for their own collision avoidance. The Brize controller had higher-priority traffic and liaison with Fairford to deal with; the radio call from the Merlin pilot would have directed the controller's attention to the Merlin and Traffic Information was called prior to the Merlin pilot changing frequency. The Traffic Information had enabled the Merlin crew to spot and avoid the PA34.

Both pilots were responsible for their own collision avoidance, although the information from Brize allowed the Merlin to get visual and take action; this barrier of radar-derived information assisted but may not have been available, given the type of service. Neither aircraft were fitted with TCAS/ACAS and this barrier did not exist. The last remaining effective barrier was for effective lookout. Despite the use of IF screens, the PA34 instructor had unobstructed lookout from the right (the Merlin passed right to left) and it may have been a late spot because the Merlin had already taken a turn and descent to keep clear. Accurate Traffic Information assisted the Merlin pilot's lookout at a time when the aircraft were converging with 0.8nms lateral separation and 200ft height separation.

UKAB Secretariat

Both pilots shared an equal responsibility for collision avoidance and for not flying into such proximity as to create a danger of collision[1]. The geometry was a 'converging' situation so the PA34 pilot was required to give way[2].

Comments

JHC

Both aircraft involved in this Airprox were operating in accordance with correct regulations. It appears that the Merlin, although under a Basic Service, was given sound situational awareness by Brize ATC. The PA34 was under a Procedural Service, and Oxford were not required to provide information on the Merlin, but there were a number of assumptions made in the release of the PA34 to tower which allowed the two aircraft to come into proximity.

[1] Rules of the Air 2007 (as amended), Rule 8 (Avoiding aerial collisions).
[2] ibid., Rule 9 (Converging).

Summary

An Airprox was reported between a Merlin, in the receipt of a Basic Service from Brize Norton and a PA34 on an NDB approach and receiving a Aerodrome Control Service from Oxford. The Merlin crew received Traffic Information from Brize ATC and took avoiding action. The PA34 pilot did not receive Traffic Information, but saw the Merlin and did not perceive a need for avoiding action.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included 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 first discussed the actions of the Brize controller and it was agreed that he had correctly discharged his duty in passing Traffic Information to Oxford. He was also commended for passing timely Traffic Information to the Merlin pilot, despite providing only a Basic Service, which enabled the Merlin crew to see the PA34 and take action that probably succeeded in creating more separation than would otherwise have been achieved.

In turning to Oxford ATC's role, the Board felt that it was unfortunate that the Traffic Information provided by Brize to Oxford ATC regarding the Merlin did not appear to have been acted upon; the Board were unable to determine whether this was due to the workload of the Radar controller, or because it was simply not passed on by the Assistant. Although the Oxford Radar controller was busy with other priorities, the PA34 was initially receiving a Traffic Service and it could reasonably be expected that the controller should have seen the conflict on radar earlier, and given the PA34 pilot Traffic Information irrespective of the Brize call. Furthermore, once the PA34 had switched to the Aerodrome frequency, the Board noted that the Radar controller did not liaise with the ADC to ensure the Traffic Information was passed on and seemed to rely on the fact that the ADC would pick up the conflict on the ATM. There then followed some discussion about whether, given that there was an ATM situated in the ACR, the ADC could be expected to use it for Traffic Information irrespective of not being trained in its use. In the end it was agreed that the ADC could not be criticised for not using the ATM; nevertheless, it was disappointing that safety equipment was present but that training and procedures hadn't been provided to enable controllers to utilise it.

Finally, the Board looked at the actions of the PA34 pilot. Whilst it was recognised that during examinations there are intense financial and time pressures, the Board wondered why, having seen the Merlin from some distance, the PA34 pilot elected to press on with the approach despite the fact that he was required to give way. Although some members of the Board thought that the pilot probably believed there was sufficient separation to warrant his subsequent inaction given that he was visual with the Merlin at all times, the fact that he was concerned enough to mention it over the RT to ATC was evidence that he clearly thought there was some issue, as corroborated by the miss distance actually achieved. There was also some discussion about the use of IF screens: although it was acknowledged that in this instance the screens had no bearing on the Airprox, the Board wished to highlight that the CAA now permits the use of "foggles" for students under examination rather than screens in order to ensure unimpeded look-out by the examiner.

In determining the cause of the Airprox, the Board agreed that in not taking avoiding action the PA34 pilot flew into conflict with the Merlin, but that there were also some contributory factors. Firstly, that there had been a lack of Traffic Information to the PA34 pilot from Oxford ATC, and, secondly, that there was poor co-ordination between Oxford Radar and Oxford Tower. The Board assessed the risk as Category C, timely actions were taken by the Merlin pilot to increase the separation.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The PA34 pilot flew into conflict with the Merlin.

Contributory Factor(s): 1. Lack of Traffic Information to the PA34 from Oxford ATC.

2. Poor coordination between Oxford Radar and Oxford Tower.

Degree of Risk: C

ERC Score[3]: 21

[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.