

## AIRPROX REPORT No 2011030

Date/Time: 12 Apr 2011 0839Z

Position: 5059N 00145W (6nm SSE Salisbury)

Airspace: Boscombe ARA (Class: G)

Reporting Ac      Reported Ac

Type: Grob Tutor TMk1 PA34

Operator: HQ Air (Trg)      Civ Trg

Alt/FL: 5000ft↑      FL50  
(RPS 1028mb)

Weather: VMC CLOC      VMC CLOC

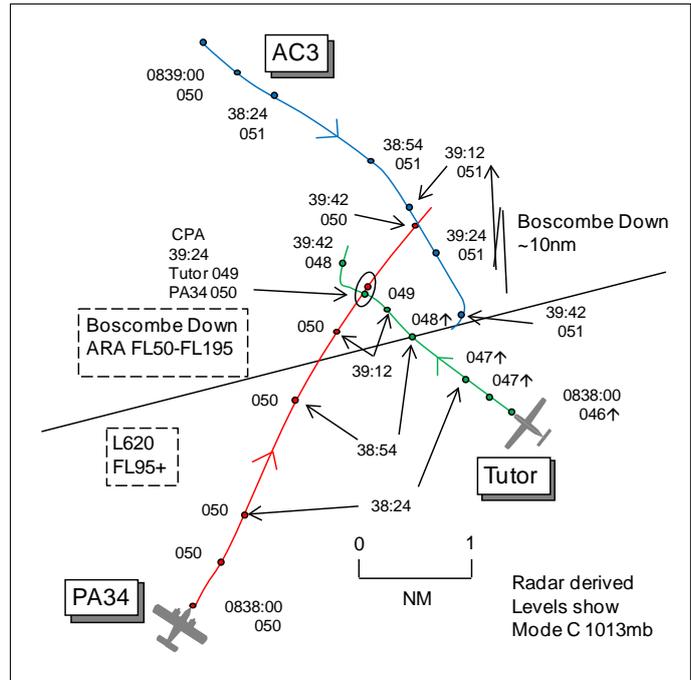
Visibility: 50km      30km

Reported Separation:

100ftV      Not seen

Recorded Separation:

100ft V/<0.1nm H



## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

**THE TUTOR PILOT** reports flying a dual grading sortie from Middle Wallop, VFR and under a 'listening watch' with Boscombe Zone on 233.85MHz, squawking with Modes S and C. The visibility was 50km in VMC and the ac was coloured white. Operating in the SW training area the student was flying the ac straight and level at 5000ft RPS 1028mb and 100kt with a slightly high nose attitude and a small ROC established. Following a lookout scan to the L the required radio frequencies for recovery were selected by the student. A lookout scan was conducted from the ac's nose to the RHS tailplane by the ac Capt and student. During the scan to the L a light twin-piston engine ac was seen passing directly O/H from the 7 o'clock sector passing to the 2 o'clock sector about 100ft above. This sighting was too late to take avoiding action. The Capt took control and levelled the ac; he assessed the risk as medium.

**THE PA34 PILOT** reports flying a dual training sortie from Oxford, IFR and in receipt of a TS from Boscombe Zone on 126.7MHz, squawking with Modes S and C. The visibility was 30km in VMC and the ac was coloured white/blue. About 6nm SE of Boscombe heading 050° at FL50 and 160kt a student seated in the rear seat saw a Tutor about 0.5nm away approaching from his 3-4 o'clock and 300-500ft below. The Tutor then executed a manoeuvre to position itself in their 6-7 o'clock at approximately the same level or slightly below. The student did not think there was a risk of collision. Boscombe informed them of traffic and he saw an ac, AC3, which crossed ahead from L to R and slightly above, but the Tutor was probably hidden beneath the starboard wing. This Tutor was not seen by either of the operating crew. The rear-seated student took pictures of the Tutor when it was positioning behind their ac.

UKAB Note (1): The UKAB received the Boscombe RT transcript on the 1st July which revealed that the Airprox had occurred immediately before the PA34 flight made its initial call to Boscombe Zone. ATSI was requested to contact Bournemouth however the ATSU had returned their RT tapes back into service and owing to the delay the controller would not be able to provide a meaningful report.

**HQ 1GP BM SM** reports that this Airprox occurred between a PA34 operating IFR in VMC that reported being in receipt of a TS from Boscombe Zone and a Tutor operating VFR in VMC under a "listening watch" with Boscombe Zone. All levels are based upon SSR Mode C except where otherwise stated.

The "listening watch" was introduced for Middle Wallop based Tutor ac conducting GH in the vicinity of Boscombe Down, to facilitate coordination for the latter unit's IFR traffic when required. There is no form of flight following or undertaking to provide an ATS inherent in this "listening watch"; the Tutors simply "check-in" on the ZONE frequency and are acknowledged. However, following the unit's investigation into this occurrence and that of Airprox 2011029, they became concerned that their controller's perception of duty of care had blurred the line between their responsibilities toward ATSOCAS mandated within CAP774 and that of a "Listening Watch." Consequently, this concept has been stopped, with Boscombe applying ATSOCAS iaw CAP774 and a manning study being undertaken at Middle Wallop to facilitate greater provision of ATSOCAS by that unit to their Stn-based ac.

At 0824:40, Bournemouth pre-noted Zone with details of the PA34 routeing toward Oxford. Zone passed Bournemouth a new SSR 3A for the PA34 of 2651 and the conversation ended with Zone instructing Bournemouth to freecall the PA34 to, "126.7...*clean and clear.*" This is acknowledged, with Bournemouth stating, "126.7 *once clear, thanks.*"

At 0838:24 the PA34's SSR 3A changed from Bournemouth's code to a Boscombe Zone SSR 3A of 2651. At this point the Tutor is 2.4nm NE of the PA34 indicating FL047, with the PA34 indicating FL050.

[UKAB Note (2): The radar recording shows the PA34 tracking 030° and Tutor tracking 310° converging on a line of constant bearing, the Tutor in a slow climb reaching FL049 at 0839:11 with the PA34 0.5nm to its SW at FL050. Simultaneously AC3, which was seen by the PA34 crew, was crossing 1.25nm ahead and 100ft above. The CPA occurs at 0839:24 with the Tutor passing just behind and below the PA34 with <0.1nm lateral and 100ft vertical separation existing.]

At 0839:45 the PA34 flight called Zone, "PA34 c/s with you flight level 50". Zone replied, "PA34 c/s Boscombe Zone identified flight level 50 traffic service traffic south west 1 mile similar heading 200ft by the way". The PA34 pilot responded, "Traffic service visual with the traffic PA34 c/s" however, by this stage, the Tutor is 0.8nm SW of the PA34 and no longer a factor.

The PA34 pilot stated that the Tutor was sighted by a student in the rear of the ac, in the 3 to 4 o'clock position, at a range of approximately 0.5nm. Given the relative positions of the ac, this sighting was approximately co-incident with the CPA. The Tutor was not sighted by the handling crew at any point during the incident sequence. Moreover, the PA34 pilot's report makes no mention of having received TI on the Tutor from Bournemouth.

Unfortunately, whilst the unit were informed about the Airprox within 3 days of the occurrence, their incident reports were not completed until just over 2 months after the event. Consequently, the involved Boscombe controllers could not recall any details of the incident and so there is no record, other than the transcript, of Zone's workload.

Although the language used in the prenote between Bournemouth and Boscombe was ambiguous, it is reasonable to argue that the intent behind it was clear; that the PA34 flight could be free-called to Zone once clear of CAS and if clear of confliction. At the point when the Boscombe SSR 3A code was set by the PA34 flight, 2.4nm lateral separation existed between the PA34 and the Tutor, with the confliction evident on the radar replay. While it has not been possible to determine whether Bournemouth provided TI to the PA34 flight on the Tutor prior to releasing them to Boscombe Zone, nor what their taskload or physiological state was, based upon the available evidence it is the contention of BM SM that the PA34 was released by Bournemouth in confliction with the Tutor.

Whilst information to determine the point at which Bournemouth instructed the PA34 to contact Zone was not available to this investigation, the PA34 was squawking the Boscombe assigned SSR3A for 83sec prior to initial contact with Zone. This length of time can be viewed as an aggravating factor to the occurrence, in terms of its effect on delaying the provision of TI to the PA34; however, the source of this delay could not be determined.

These issues notwithstanding, both crews were expected to discharge their responsibilities to “see and avoid” other traffic and, in this instance, neither crews became visual until around the CPA, with providence the only safety barrier.

**HQ AIR (TRG)** agrees that whilst the Tutor pilot reports the PA34 passing from his 7 o'clock to 2 o'clock, this geometry is not substantiated by the radar data. The radar trace indicates the PA34 passing from the Tutor's 10 to 4 o'clock, almost directly overhead. It is unlikely that he sighted the PA34 before the CPA. The PA34 passenger report is also not consistent with a sighting of the Tutor at 0.5nm assuming that the reported 3-4 o'clock is correct. From the radar trace, the Tutor was only in the 3-4 o'clock at or beyond the CPA, when the range was significantly less. The lookout scans of both crews were therefore ineffective. The hazard posed by recognised weaknesses in the “see and avoid” system are being mitigated by the fitment of Traffic Avoidance System (TAS) to the Tutor fleet, with fleet embodiment expected in Oct 11. Action is also ongoing to provide a more effective ATS either from Boscombe Down or Middle Wallop.

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

Information available included reports from the pilots of both ac, transcripts of the Boscombe Down RT frequencies, radar video recordings and reports from the appropriate ATC authority.

The Board were disappointed that Boscombe Down ATSU had filed their reports late, which had prevented reports being available from Bournemouth. Without any input from Bournemouth, Members could only assess this Airprox on the limited information available. It was clear that after the pre-note to Boscombe, there had been no radar handover and the PA34 flight had been free-called so the level of service would be established during the initial RT exchange. This first call to Boscombe, however, occurred after the subject ac had passed at the CPA. Both ac were flying in Class G airspace where pilots are responsible for maintaining their separation from other flights through see and avoid. Although the Tutor would have been shielded from view by the PA34's wing and engine configuration during the later stages of the encounter, Members agreed that the Tutor was there to be seen for some considerable time prior to this as it converged from the PA34 crew's front R quarter. However, it appeared to be on a line of constant bearing where the ac would appear as a stationary object in the pilot's field of view with no relative movement making it difficult to visually acquire during a lookout scan. The student seated in the rear of the PA34 saw the Tutor but it passed unsighted to the operating crew, a part cause of the Airprox. Similarly, the PA34 was there to be seen by the Tutor pilot, approaching on a constant bearing from his forward L quarter; however, he saw it only as it passed O/H, effectively a non-sighting and the other part cause of the Airprox.

The TI passed to the PA34 flight on the Tutor to its SW was not assimilated by its crew. They reported 'visual' with the traffic but this was another ac, AC3, that had passed ahead from L to R and slightly above and which was by then to their SE. The Tutor pilot's sighting of the PA34 occurred at the CPA, too late to take avoiding action, but he instinctively levelled-off his ac. These non-sightings by both crews as the ac passed by luck with minimal separation, corroborated by the radar recording, left the Board in no doubt that an actual risk of collision existed during this encounter.

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

Cause: A non-sighting by the PA34 crew and effectively a non-sighting by the Tutor pilot.

Degree of Risk: A.