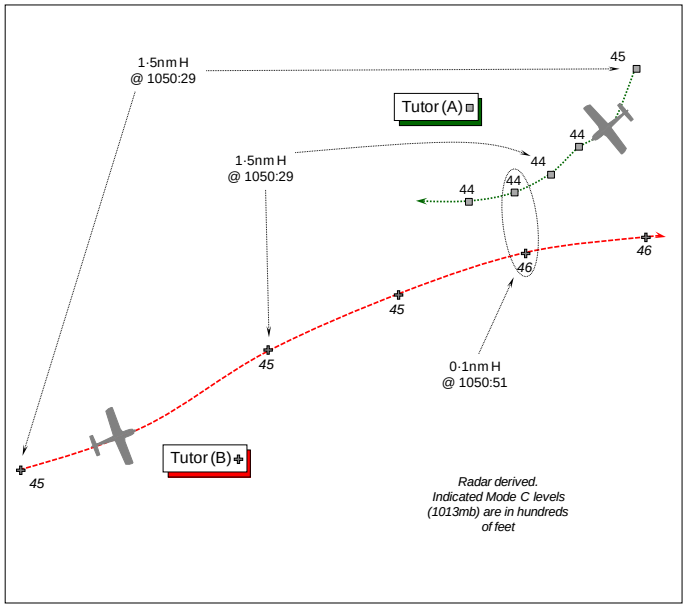
AIRPROX REPORT No 2011027

Date/Time:	1 Apr 2011 1050Z	
Position:	5056N 00152W (9½nm N of Bournemouth Airport)	
Airspace:	London FIR	(*Class:* G)
	Reporting Ac (A)	*Reporting Ac (B)*
Type:	Grob Tutor TMk1	Grob Tutor TMk1
Operator:	HQ Air (Trg)	HQ Air (Trg)
Alt/FL:	4500ft RPS (1014mb)	5000ft RPS (1014mb)
Weather:	VMC	VMC
Visibility:	30km	30km
Reported Separation:	120ft V	200-300ft
Recorded Separation:	200ft V @ 0·1nm H	



BOTH PILOTS FILED

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE PILOT OF GROB TUTOR T Mk1 (A), a QFI, reports that he was conducting a basic flying grading exercise in VMC above overcast cloud cover with tops to 3000ft amsl. He was in receipt of a 'listening watch' from Boscombe ZONE, on UHF and a squawk of A2677 selected with Mode C; elementary Mode S is fitted, but TCAS is not.

Flying level at 4500ft PORTLAND RPS (1014mb), heading 270° at a position about 270SAM24d [the Airprox occurred at 271SAM20d] with the candidate in control, maintaining straight and level flight, a late spot of conflicting traffic necessitated avoiding action being taken by him as the P-I-C. The conflicting ac – another Grob Tutor – was first sighted 200m ahead and to avoid it he dived to the R as simultaneously, the other ac climbed. Minimum vertical separation was about 120ft and the Risk 'very high'. Subsequently, he set course approximately E to continue the teaching element of the sortie. The conflicting traffic was identified as an ac from his Unit and the decision was made to discuss the Airprox on the ground before reporting action was initiated.

He added that the contrast between the cloud tops and the sky was affected by milky cirrus cloud above the horizon. His ac is coloured white; the HISLs and landing light were on.

THE PILOT OF GROB TUTOR T Mk1 (B), a QFI, reports he was teaching flying grading exercise 2 (effects of controls 2) to a candidate whilst keeping a listening watch with Boscombe ZONE on 256·5MHz; a squawk of A2677 was selected with Mode C; elementary Mode S is fitted, but TCAS is not.

Flying wings level at 5000ft (1014mb) above solid 8/8th cloud, heading 120° at 100kt to the N of Bournemouth, he became aware of another Tutor ac in his 11 o'clock, 100m away, slightly below the horizon and closing on a constant bearing. He broke to the R immediately and estimated that the two ac passed within 200 to 300ft of each other. As the other ac was well camouflaged against the undercast he saw it later than he would have liked. Initially he did not think an Airprox report was necessary, but he decided to discuss the situation with this colleague on the ground after landing; the

Airprox was filed subsequently and he assessed the Risk as medium. His ac is coloured white; the HISLs and landing light was on.

THE GROB TUTOR PILOTS' UNIT commented that the Tutor colour-scheme is notoriously difficult to spot under the conditions experienced during this Airprox. Middle Wallop asked if the colour-scheme could be altered but was told this was not possible, although it is interesting to note that the display Tutor has a different colour scheme. None of the Middle Wallop Tutor fleet currently has a Collision Avoidance System fitted, but the Unit's ac are scheduled to be fitted starting in June 2011.

THE BOSCOMBE DOWN ZONE CONTROLLER (ZONE) reports that he was operating LARS during a quiet period with little traffic when two Grobs called on UHF 256·5MHz. These flights were operating on a 'Listening Watch', where no ATS is provided. However, as they have a duty of care, he requested these two ac to squawk 'ident'. A further Grob Tutor pilot called up whom he also requested to squawk 'ident'. Observing two of these Grob Tutor ac in close proximity to each other, he called the other ac to the two crews; one called visual and the other just acknowledged his transmission. Shortly afterwards he handed over the position. Subsequent to the Airprox being filed, he listened to the RT tape recordings, but no mention of any Airprox was made by the pilots of any Tutor ac whilst on the frequency.

HQ 1GP BM SM reports that this Airprox occurred between a pair of Middle Wallop based Tutors operating VFR in receipt of a "Listening Watch" from Boscombe ZONE.

'Listening Watch' was introduced for Middle Wallop based Tutor ac conducting general handling in the vicinity of Boscombe Down, to facilitate co-ordination with Boscombe Down's IFR traffic when required. There is no form of flight following or undertaking to provide an ATS inherent in this 'listening watch'; the Tutor pilots simply 'check-in' on the ZONE frequency and are acknowledged. However, following the unit's investigation into this occurrence and that of Airprox 2011029, Boscombe Down ATC became concerned that their controller's perception of their '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 withdrawn with Boscombe Down ATC applying ATSOCAS iaw CAP 774. A manning study is also being undertaken at Middle Wallop ATC to facilitate greater provision of ATSOCAS by that unit to their own station-based ac.

Both pilots report 30km visibility with nil weather and OVC cloud at 3000ft. The pilot of Tutor (A) reports that their visual acquisition task was hampered with the contrast between the cloud tops and the sky affected due to milky cirrus cloud above the horizon. The pilot of Tutor (B) reports a similar difficulty due to the lack of contrast between the colour scheme of Tutor (A) and the white background, compounded by their constant relative bearing.

Tutor (B) called ZONE initially at 1027:57 and, as ZONE was 'quiet…with little traffic', was instructed to squawk ident. At 1035:33, [over 15min before the Airprox occurred] the crew of Tutor (A) called ZONE and was also asked to squawk ident. Shortly after the pilot of Tutor (A) acknowledged this instruction, ZONE passed TI to Tutor (A) stating, "[callsign (A)] *Tutor 12 o'clock 1 mile manoeuvring indicating 8 hundred feet, correction 5 hundred feet below*." The pilot of Tutor (A) replied that they were visual. ZONE then immediately passed TI to Tutor (B), stating that the ac that was the subject of that TI was "*visual with you*," making it clear that it was Tutor (A). This TI was acknowledged by Tutor (B) at 1036:24 and there were no further transmissions from ZONE to the subject Tutors until 1054:44.

ZONE states in their report that shortly after passing TI to the Tutors, they handed over the console position to a second controller. Subsequently, ZONE has confirmed that this handover took place between 1036:24 and 1054:44, with the second controller's voice evident on the tape at 1054:44. However, neither controller nor the Supervisor could state exactly when the transfer of control position occurred, nor were any details of the handover evident on the RT tape transcript due to the absence of 'live mic' recording.

The CPA occurred at 1050:51, with 200ft vertical separation and a minimum horizontal separation of 0·1nm.

Notwithstanding the conceptual limitations of the 'Listening Watch', perceiving a duty of care to exist, the first ZONE controller identified the subject Tutors and passed them TI on each other, with Tutor (A) replying that they were visual with Tutor (B). Although it has proved impossible to determine the point at which the handover of control position took place, the limitations of the 'Listening Watch' as briefed to Boscombe Down Controllers meant that they were not required to provide any flight following or TI. Moreover, the Tutor pilots' reports and subsequent conversation with the pilot of Tutor (B) have highlighted that the aircrew were under no illusion that they were in receipt of an ATS. Furthermore, given the time elapsed from the passing of TI to the CPA it is clear that the TI passed between 1036:10 and 1036:23 was irrelevant to the air situation at the time the Airprox occurred.

From a BM perspective, notwithstanding the first ZONE controller's perceived 'Duty of Care', Boscombe Down ATC had no responsibility towards the provision of TI to the Tutor crews.

HQ AIR (TRG) comments that the procedures for avoiding mid-air collisions are currently being reviewed at Middle Wallop. The embodiment of TCAS should help reduce this risk further but only against transponding traffic.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

ZONE had conscientiously passed a warning to the Tutor pilots about each over 15min before the close quarters situation, despite the 'Listening Watch' provided, but this was plainly not relevant to the air situation when the Airprox occurred later. A 'Listening Watch' was not an effective ATS and contributed nothing to the pilot's SA. Members were encouraged that the Unit, in the interests of standardisation, has subsequently reviewed their procedures and applied the extant FIS stipulated for use nationally in conformity with CAP774. The HQ Air Trg Member added that the outcome of the review initiated by No1 EFTS subsequent to Airprox 2011029, whereby the Army Flying Grading organisation was seeking an increase in controller manpower with a view to Middle Wallop ATC providing a TS to such flights, was still awaited. There was, however, a fine balance to be struck between achieving the primary training goals of the sortie and the provision of a compatible ATS to enhance the pilots' SA with the attendant increase in RT and potential interruption to flying instruction. The Traffic Alert System (TAS) embodiment to the Tutor fleet would probably have averted this Airprox and a current Tutor pilot Member, familiar with TAS, extolled its worth. [Post Meeting Note: The UKAB was subsequently advised that two of Middle Wallop's Tutor airframes had already been equipped with TAS, two are currently being fitted out, with the last due for fitment by the end of September 2011.]

The Board was briefed by the HQ Air Training Member that the issue of a more conspicuous colour scheme for service Grob Tutor ac has been considered in great detail. Unfortunately, there was no 'easy fix' as the dark colours that have been applied to other training ac, eg black to Hawk and Tucano ac, can adversely affect the Glass Reinforced Plastic (GRP) structure of the Tutor because of the heat absorption characteristics of dark colours.

Turning to the Airprox itself, it was apparent that both pilots were operating VFR and approaching each other head-on, or nearly so, separated vertically by only 100ft Mode C. Each was therefore responsible for sighting the other ac in sufficient time to afford appropriate visual separation. The pilot of Tutor (A) reports that Tutor (B) was first sighted 200m ahead and to avoid it he dived to the R as, the other ac climbed. The pilot of Tutor (B) notes that he saw the other ac marginally later at a range of 100m and broke to the R immediately, estimating that the two ac passed within 200 to 300ft of each other. This led Members to agree, unanimously, that this Airprox had been the result of a

late sighting by both pilots. Whilst not doubting the veracity of the report from the pilot of Tutor (A) in any way, the dive was not readily apparent on the radar recording, whereas the R turn was shown clearly taking effect at the CPA of 0·1nm – 185m. At this point Tutor (B)'s Mode C evinces a climb of 100ft. It was indeed fortunate that each pilot had chosen to take the action that he did, complimentary to that of his colleague and in conformity with the Rules of the Air, thereby averting a more serious situation. Nevertheless, the Board concluded that at these distances the safety of the ac involved had been compromised.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Late sightings by the pilots of both ac.

Degree of Risk: B.