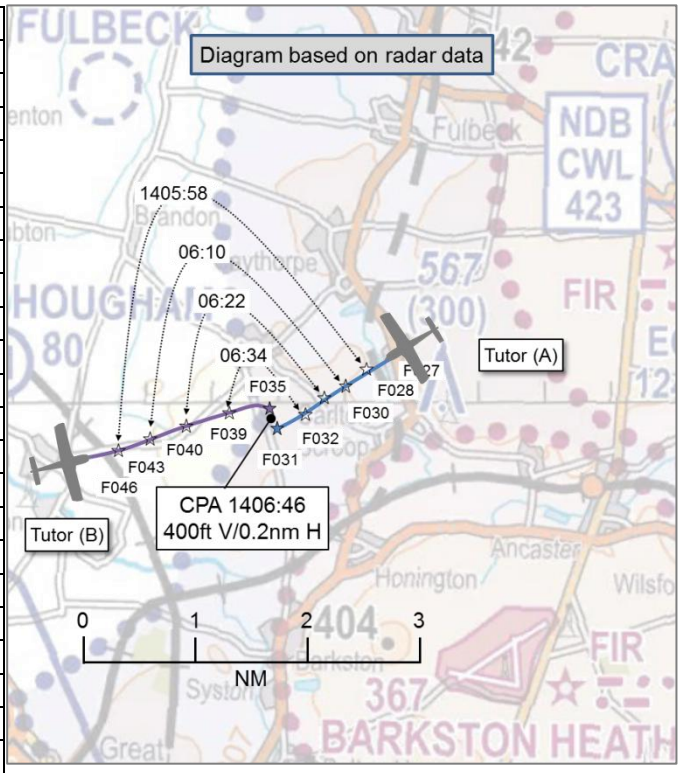
## AIRPROX REPORT No 2015101

Date: 2 Jul 2015 Time: 1407Z Position: 5300N 00037W Location: 5nm SW Cranwell

## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

| Recorded | Aircraft 1 | Aircraft 2 |
|---|---|---|
| Aircraft | Tutor (A) | Tutor (B) |
| Operator | HQ Air (Trg) | HQ Air (Trg) |
| Airspace | London FIR | London FIR |
| Class | G | G |
| Rules | VFR | VFR |
| Service | Traffic | Traffic |
| Provider | Cranwell DEP | Cranwell DEP |
| Altitude/FL | FL035 | FL031 |
| Transponder | A, C, S | A, C, S |
| **Reported** | | |
| Colours | White | White |
| Lighting | NK | HISLs, nav |
| Conditions | VMC | VMC |
| Visibility | 20km | 20km |
| Altitude/FL | 2500ft | NK |
| Altimeter | RPS (1012hPa) | NK (NK hPa) |
| Heading | 240° | 090° |
| Speed | 80kt | NK |
| ACAS/TAS | TAS | TAS |
| Alert | TA | TA |
| **Separation** | | |
| Reported | 200ft V/<0.1nm H | 350ft V/0.5nm H |
| Recorded | 400ft V/0.2nm H | |




**THE TUTOR(A) PILOT** reports conducting a training flight. The student departed on a SID and was in the climb to 5000ft. Passing 2000ft, on a south-westerly heading, they heard another Tutor being passed Traffic Information on their location. At 2500ft they were told of its location and the instructor directed the student to level the aircraft at 3000ft, to allow 1000ft separation. Shortly after this they were told the other Tutor was at a range of 2nm, in the 12 o'clock, 1000ft above. The TAS showed the other Tutor still descending and closing inside 1nm, at which point the TAS gave a Traffic Alert. The instructor became visual with the other Tutor in a descending turn, pointing towards his aircraft, with the TAS showing 300ft separation. He took control and maintained heading until he was sure of the other pilot's intentions so that he could take appropriate action to avoid any collision. As the TAS read 200ft, the other Tutor turned away and continued with Cranwell Tower.

He assessed the risk of collision as 'Low'.

**THE TUTOR(B) PILOT** reports conducting an Air Experience Flight, returning to base from the west-southwest. He received information on a similar type departing from the airfield which was already showing on TAS and was discussed with the Air Cadet passenger. The aircraft was immediately visually identified in the climb at a range of about 3nm, to the right of the nose, separated horizontally, with more than 1000ft separation. Because he was visual, TAS had alerted and he had Traffic Information on the other aircraft, he continued the descent, maintaining lateral separation of not less than 0.5nm at all times. As they passed abeam, separated vertically by some 300-400ft, he turned through 90° in order to 'show the other Tutor to the passenger'. The nose of his aircraft remained behind the other Tutor at all times and they continued to diverge. The pilot noted to the passenger that although there was a 'big sky', look-out and use of TAS were essential in maintaining SA and separation. He stated that no Airprox had occurred because he was visual with the other aircraft.

He assessed the risk of collision as 'Low'.

**THE DEPARTURES CONTROLLER** reports that he took over from the off-going controller with Tutor(B) conducting general handling to the west-southwest by about 8-10nm. He could not recall the altitude block. Tutor(A) was pre-noted and got airborne on a SID. Both Tutor pilots were operating under a Traffic Service, and both aircraft were called to each other on the same frequency.

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

**THE SUPERVISOR** reports he had no recollection of the incident. He subsequently spoke with the Controller who indicated that it was an innocuous event and did not feel it necessary to highlight. ATC were unaware an Airprox had been reported until later on.

**Factual Background**

The weather at Cranwell was recorded as follows:

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METAR EGYD 021350Z 29004KT CAVOK 23/15 Q1017 BLU NOSIG
METAR EGYD 021450Z 16002KT 9999 FEW030 SCT090 24/16 Q1017 BLU NOSIG
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A transcript of the Cranwell Departures frequency is shown below:

| From | To | Speech Transcription | Time |
|---|---|---|---|
| Tutor (A) | DEP | Cranwell departures, [Tutor (A) C/S] uh SID 1B, passing 1000 uh passing 600 feet. | 14:03:23 |
| DEP | Tutor (A) | [Tutor (A) C/S], Cranwell departures, identified traffic service, depart SID 1B | 14:03:31 |
| Tutor (A) | DEP | Traffic service [Tutor (A) C/S] | 14:03:34 |
| DEP | Tutor (B) | [Tutor (B) C/S] previous reported traffic west 1 and half mile, south east bound, 3 tutors slightly below, new Barnsley pressure 1012. | 14:03:40 |
| Tutor (B) | DEP | [Tutor (B) C/S], just confirm the lateral displacement | 14:03:50 |
| DEP | Tutor (B) | West 1 and a half miles, south east bound | 14:03:55 |
| Tutor (B) | DEP | Uh, Roger I will take a southerly heading and continue {*last part unreadable*} | 14:03:58 |
| DEP | Tutor (B) | Roger Barnsley pressure 1012 | 14:04:01 |
| Tutor (B) | DEP | 1012 copied | 14:04:04 |
| DEP | Tutor (B) | [Tutor (B) C/S], further traffic just departed Cranwell similar type, east 2 miles, south west bound, 2000 ft below climbing | 14:05:40 |
| DEP | Tutor (A) | [Tutor (A) C/S] traffic west 2 miles maneuvering east bound similar type 2000 ft above | 14:05:57 |
| Tutor (A) | DEP | [Tutor (A) C/S] | 14:06:05 |
| DEP | Tutor (B) | [Tutor (B) C/S] traffic east 1 mile south west bound, tutor 1000 ft below climbing out | 14:06:17 |
| Tutor (B) | DEP | [Tutor (B) C/S] is looking and uh, sortie complete requesting a mast(?) join for downwind, visual with that aircraft | 14:06:22 |
| DEP | Tutor (B) | [Tutor (B) C/S] roger downwind join approved Runway correction, code R 26, colour blue, QFE 1010 | 14:06:34 |
| Tutor (B) | DEP | Downwind join [Tutor (B) C/S] | 14:06:42 |
| DEP | Tutor (B) | [Tutor (B) C/S] no radar traffic, report visual with the aerodrome | 14:06:45 |
| Tutor (B) | DEP | Visual with the aerodrome [Tutor (B) C/S] | 14:06:50 |
| DEP | Tutor (B) | [Tutor (B) C/S] squawk circuit continue with Cranwell tower stud 2 | 14:06:52 |
| Tutor (B) | DEP | Circuit, Stud 2 [Tutor (B) C/S] | 14:06:56 |
| Tutor (A) | DEP | [Tutor (A) C/S] visual with the traffic and uh, request own navigation south west, uh south east | 14:07:04 |
| DEP | Tutor (A) | [Tutor (A) C/S] roger own navigation south east | 14:07:10 |

## Analysis and Investigation

### Military ATM

The incident occurred on 2 Jul 15 at 1410 between two Tutor aircraft, both of who's pilots were under a Traffic Service from RAF Cranwell ATC. The Radar Analysis Cell captured the incident on radar based upon the London QNH 1018 hPa.

At 1405:40 (Figure 1), the controller transmitted, "{Tutor B}*, further traffic just departed Cranwell similar type, east 2 miles south west bound, 2000 ft below climbing*."

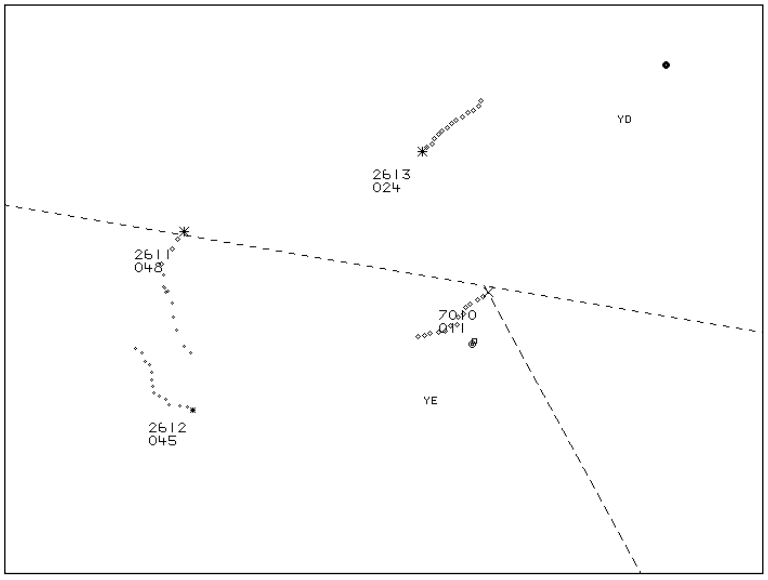


Figure 1: Traffic Information at 1405:40 (Tutor A squawk 2613; Tutor B squawk 2611)

At 1405:57 (Figure 2), the controller transmitted, "{Tutor A} *traffic west 2 miles manoeuvring east bound similar type 2000 ft above*."

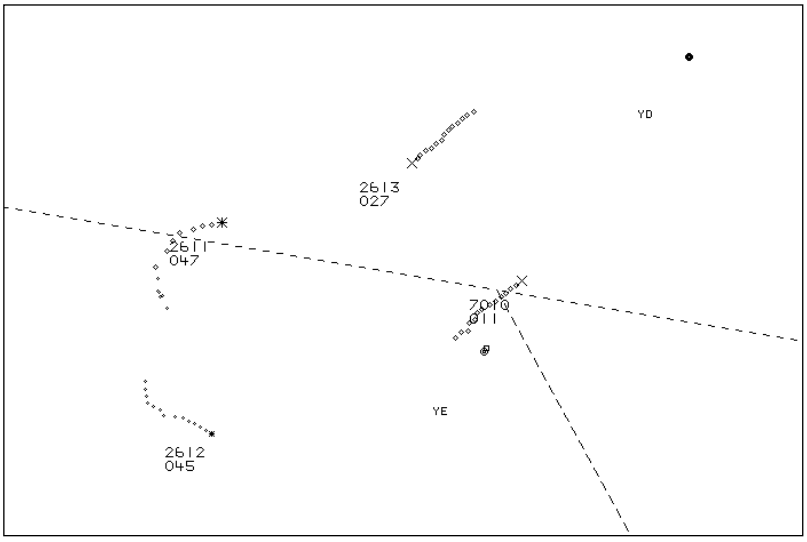


Figure 2: Traffic Information at 1405:57

At 1406:17 (Figure 3), an update was provided, "{Tutor B}*, traffic east 1 mile south west bound, tutor 1000 ft below climbing out."*

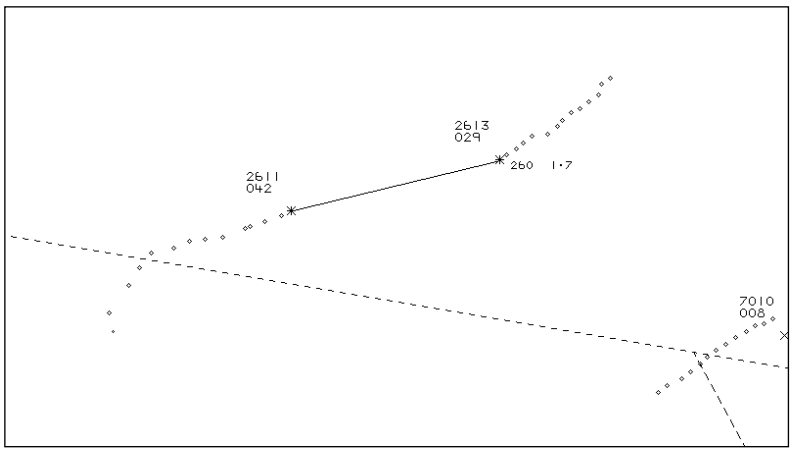


Figure 3: Traffic update at 1406:17

At 1406:22 (Figure 4), Tutor(B) transmitted, "{Tutor B}*, is looking and uh, sortie complete requesting a mast (?) join for downwind, visual with that aircraft."*

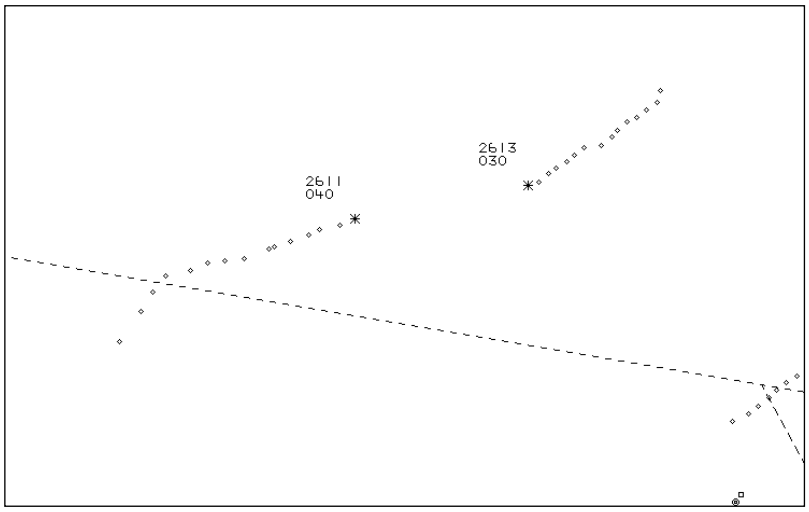


Figure 4: Tutor B confirming visual at 1406:22

The CPA was estimated at 1406:45 (Figure 5) with 0.3nm and 500ft

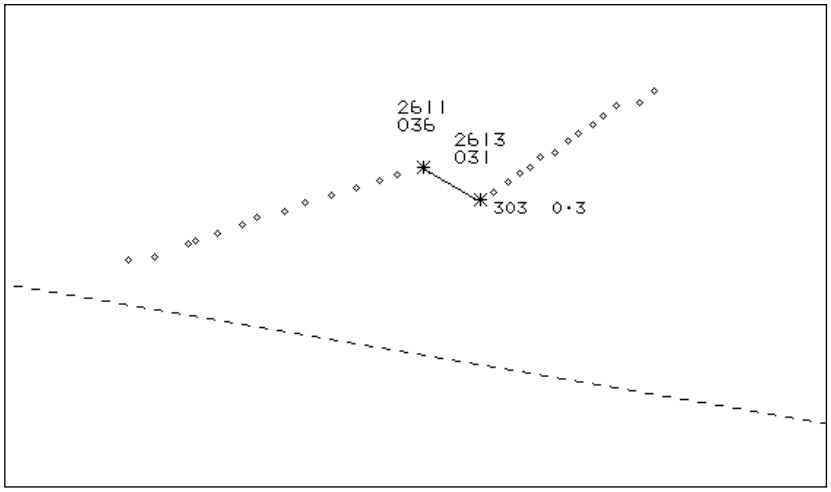


Figure 5: Geometry at 1406:45

At 1407:04, Tutor(A) confirmed, "*visual with the traffic and uh, request own navigation south west, uh south east."*

The controller provided accurate and updated Traffic Information, as per the provision of a Traffic Service. TAS had also alerted both crews to the potential confliction. Tutor(B) reported becoming visual at 2-2.5nm and Tutor(A) was not visual as TAS showed the other aircraft closing inside 1nm; Tutor(A) eventually became visual with Tutor(B). The barriers of TAS information and visual acquisition combined to assist the pilots in maintaining separation in Class G airspace.

**UKAB Secretariat**

Both Tutor pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard[1]. If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right[2], notwithstanding their responsibility for collision avoidance. The CPA was assessed as 400ft vertically and 0.2nm horizontally from area radar recordings made available to UKAB.

## Comments

**HQ Air Command**

In this incident both pilots were on the same frequency and ATC had provided a Traffic Service to both, informing them of each other's position. Whilst Tutor(B) pilot was visual with Tutor(A) and was happy with his separation, Tutor(A) pilot was relying on a back-up of TAS to build his SA. A little more communication between pilots and perhaps a slightly wider berth by Tutor(B) would have helped to alleviate Tutor(A) pilot's concern.

## Summary

An Airprox was reported when two Tutor aircraft flew into proximity at 1407 on Thursday 2nd July 2015. Both pilots were operating under VFR in VMC in Class G and both were in receipt of a Traffic Service from Cranwell Departures.

## 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.

Members quickly agreed that both Tutor pilots had been given relevant and timely Traffic Information and that that they were both visual with the other aircraft before CPA, albeit with Tutor(A) pilot visual at a late stage. Members also agreed that it was probably this late sighting which had increased the Tutor(A) pilot's concern at the proximity of Tutor(B), which he could see closing on his TAS. Although the Tutor(B) pilot had informed ATC that he was visual about 20sec before CPA, members felt that this may not have materially affected Tutor(A) pilot's by then increasing concern, and that it was this concern which, members decided, had been the cause of the Airprox.

In the event, Tutor(B) pilot became visual, and flew a descending right-hand turn towards Tutor(A) as they passed, no closer than 0.2nm. Members agreed that there was no risk of collision, but wondered whether Tutor(B) pilot might have been more considerate of the other aircraft and the fact that it's pilot might not be visual with him, or as comfortable with their relative geometry; a simple turn away or levelling off by Tutor(B) pilot at an earlier juncture would have helped to resolve Tutor(A) pilot's concerns whilst still enabling Tutor(B) pilot to show the other Tutor to his passenger. Regarding the risk, members debated at some length whether action had had to be taken to prevent collision, or whether this event could be considered as normal operations. After considerable discussion, it was agreed in the end that normal procedures and safety standards had in fact pertained, but they noted that the Tutor(B) pilot had not needed to fly in such proximity to Tutor(A),

[1] SERA.3205 Proximity.
[2] SERA.3210 Right-of-way (c) (1) Approaching head-on.

and that it was helpful to avoid other aircraft not by one's own comfort margin but with consideration for the comfort margin of the other pilot (who might not have the same level of situational awareness as oneself).

Members also commented that, notwithstanding the risk assessment, Tutor(A) pilot had been absolutely correct to file an Airprox; in his opinion, the distance between aircraft, as well as their relative positions and speed, had been such that the safety of the aircraft involved may have been compromised[3]. It was evident to the Board that an Airprox had occurred, contrary to Tutor(B) pilot's assertion otherwise.

## PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Tutor (B) pilot flew close enough to cause Tutor (A) pilot concern.

Degree of Risk: E.

[3] The definition of Airprox is established in ICAO Doc 4444: 'An Airprox is a situation in which, in the opinion of a pilot or air traffic services personnel, the distance between aircraft as well as their relative positions and speed have been such that the safety of the aircraft involved may have been compromised.'