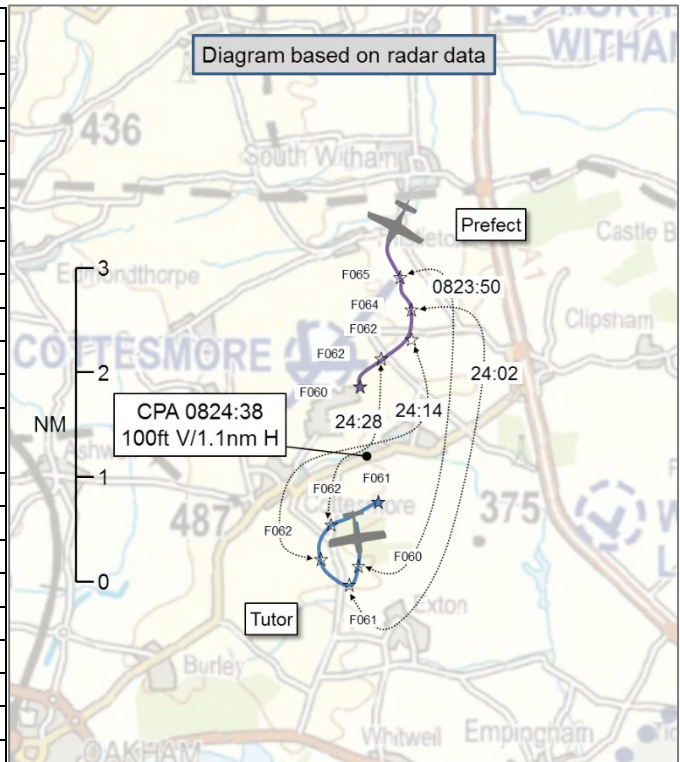


**AIRPROX REPORT No 2018080**

Date: 11 May 2018 Time: 0825Z Position: 5243N 00038W Location: 8nm NW Wittering

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	Tutor	Prefect
Operator	HQ Air (Trg)	HQ Air (Trg)
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Traffic	Traffic
Provider	Wittering	Cranwell
Altitude/FL	FL056	FL059
Transponder	A, C, S	A, C, S
Reported		
Colours	White	White, blue
Lighting	HISL, landing nav	NK
Conditions	VMC	VMC
Visibility	30km	>10km
Altitude/FL	6000ft	5500ft
Altimeter	RPS (1006hPa)	NK
Heading	090°	NK
Speed	100kt	NK
ACAS/TAS	TAS and FLARM	TAS
Alert	Alert	Alert
Separation		
Reported	<500m'	NK
Recorded	300ft V/1.1nm H	



**THE TUTOR PILOT** reports conducting an instructor conversion sortie, setting up for a spin. The pre-spin 'HASELL+' checks were carried out, including lookout, and at the time they were visual with a Prefect roughly east of Bourne with nothing else in sight or on TAS. The Prefect was noticeable with its blue lower fuselage. The spin was entered and the recovery actioned by the trainee QFI as briefed. As the aircraft regained level flight, an urgent ATC call was heard as well as the TAS alarm sounding with a contact in the immediate vicinity at the same altitude. A second call was made by ATC and this time they recognised it was their callsign. The contact was described as '¼ mile east, same level heading towards'. The instructor took control and immediately entered a 45° AoB turn to the right and dived the aircraft. The Prefect was then seen as it passed close down the left hand side. Prior to the flight, the Tutor crew believed they were the only aircraft using 'Sector 3' on the flightlog system<sup>1</sup>; up to the incident, the Prefect had been seen predominantly using 'Sector 4' at higher altitudes.

He assessed the risk of collision as 'High'.

**THE PREFECT PILOT** reports conducting an instructor conversion sortie. Steep turns and stalls were completed followed by aerobatics using the A1 road as the line feature to remain on datum. On completion of the post-aerobatic checks, the instructor initiated a pre-briefed emergency of 'Power Lever Unresponsive' leading to an attempted air-start, mechanical failure and culminating in a PFL to the disused runway at Cottesmore. This exercise commenced at about 6000ft, heading south, 1nm east of Cottesmore. Either in response to a call from ATC, or the handling pilot in the right seat, the crew observed a Tutor, wings level, about 1000ft below and ½ mile west, tracking south. Again, either from ATC or from TAS, the crew were alerted to the traffic, which they had remained visual with at all

<sup>1</sup> A system shared by Cranwell and Wittering which facilitates deconfliction of traffic by assigning discrete operating areas. Allocation of areas is not exclusive; the system is used as an aid to SA and to deconflict operating areas as far as is practicable.

times. As they turned west towards Cottesmore, the Tutor was seen to turn east and 'wing-waggle' prior to continuing southeast. On completion of the PFL they returned to base and, following a series of circuits, landed and taxied in. The Prefect instructor was informed the following week that an Airprox had been filed.

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

**THE WITTERING APPROACH CONTROLLER** reports being in the Approach position having just taken over the task, bandboxing all radar frequencies. He noted that the Tutor had traffic operating northeast of its position, wearing a Cranwell squawk. At the point of handover, the Tutor was tracking south and the Cranwell traffic was not a factor. Within a minute or so the Tutor turned toward the northeast so the controller called the Cranwell traffic again, believing it to be a Tutor at a similar altitude based on its Mode Alpha and Charlie. He did not receive a response and, after a short period with the possibility of conflict increasing, checked with the Tutor pilot that he had received the Traffic Information on the Cranwell squawk traffic. The Tutor pilot replied 'negative' so the controller called the traffic again, now approximately ½nm to the north. The Tutor pilot called visual and that it was a Prefect. No further R/T was made in relation to this event throughout the remainder of the sortie and the controller was unaware an Airprox had occurred.

**THE WITTERING ATCO I/C** reports that he was not aware that an Airprox had occurred until he returned to work the following Monday.

## Factual Background

The weather at Wittering was recorded as follows:

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METAR EGXT 110850Z 17015KT 9999 FEW028 BKN220 13/05 Q1016 BLU=
METAR EGXT 110750Z 16011KT CAVOK 12/07 Q1016 BLU=
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## Analysis and Investigation

### Military ATM

An Airprox occurred on 11 May 18 at approximately 0815UTC, overhead Kendrew Barracks (formerly RAF Cottesmore) between a Tutor and a Prefect. Both pilots were in receipt of a Traffic Service, the Tutor pilot from RAF Wittering and the Prefect pilot from RAF Cranwell. The Tutor pilot had departed RAF Wittering on a Tutor conversion exercise for a trainee QFI which included spin training. The Prefect pilot was conducting a local navigation and conversion training exercise for a QFI who had recently arrived on the squadron. Overhead Kendrew Barracks, having just completed a spinning exercise, the Tutor crew received both a TAS alert and Traffic Information which alerted them to the proximity of the Prefect.

Figures 1-4 show the positions of the Tutor and Prefect at relevant times in the lead up to the Airprox. The screen shots were taken from a replay using NATS radars, which are not utilised by either military unit and therefore are not necessarily representative of the picture available to the controllers.

Figure 1, at 0820:11, was the first instance of Traffic Information on the Prefect being passed by Wittering Approach to the Tutor pilot. The Traffic Information was accurate but the Tutor pilot reported that he was not visual with the other aircraft.

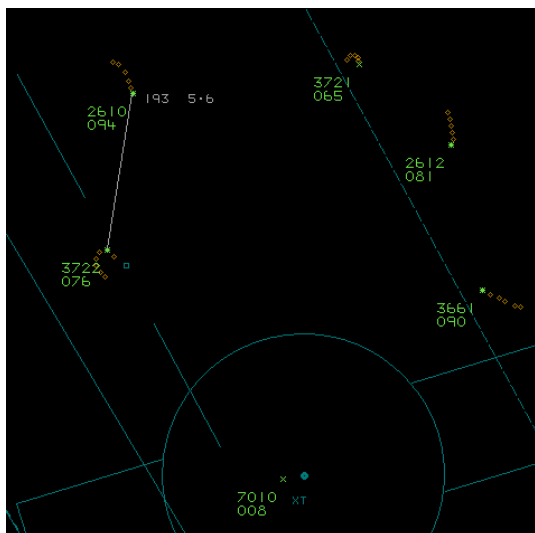


Figure 1

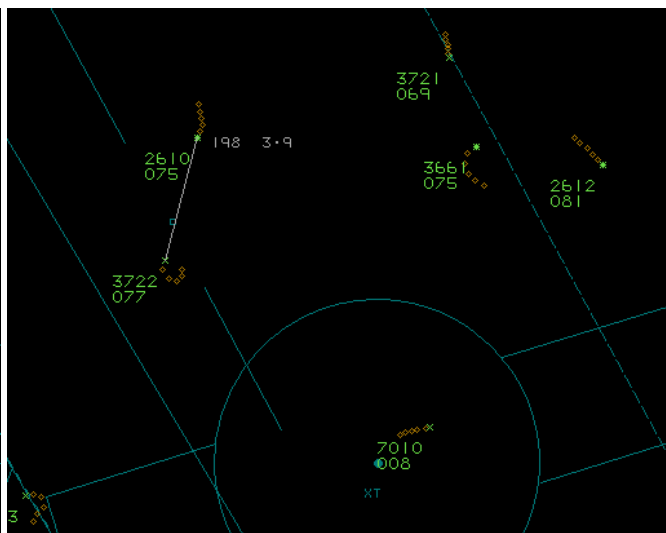


Figure 2

(Tutor 3722, Prefect 2610)

Both aircraft maintained 5nm separation until the Tutor pilot commenced a right-hand turn on to north, timed at 0822:32 and depicted in Figure 2. Accurate Traffic Information was passed by the Cranwell Departures Controller to the Prefect pilot although he did not report visual with the Tutor until 0824:29.

During this period the Wittering Approach Controller conducted a landline call, answered two other radio transmissions and conducted a console handover. As a result, Traffic Information was not passed to the Tutor pilot until 0824:06 as shown in Figure 3.

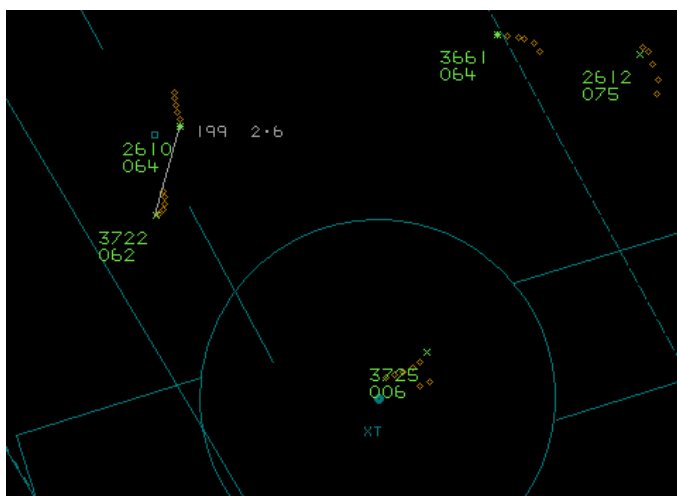


Figure 3

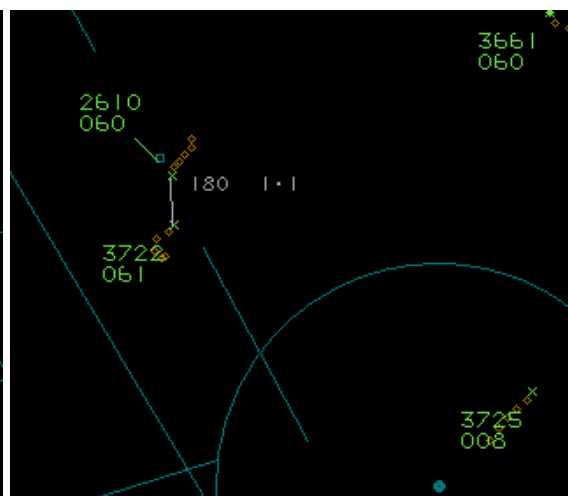


Figure 4

At 0824:35, some 2sec after the previous Traffic Information was passed, the Wittering Approach Controller passed further Traffic Information to the Tutor pilot, following which the pilot reported visual with the Prefect. Some 6sec previously, the Prefect pilot had reported visual with the Tutor to Cranwell Departures. The Traffic Information and the Tutor pilot's report noted the separation as about  $\frac{1}{2}$ nm. The radar replay did not show the separation decreasing below 1.1nm and the Prefect pilot stated he had seen the Tutor at  $\frac{1}{2}$ nm lateral and 1000ft vertical separation.

The Wittering Approach controller was operating with both radar consoles bandboxed onto a single position. This has become routine practice at Wittering due to manning and infrastructure limitations. Traffic Information had been timely and accurate up until the point the Tutor pilot commenced a right-hand turn. At this point, additional distractions in the form of a landline call, 2 R/T transmissions and the control position being handed to another controller prevented updated Traffic Information being immediately passed. That said, when Traffic Information was

passed, the aircraft were still some 2.6nm apart and any further immediate updates were not possible due to another aircraft calling on frequency. In this instance the controller discharged their duty iaw CAP774.

### **UKAB Secretariat**

The Tutor and Prefect pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard<sup>2</sup>.

## **Comments**

### **HQ Air Command**

This incident led to a thorough investigation at the units concerned and included interviews with pilots, crews and operations staff.

Local procedures between 3 and 6 Flying Training Schools (FTS) have established a sectorisation of the airspace intended to improve the SA of all operators with respect to the number of aircraft operating in a given sector. However, this system is not accessible by all users and is updated at the moment the crew depart to their aircraft; thus, the most recent information on sector utilisation becomes available at a time that is too late for the crew to take into consideration. The investigation has recommended that this system be reviewed with a view to developing a more 'real-time' indication of sector population.

Both aircraft were in receipt of a Traffic Service from different radar units. Whilst both controllers issued Traffic Information to their respective aircraft in as timely a manner as could be expected, it is likely that the tactical deconfliction of these two tracks could have been more efficiently achieved had they both been talking to the same controller. However, the amount of traffic in that area is such that it is unlikely that a single controller would be able to provide a surveillance-based ATS to all pilots that might request one, cannot be handled by a single controller so it was inevitable that pilots from different units could be on different frequencies. The lack of prior knowledge of the location and intentions of the opposing aircraft led both pilots to conduct their individual exercises at their discretion which, unfortunately, rapidly brought the 2 aircraft into proximity.

A number of recommendations have been made by the Investigators to address identified weaknesses in the pre-flight procedures, the coordination of flying activity and controller allocation and the alignment of Orders and TAS SOPs between the 2 FTSs. Activity is already underway to address these recommendations.

Finally, it should be noted that there was no declaration of an Airprox on any of the in-use frequencies. This hindered the initial investigation and caused some difficulty in identifying the specific units and controllers involved. Military crews and controllers are reminded that, in accordance with MAA RA1410 paragraphs 26-28, an initial report of an Airprox is to be transmitted to ATC and reports are to be filed by all crews and controllers involved in the Airprox.

## **Summary**

An Airprox was reported when a Tutor and a Prefect flew into proximity at 0825hrs on Friday 11<sup>th</sup> May 2018. Both pilots were operating under VFR in VMC, both in receipt of a Traffic Service, the Tutor pilot from Wittering Approach and the Prefect pilot from Cranwell Departures.

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<sup>2</sup> SERA.3205 Proximity.

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

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

The Board initially discussed the local provision of airspace sectorisation and the role that had in the Airprox. The HQ Air Command member briefed Board members that the system was designed as an aid to aircrew to improve situational awareness of the number and location of military training aircraft. The system was not designed as a means to book an area for exclusive use, and the location of operation was still decided by the aircraft commander on the basis of factors such as suitable local weather conditions. In the course of the Safety Investigation it became apparent that the Tutor and Prefect squadrons' booking system software was not compatible and that, over time, it had been used as a data collection tool on sector usage rather than as the SA tool which it had been designed to be. Notwithstanding, members agreed that in this case, although better awareness of adjacent sector operations may have improved both pilots' SA, they were entitled to flow between sectors in the normal course of operations and so the same geometry could easily have developed. Although, there was no reason to think that a single ATC agency may have picked up the potential conflict at an earlier stage than the independent units had, some members felt that if the 2 pilots had been using the same frequency then they may have gained further situational awareness from each other's transmissions.

Turning to the pilots' actions, members discussed the likely mental model of the Tutor pilot and felt that his concern about the Prefect may have been accentuated due to the coincidence of having just recovered from a spin, received the 'urgent ATC call', and TAS alarm actuation. Members felt that these factors may have created a sense of urgency in the Tutor pilot's mind that had resulted in his perception of reduced separation and his subsequent, quite correct, filing of an Airprox. On subsequent analysis, it was apparent from the radar recording that separation had not reduced below 1nm but, even so, some members felt that a larger separation was desirable when conducting spinning exercises. Others were of the view that 1nm was a suitable margin, and their view prevailed in the subsequent debate wherein the majority opinion was that this incident was probably best described as the Tutor pilot being concerned by the proximity of the Prefect. Although the criteria for reporting had been met, in terms of risk the Board determined that normal procedures, safety standards and parameters had pertained.

The Board was also briefed by the RAF HQ Air Command member that a number of recommendations had been made by the Safety Investigation team, including a review of orders for the use and management of sectors, the introduction of a sector booking 'real-time' map for all users, introduction of an LoA between Cranwell and Wittering and an update to the relevant Flying Order Books. The sectorisation had been introduced as a result of previous Airprox in the area, and the Board were heartened to hear that a system was being brought into place. Recognising that work was underway to make the sector design fully operational, the Board initially discussed whether a recommendation should be made to hasten the work but, in the end, were content that the HQ Air Command representative was closely monitoring the effort and would report progress back to the Board.

The Board also agreed with the final comments from the HQ Air Command report regarding the declaration of Airprox on the frequency in use. Although in this instance sufficient information had been available, the lack of the Cranwell controller's perspective could have been critical; the act of declaring an Airprox on at least one of the frequencies in use would have prompted ATC and pilots to note the details at the time and save relevant records and information.

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

Cause: The Tutor pilot was concerned by the proximity of the Prefect.

Degree of Risk: E.

Safety Barrier Assessment<sup>3</sup>

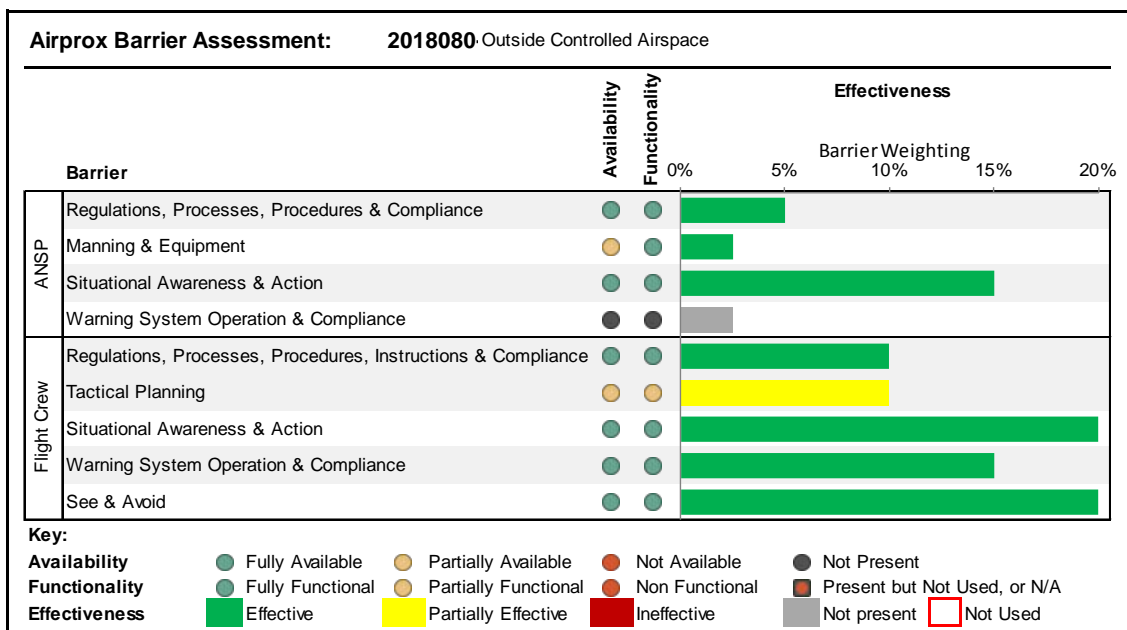
In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

**ANSP:**

**Manning and Equipment** were assessed as **fully effective** but **partially available** due to manning and infrastructure limitations at Wittering which had caused bandboxing of positions.

**Flight Crew:**

**Tactical Planning** was assessed as **partially effective** because neither crew had information on the sector booking of the other.



<sup>3</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).