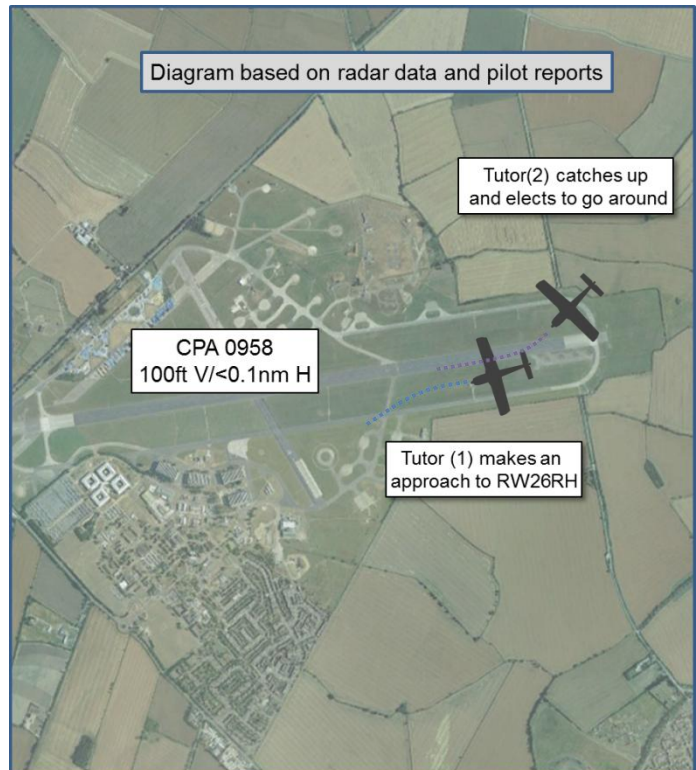


**AIRPROX REPORT No 2014113**Date/Time: 16 Jul 2014 0958ZPosition: 5221N 00006W  
(Wyton)Airspace: Wyton ATZ (Class: G)Aircraft 1                      Aircraft 2Type: Tutor                      TutorOperator: HQ Air (Trg)              HQ Air (Trg)Alt/FL: 200ft                      500ft  
QFE (1016hPa)              QFEConditions: VMC                      VMCVisibility: >10K                      NKReported Separation:

NK V/10ft H                      NK V/100m H

Recorded Separation:

100ft V/&lt;0.1nm H

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

**THE TUTOR (1) PILOT** reports flying a white aircraft with strobes illuminated and transponder selected with Mode 3A, C and S. He was 30 minutes into an instructional sortie, teaching first circuits. The student commenced a final turn using the correct technique, but delayed making the radio call due to other transmissions. The student was just over halfway round the turn, and about to transmit the finals call, when Tutor(2) called finals instead and was told to continue. The instructor looked back over his right shoulder and saw Tutor(2) just starting his finals turn and saw no reason why he should cause them any conflict, so made the finals call and added “number 1” to indicate to the controller that he was ahead. He was cleared to touch and go, and he heard the controller attempt to confirm to Tutor(2) that he was number 2. The student controlled his approach, which was shallow but safe. At 150ft the student exclaimed and the instructor looked up to see Tutor(2) passing directly above and in front of them by a distance of less than 10ft. The instructor took control, turned to the deadside using a 25° angle of bank and commenced a go-around. Tutor(2) continued his approach which also resulted in a go-around.

He assessed the risk of collision as ‘Very High’.

**THE TUTOR(2) PILOT** reports flying a white aircraft at 800ft QFE in the Wyton visual circuit. He recalls flying a normal circuit, overflying the disused radar tower (normal circuit positioning for RW26RH) and was visual with an aircraft ahead. On arrival at the end of the downwind leg he considered the aircraft ahead to have flown too far downwind, therefore elected to extend slightly beyond the normal turning point for the final turn. He did not remember the instruction from ATC to go around but, concerned that he was closing up with Tutor(1), he made his own decision to go-around somewhere in the descending final turn between 400 and 500ft. He estimated the other aircraft to be 100m ahead and slightly left of the nose at the time. The go-around was uneventful and he did not recall seeing the other aircraft after that point.

He perceived the severity of the incident as ‘None’.

**THE TUTOR(2) PILOT’S INSTRUCTOR** reports that Tutor(2) was an inexperienced solo student who was flying a first circuit consolidation trip, but being supervised by an experienced Duty Instructor (DI) in the tower. The controller had observed Tutor(2) catching up with the aircraft ahead and, in agreement with the DI, sent him around. The student pilot doesn’t remember the call, but he elected

to go around of his own accord. Although he may have cut the corner and caught up with the aircraft ahead, he did take appropriate action to go-around when he felt the aircraft were too close. Neither the DI nor the controller believed a dangerous situation had occurred. Following this incident the student flew a dual circuit consolidation sortie, was assessed as “average” and was given more solo circuit consolidation flying, but no further action was deemed necessary.

**THE WYTON CONTROLLER** reports that she was the Duty Aerodrome Controller. RW26RH was in use, and 3 aircraft were in the visual circuit. Tutor(2) called downwind but he was number 2 and informed that there was one ahead. Tutor(1) was late with his downwind call and called shortly afterwards. Tutor(2) again called final ahead of Tutor(1), and she informed him he was to continue. When Tutor(1) called final she cleared him for a touch and go. She reported that the Tutors fly a tight oval circuit at Wyton and, from the visual control room (VCR), the aspect can be difficult to judge but she reiterated to Tutor(2) that he was number 2 on final. It appeared that Tutor(2) was gaining on Tutor(1) and, because Tutor(2)'s instructor was in the VCR, she had a brief discussion about his positioning before telling Tutor(2) to go around. He complied but, simultaneously, she saw Tutor(1) conduct a manoeuvre from final approach to the south side of the runway, he then climbed on the deadside to gain distance from himself and Tutor(2).

She perceived the severity of the incident as ‘Negligible’.

## Factual Background

The weather at Wyton was reported as:

METAR EGUY 160950Z 21009KT 9999 FEW030 22/12 Q1020 BLU

## Analysis and Investigation

### CAA ATSI

The CAA ATSI had access to area radar recording together with written reports from the controller, the ATSU and both pilots. Both Tutor aircraft were operating in the visual right-hand circuit for RW26 at Wyton and were in receipt of an Aerodrome Control Service from Wyton Tower. A Duty Instructor was present in the VCR in order to monitor two foreign students operating in the visual circuit. Tutor(1) was a student flying with an instructor and Tutor(2) was an inexperienced student flying solo.

The Tower controller was providing an Aerodrome Control Service without the aid of surveillance equipment. Tutor 1 and Tutor 2 were following each other in the visual right hand circuit for RW26. At 0956:56, Tutor 1 and Tutor 2 were downwind with another aircraft joining for initials – Figure 1.

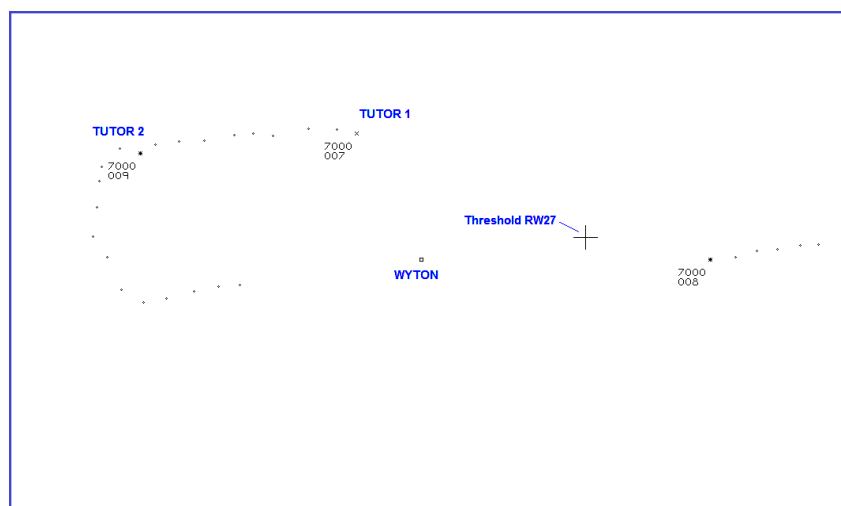


Figure 1 – Swanwick MRT at 0956:56

Tutor 2 was following Tutor 1 but the two aircraft called downwind out of sequence:

Tutor 2 *“(Tutor 2)c/s downwind to land)”*

ATC cleared another aircraft for take off

ATC *“(Tutor 2) c/s..”*

ATC *“(Tutor 2) c/s one ahead surface two nine zero nine knots”*

[Note: another aircraft then called deadside. There was no acknowledgement from Tutor 2 although the pilot’s written report indicated that he was aware he was following Tutor 1 and conducted a normal circuit.]

Tutor 1 *“(Tutor 1)c/s downwind for touch and go”*

ATC *“(Tutor 1)c/s surface wind two zero zero degrees niner knots”*

Tutor 1 *“(Tutor 1) c/s”*

At 0957:45 both aircraft were approaching late downwind and at 0958:04 Tutor 1 had commenced a right turn – Figure 2.

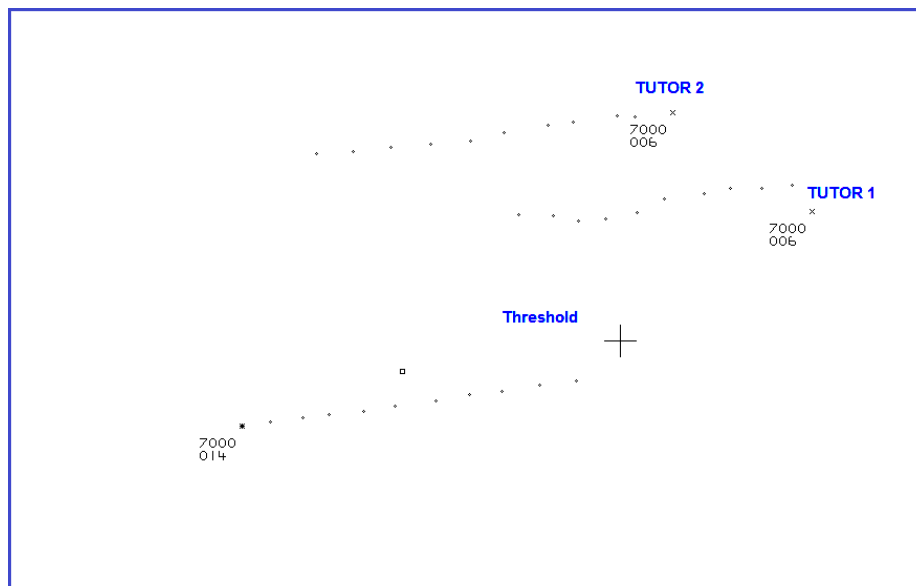


Figure 2 – Swanwick MRT at 0958:04

The Tutor 1 pilot’s written report indicated that his student was about to make a radio call half way around the turn when Tutor 2 called:

Tutor2 *“(Tutor 2)c/s final”*

ATC *“(Tutor 2)c/s continue approach”.*

Tutor 2 *“Continue approach (Tutor 2)c/s”*

The Tutor 1 instructor recalled looking back and sighting Tutor 2 and although he didn’t at that point consider there to be any conflict, he decided to emphasise that he was number one in the sequence:

Tutor 1 *“(Tutor 1) is number one final”*

ATC *“(Tutor 1)c/s roger understood continue approach”*

Tutor 1 *“Continue (Tutor 1)c/s”*

ATC *“(Tutor 1)c/s cleared touch and go”*

Tutor 1 *“Cleared touch and go (Tutor 1)c/s”*

ATC *“(Tutor 2) just confirm you’re number 2 on final”*

[There was no response from Tutor 2]

At 0958:31 Tutor 2 had tightened his turn inside that of Tutor 1 – Figure 3.

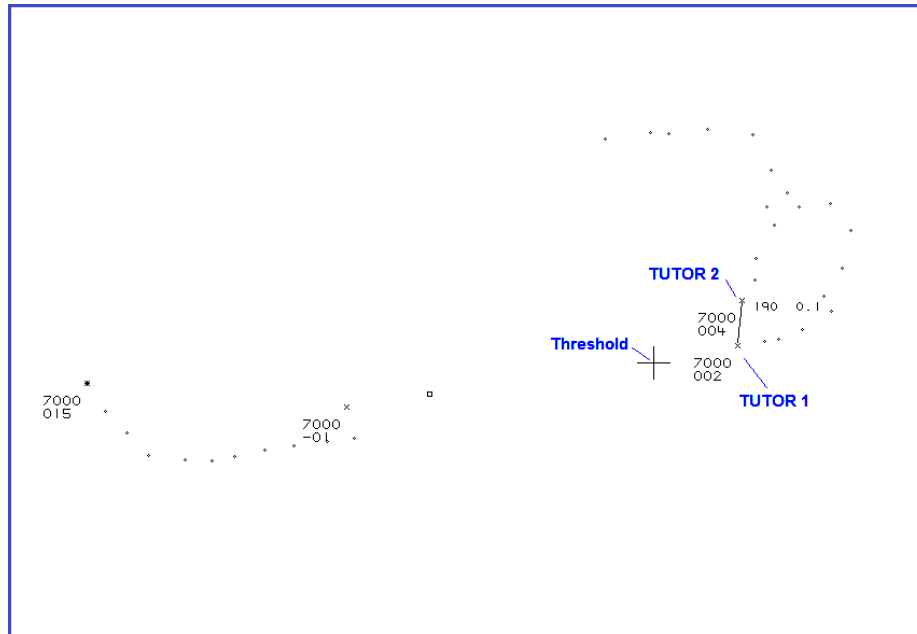


Figure 3 – Swanwick MRT at 0958:31

By 0958:38 the two aircraft were approaching short final. The horizontal distance between the two aircraft was less than 0.1nm (CPA) with a vertical distance of 100ft - Figure 4.

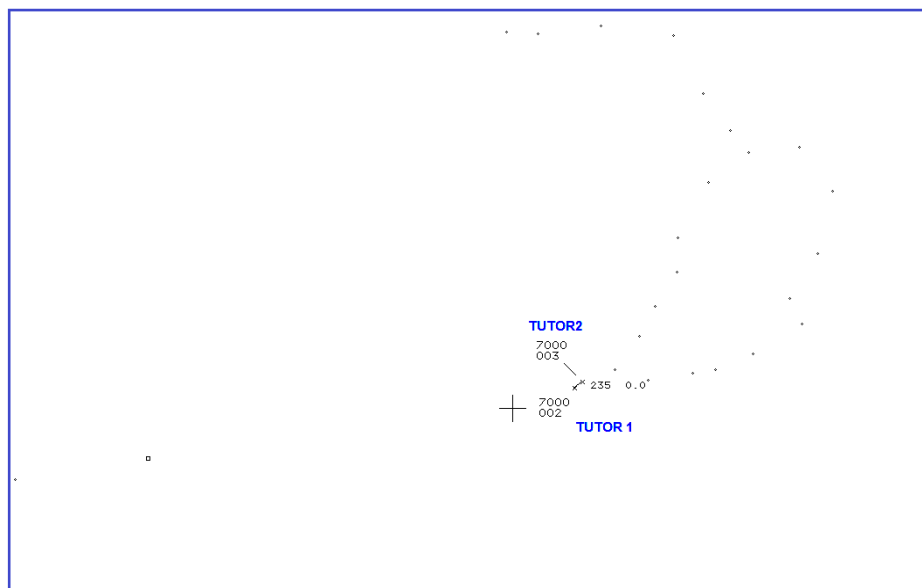


Figure 4 – Swanwick MRT at 0958:38

The Aerodrome controller's written report indicated that the Duty Instructor in the VCR and Aerodrome controller agreed that Tutor 2 should be sent around. The controller transmitted:

ATC *"and (Tutor 2)c/s go around"*

ATC *"and (Tutor 2)c/s go around I say again go around"*

Tutor 2 *"(Tutor 2)c/s go around"*.

By 0958:50 both aircraft had commenced a go around. Tutor 1 was initially to the righthand side of the runway before positioning deadside with Tutor 2 slightly faster and 200ft above – Figure 5.

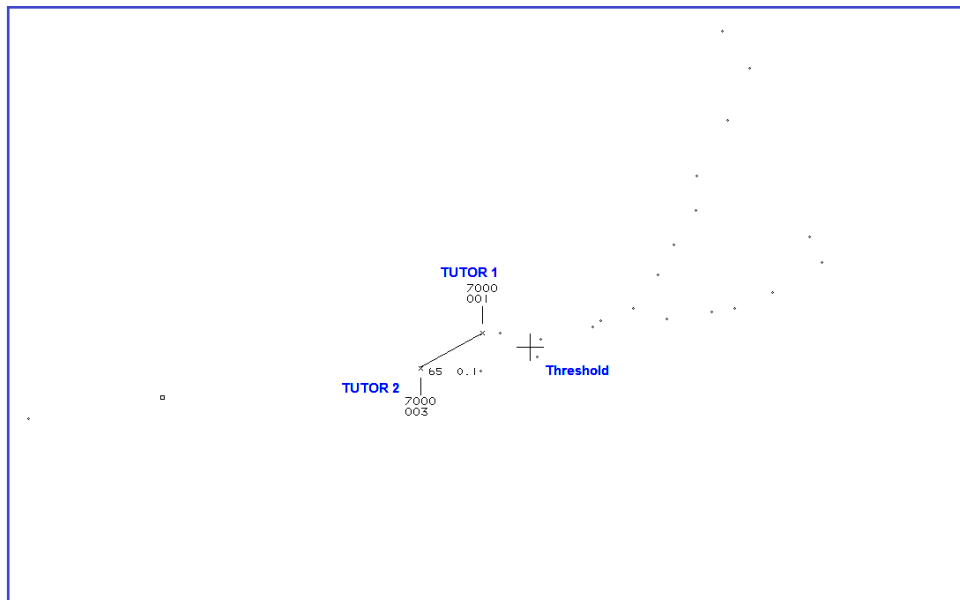


Figure 5 – Swanwick MRT at 0958:50

The Tutor 2 pilot's written report indicated he did not hear the Tower controller's instruction to go around but had commenced a go around when he realised he was closing with Tutor 1.

The pilot of Tutor 2 reported that he was aware that he was following Tutor 1 in the circuit. There was a certain repetitiveness with the two aircraft following each other around the circuit and the controller likely had an expectation that Tutor 2 would position correctly being number 2 in the sequence. The two downwind and final calls made by both aircraft were transmitted out of sequence and Tutor 2 pilot did not reply to two important transmissions. The instructor in Tutor 1 recognised the situation and emphasised that he was number 1 to avoid any confusion. An opportunity was missed by the Tower controller to ensure that the student pilot in Tutor 2 acknowledged that he was number 2 and was visual with the aircraft ahead. It was considered likely that the Tutor 2 student pilot misjudged his circuit pattern as he made the continuous turn onto base-leg/final which brought him into potential conflict with Tutor 1 already established on final ahead.

The situation was resolved when the pilot of Tutor 1 became aware of the situation and emphasised that he was number one. The pilot of Tutor 2 also became concerned that he was closing with Tutor 1 and initiated a go around. At the same time the controller instructed Tutor 2 to go around.

### UKAB Secretariat

Both pilots shared an equal responsibility to avoid a collision, and for not flying into such proximity as to create a danger of collision<sup>1</sup>; additionally, Tutor(2) pilot was required to land in the order of priority communicated by ATC<sup>2</sup>.

### Comments

#### HQ Air Command

This incident prompted an investigation by Headquarters Number 3 Flying Training School (HQ 3 FTS) and a number of recommendations have been made. However, the pertinent lesson here is that flying accurate parameters in the circuit will maintain spacing so it should be easier to stay visual with other aircraft in the circuit (and staying visual is the key to circuit deconfliction), as well

<sup>1</sup> Rules of the Air 2007 (as amended), Rule 8 (Avoiding Aerial Collisions)

<sup>2</sup> Ibid., Rule 13 (Order of Landing)

as allowing other aircraft in the circuit to maintain their SA. On this occasion the pilot of Tutor(2) cut the corner on the finals turn and, being 'belly up' to Tutor(1), did not notice that he was catching up with the aircraft in front. Once it became apparent that he was too close to the aircraft in front he initiated a 'go-around', but too late to avoid Tutor(1) by normal visual circuit margins.

## Summary

An Airprox was reported on 16 July 2014 between two Tutors, both in the visual circuit at Wyton. Tutor(1) pilot was on final approach when he reported that Tutor(2) had positioned too close, passing overhead in close proximity. Tutor(2) pilot believed he elected to go-around with sufficient spacing.

## **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 Tutor(1) pilots. Although the student didn't quite fly the standard circuit, and didn't place RT calls to ATC at the correct point, the instructor had full situational awareness of the other traffic in the circuit and, at one point, looked over his shoulder to see the other aircraft and assess that there was no threat. The Board noted the discrepancy in the assessment of aircraft separation at the time of the Airprox but, on balance, felt that Tutor(1) pilot's estimate of 10ft was probably because he had been surprised by the proximity of Tutor(2). Observers from the tower had not perceived the conflict to be that close, and radar analysis based on SSR transponder readout put the two aircraft 100ft apart [although it is acknowledged that SSR height readout can be +/- 200ft in error].

For his part, Tutor(2) was a very inexperienced student pilot on an early circuit consolidation trip. The military pilots at the Board were keen to stress that circuits are taught to military pilots by turning at set points with extensions made upwind (or downwind if absolutely necessary but in preference a go-around at circuit height) to accommodate any variations required to increase separation. Unlike civilian visual circuits, orbits for separation are not taught because orbits are generally not used in military visual circuits once students have progressed to high-speed aircraft. It was clear that the pilot of Tutor(2) was catching up the aircraft ahead, and was therefore probably flying faster than normal. Military members opined that he would probably be trying to make RT calls when he should, and this explained why his calls kept coming out of sequence with the aircraft ahead which was itself slightly late in its calls. Tutor(2) pilot would also be aware of the need to turn finals at a certain point, but his inexperience and speed led him to catch up the aircraft ahead on finals

The Board next discussed the role of the Duty Instructor in the ATC Tower. It was not known whether this pilot was the student's own instructor, but the Board agreed that, as the effective supervisor of Tutor(2) pilot, he should have stepped in much sooner to tell the student to go around and prevent the situation developing as it did.

Turning to the cause, the Board agreed that it had been the inexperienced Tutor(2) pilot who had flown into conflict with Tutor(1), but also that there was a contributory factor that the Duty Instructor's intervention was not timely. In assessing the risk, the Board were fairly evenly split in their debate between a Category A and B given the Tutor(1) Instructor's assessment versus the actual recorded separation (which might not be accurate given SSR tolerances). The decision was put to a vote and, by 5 votes to 9, the Board decided on B, safety margins had been much reduced below the normal.

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

Cause: The inexperienced Tutor(2) pilot flew into conflict with Tutor(1).

Contributory Factor(s): The Duty Instructor's intervention was not timely.

Degree of Risk: B.

ERC Score<sup>3</sup>: 20.

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<sup>3</sup> 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.