

## AIRPROX REPORT No 2014200

Date/Time: 1 Oct 2014 0950Z

Position: 5301N 00029W  
(Cranwell)

Airspace: Cranwell ATZ      (Class: G)  
Aircraft 1      Aircraft 2

Type: Tutor      Tutor

Operator: HQ Air (Trg)      HQ Air (Trg)

Alt/FL: 300ft      500ft  
QFE (1015hPa)      QFE

Conditions: VMC      VMC

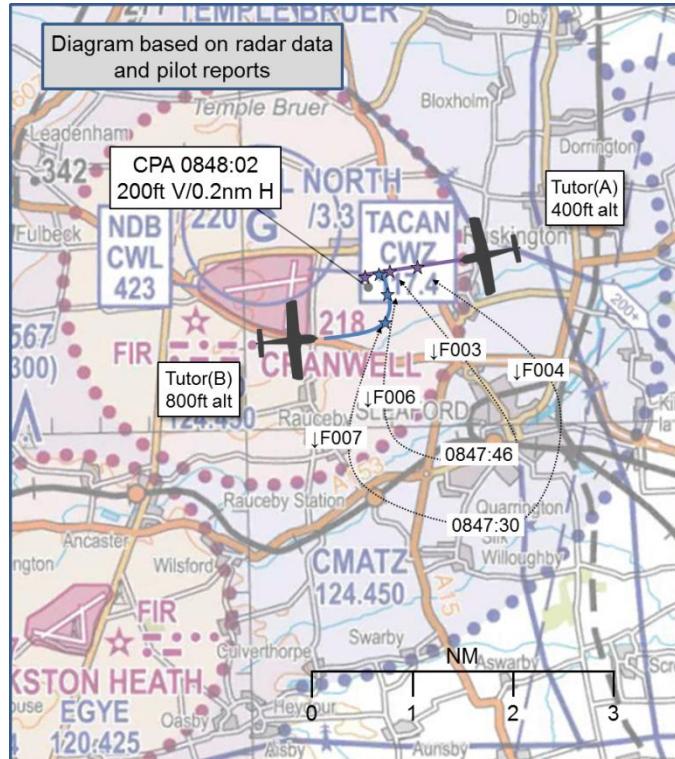
Visibility: >10km      10km

Reported Separation:

100ft V/50 -100yds H      N/R

Recorded Separation:

200ft V/0.2nm H



## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

**THE TUTOR(A) PILOT** reports flying a white aircraft with landing lights and HISLs illuminated, and transponder on with Mode 3A, C and S selected. The aircraft was fitted with TAS. He reports being the safety pilot for a QFI<sup>1</sup> student who was undergoing conversion to the Tutor. They were on the PAR at 300ft and 1nm to the threshold, and had been given clearance by the Talkdown controller to land on the runway. The safety pilot was watching another Tutor in the Cranwell circuit who was approaching the end of the downwind leg. He watched the other Tutor turn onto finals and expressed concern to the PF. He perceived that the geometry put the two aircraft on a collision course, so he expected the other aircraft to go around at circuit height. However, it continued to descend and, at that point, the Talkdown controller informed him that the grass runway was active. The other Tutor could conceivably have been using the grass runway, so he continued to give updates to the PF. However, it became obvious that the other aircraft was indeed heading for the main runway and, in his judgement, was on a collision course with them. He opined that radar approaches are faster than visual approaches and for them to go-around would have slowed them down and climbed them into the path of the conflicting Tutor so the safety pilot maintained visual contact with it and kept the PF updated. The other aircraft rolled into their 6 o'clock position, 50-100yds away; he could see the underside of its engine cowling but was unable to see the cockpit so he presumed the other pilot could not see them. The PF called "toes clear" (of the brakes) for landing, which caused the safety pilot to look at the runway; when he looked back the other Tutor had initiated a go-around. They landed safely, albeit unsettled, and discussed the event. They discovered that the other pilot was an ab-initio solo student on his second circuit and was being supervised by his QFI from the Tower. There were other QFIs in the Tower at the time and they didn't perceive the incident to be a problem; the pilot acknowledged that his opinion on separation may have been clouded by an impending sense of doom, but opined that the solo-student should have been encouraged to go-around at circuit height. Although the student said he was visual with their aircraft, he was not experienced in judging closure rates and distances. The circuit was very busy at the time, and had been for a while, and they had received numerous traffic alerts on their TAS and multiple radio calls, all of which kept him busy as the safety pilot and which would have been a high work-load for the solo student. He noted that in 19 years as a QFI he had never been in a situation that close before.

He assessed the risk of collision as 'High'.

<sup>1</sup> Qualified Flying Instructor

**THE TUTOR(B) PILOT** reports flying a white aircraft with all lights illuminated and transponder on with Modes 3A, C and S selected. The aircraft was fitted with TAS. He was flying in the Cranwell visual circuit and turned finals for a “touch-and-go”. He saw an aircraft on radar approach and was happy that he could fit in behind it, so he told ATC that he was visual with the other aircraft and was given a clearance to continue. He rolled out on final approach, lined up with the runway, and, although he was not told to go around by ATC, he deemed that the aircraft ahead would not be able to clear the runway in time for his touch-and-go so, well before 300ft, he elected to go around.

He assessed the risk of collision as ‘Low’.

**THE CRANWELL U/T ADC** reports being under training with an instructor monitoring him. The visual circuit was full and continued to be full for the majority of the training session. There was also continuous radar traffic. Tutor(A) was prenoted by the radar controller at 7 miles inbound to land. Tutor(B) was one of 5 in the visual circuit; its pilot called downwind to touch-and-go and was informed of the one ahead on radar. Another Tutor (not involved in the Airprox) called to join and was given joining clearance and the circuit state. At 3 miles, Tutor(A) was given clearance to land and told the circuit state; a mandatory broadcast to the aircraft in the visual circuit followed. Tutor(B) called final and stated he was visual with the radar traffic; he was told to continue the approach and he positioned behind the radar traffic. Tutor(B) initiated his own go-around and Tutor(A) landed from his approach, from the tower there did not appear to be any flight safety risk.

He perceived the severity of the incident as ‘Low’.

**THE CRANWELL ADC** report mirrored that of the U/T controller. He added that Tutor(B), having called visual with the radar traffic was allowed to continue the approach down to his committal height in accordance with 22 Group orders. Whilst the pilot turned tighter than usual behind the aircraft ahead, he did not perceive safety to be compromised in any way, highlighted by the fact that the student elected to go around before he reached the designated height where the runway controller would have been mandated to fire a red verey.

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

**THE CRANWELL ATC SUPERVISOR** reports being located in the visual control room because the visual circuit was full. For the previous 45 minutes the circuit was busy with 4 aircraft constantly in the circuit, others calling to join to land, and radar traffic both landing and feeding round for further radar. Tutor(B) was on a second solo trip and had been in the circuit for about 20 minutes. Tutor(A) was pre-noted by radar at 7 miles, and the appropriate broadcast was made on the Tower frequency. Multiple aircraft were calling downwind and the ADC was correctly informing them of their position in relation to others ahead downwind and the radar traffic, and the Supervisor was content that the correct priorities and decisions were being made. Tutor(B) had earlier called downwind for a touch-and-go and then called final, visual with the radar traffic. This is a Cranwell specific call, normally a pilot would be interrogated by the ADC to check whether he is visual with the radar traffic, but pilots can call visual on their own initiative to save this questioning. Tutor(B) was told to continue and, because there was no other traffic in the vicinity of the final turn, the Supervisor was content that the pilot was indeed visual with the radar traffic. As the Tutor rolled out to line-up with the runway, the Supervisor noted nothing unusual with the separation from the radar traffic ahead and, because he was not concerned, directed his attention to the Radar Approach controller who was warning-in further visual traffic. Tutor(B) initiated his own go-around. Once Tutor(A) had landed and switched to the Tower frequency the pilot demanded to know who was deadside. He was blocking the runway, so he was told to expedite the vacating of the runway, once he had called clear he again wanted to know the callsign of the aircraft deadside. He was told to discuss it on the ground frequency.

## Factual Background

The weather at Cranwell was reported as:

METAR EGYD 180950Z 22016KT 9999 FEW030 07/03 Q1034 BLU NOSIG

## Analysis and Investigation

### Military ATM

At 0846:09, Tutor(B) had called downwind and was informed of two ahead. At 0846:23 (Figure 1), PAR transmitted, “[Tutor (A)] cleared to land, three in acknowledge.” At 0846:26, the Aerodrome Controller conducted an all stations broadcast, “Tutor, 3 miles, land.”

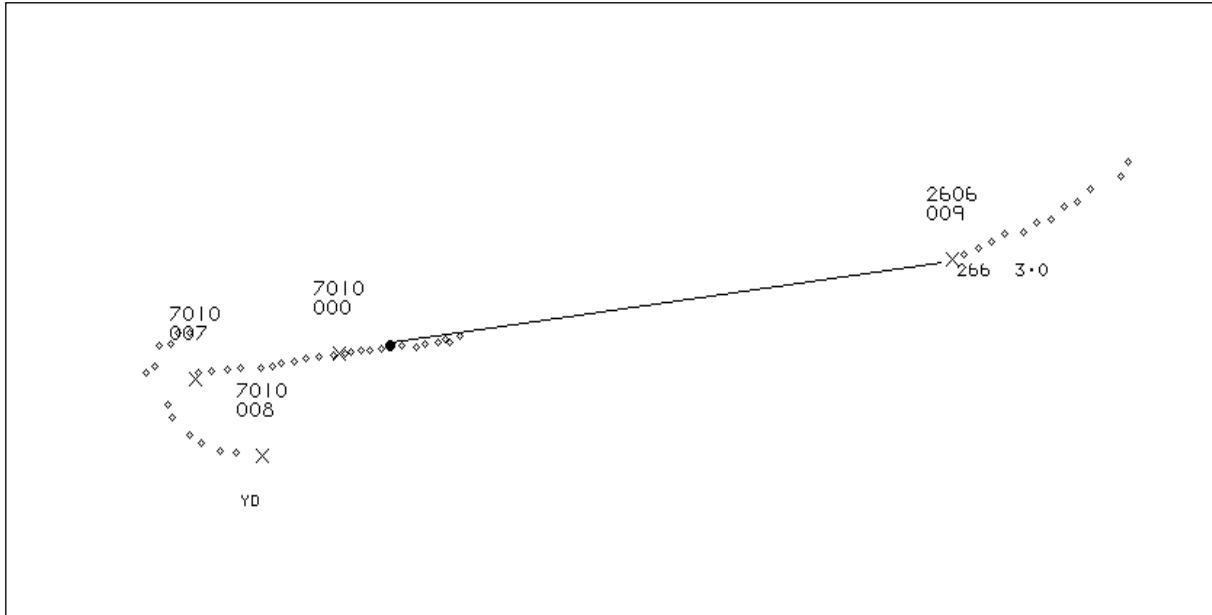


Figure 1: Tutor(A) clearance to land at 0846:23 (Tutor(A) squawk 2606; Tutor(B) squawk 7010)

At 0847:24 (Figure 2), Tutor(B) reported, “[Tutor(B)] final visual with the radar traffic.” The controller instructed, “[Tutor(B) callsign] continue approach.”

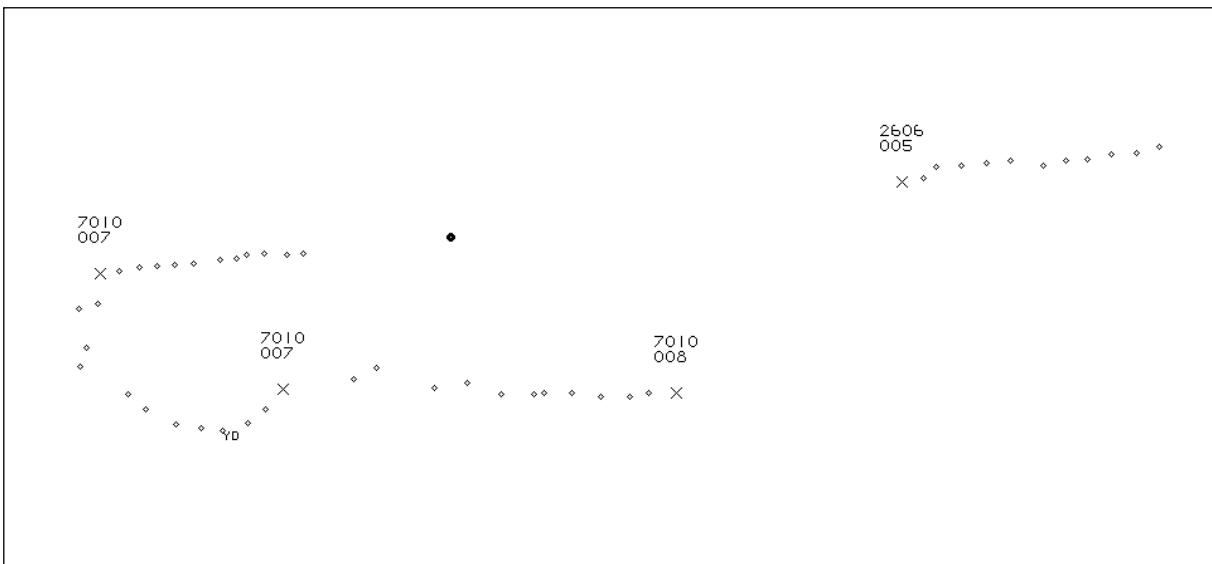


Figure 2: Tutor B reported visual with Tutor A at 0847:24.

Figure 3 outlines the geometry at 0847:49 as the Tutor(B) turned inbound onto finals.

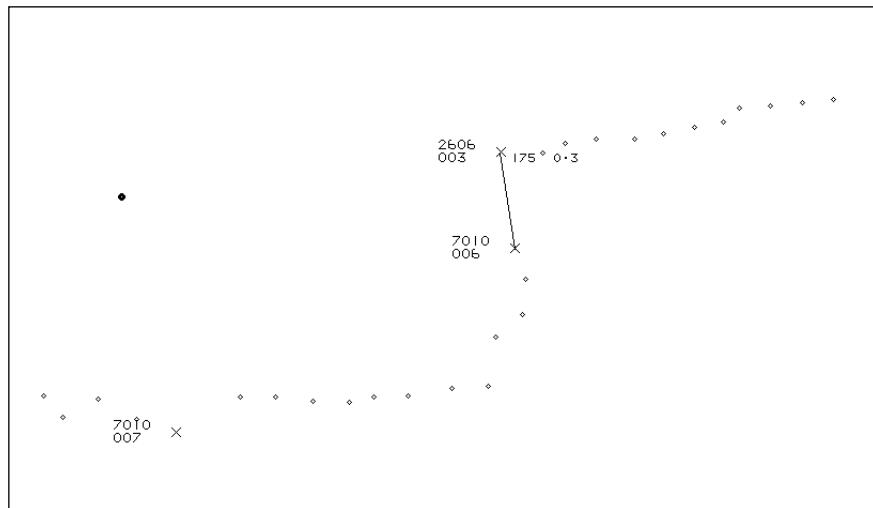


Figure 3: Geometry at 0847:49

The geometry at 0848:12 (Figure 4) demonstrates 0.2 nms horizontal separation between Tutors.

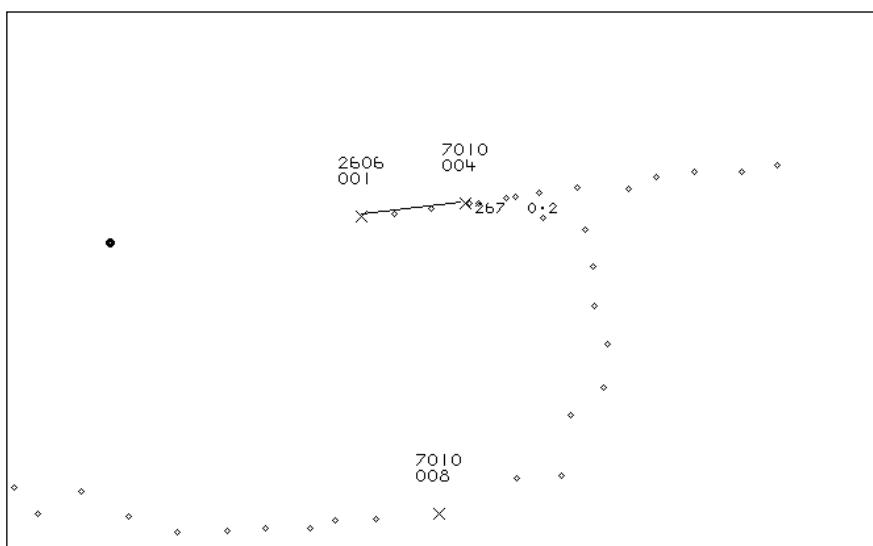


Figure 4: Geometry at 0848:12.

At 0848:31 (Figure 5), Tutor(B) confirmed, "going around."

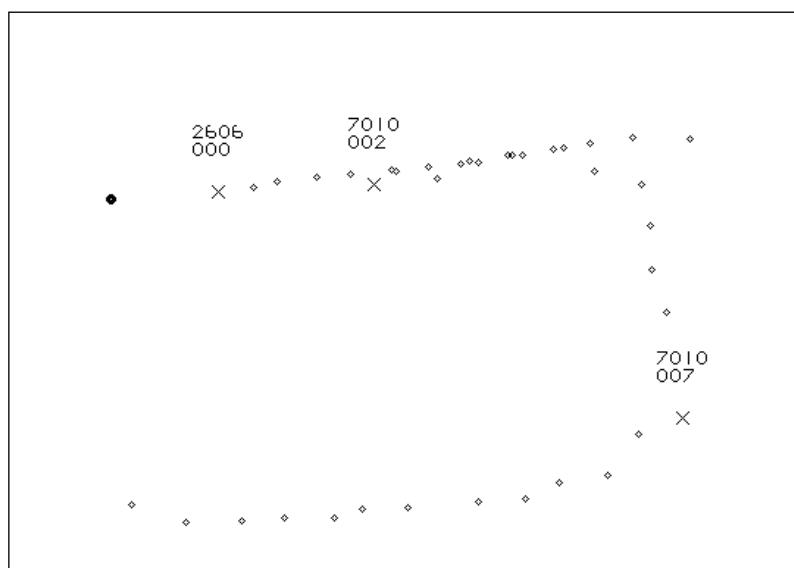


Figure 5: Tutor B going-around at 0848:31.

The controller had made the correct liaison calls with Talkdown and had passed Traffic Information as per military ATM and local orders. Tutor(A) had kept a good lookout for traffic in the busy circuit; the actions of Tutor(B) unsettled the crew of Tutor(A), leading to the Airprox report. All other parties were content with the spacing. Tutor(B) pilot had made the correct liaison calls and had reported visual with Tutor(A) prior to turning finals and descending. When the pilot of Tutor(B) calculated that he would not get his touch-and-go approach behind a landing Tutor, he elected to go-around.

The normal barriers to an Airprox in the visual circuit would be Traffic Information, lookout and circuit positioning. The information on circuit traffic had been passed and all crews had complied with local orders and were visual.

### **UKAB Secretariat**

Both pilots shared an equal responsibility for collision avoidance and for not flying into such proximity as to create a danger of collision<sup>2</sup>. An aircraft on its final approach to land has right-of-way over other aircraft in flight, and if two or more flying machines are approaching any place for the purpose of landing, the aircraft at the lower altitude has the right-of-way<sup>3</sup>.

### **Comments**

#### **HQ Air Command**

In accordance with the Rules of the Air and specified in the RAF Cranwell Flying Order Book, the crew of Tutor (A) had priority during their radar approach to land over the visual traffic in the circuit. Notwithstanding this, a situation was allowed to develop where the crew of Tutor (A) continued their approach to the point that they were concerned with the proximity of Tutor (B), despite remaining visual with the conflicting traffic throughout. As all pilots share an equal responsibility to avoid collision, the crew of Tutor (A) had the opportunity to discontinue their approach if they felt concerned with the events unfolding before them. Additionally, another opportunity existed to prevent the conflict developing if the pilot of Tutor (B) had opted, or been instructed, to extend his circuit on the downwind leg or go-around at circuit height. However, it must be stated that all local orders were complied with throughout the course of this incident.

### **Summary**

An Airprox was reported on 1<sup>st</sup> October 2014 at 0950 between two Tutor aircraft in the Cranwell circuit. Tutor(A) was making a radar approach to land and Tutor(B) was in the visual circuit. Tutor(B) received Traffic Information on Tutor(A) and was visual with it.

### **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.

The Board first discussed the actions of Tutor(A) pilot. Whilst there was no doubt that he was concerned by the proximity of the other aircraft, the Board noted that he didn't actually take any action, and wondered whether he was relying on the other pilot giving way to him rather than proactively manoeuvring himself even though he had right of way. The Board also wondered whether the surprise element of the event made him assess the separation as closer than it actually was. The Board noted the comments from the ATC Supervisor and re-iterated that it was never good practice

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<sup>2</sup> Rules of the Air 2007 (as amended), Rule 8 (Avoiding aerial collisions).

<sup>3</sup> Ibid., Rule 13 (Order of landing).

to de-brief events over the RT, and especially when the other pilot was a student because there is always the potential to distract a pilot or controller with disastrous consequences.

Turning to the pilot of Tutor (B), the Board noted that he was a low-hours solo-student and, as such, would most likely have stuck to exactly what he had been taught, turning finals at the same place each time. That no-one in the Tower, either controller or QFI, perceived the separation to be unusual implies that, although he may have been closer than ideal, they didn't consider that he was dangerously so. The Board noted that Tutor (B) pilot started the go-around because he thought he wouldn't get his touch-and-go, not because ATC, or the Runway Truck Controller, sent him around for proximity reasons. The Board also noted that 22 Group Orders permit pilots to continue to decision height for maximum training; therefore, in this instance, no specific rules had been contravened.

The Board then discussed the role of ATC in the event. The civilian ATC Board members queried the differences between controlling styles in military ATC visual circuits compared to civilian ones, noting that there have been a number of incidents involving the integration of radar and visual circuit traffic at military airfields in recent months. They wondered whether the Aerodrome Controller should have sent Tutor(B) around at circuit height from the downwind position. It was again re-iterated that the military stance is that military pilots are taught to operate more autonomously within the visual circuit in order to prepare them for situations later in their careers when they may be operating high-speed, high-performance aircraft from more rudimentary facilities and controlling situations that may not be familiar with such aircraft. As such, military rules dictate that a controller can ask a pilot downwind if he is visual with the radar traffic and, if so, allow the pilot to continue behind at his own discretion, as was the case in this instance. Notwithstanding, following a unit investigation of this incident, a number of recommendations have been put in place, including giving the duty instructor a more active role in monitoring solo-students in the circuits.

In looking at the cause of the Airprox, the Board quickly agreed that the incident had resulted from the Tutor(A) pilot becoming concerned by the proximity Tutor(B). However, in assessing the risk, there followed robust discussion about whether this was a Category E (normal procedures and safety standards pertained), or whether there had been an underlying issue with integration within the circuit and whether the incident should instead be assessed as Category C. The subsequent discussion centred around the actual separation, which measured 0.2nm on the radar replay, equating to approximately 1000ft. A vote followed and, by a narrow majority, the collision risk was classified as Category E, normal safety standards had pertained.

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

Cause: The pilot of Tutor (A) was concerned by the proximity of Tutor (B).

Degree of Risk: E.

ERC Score<sup>4</sup>: 2.

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<sup>4</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.