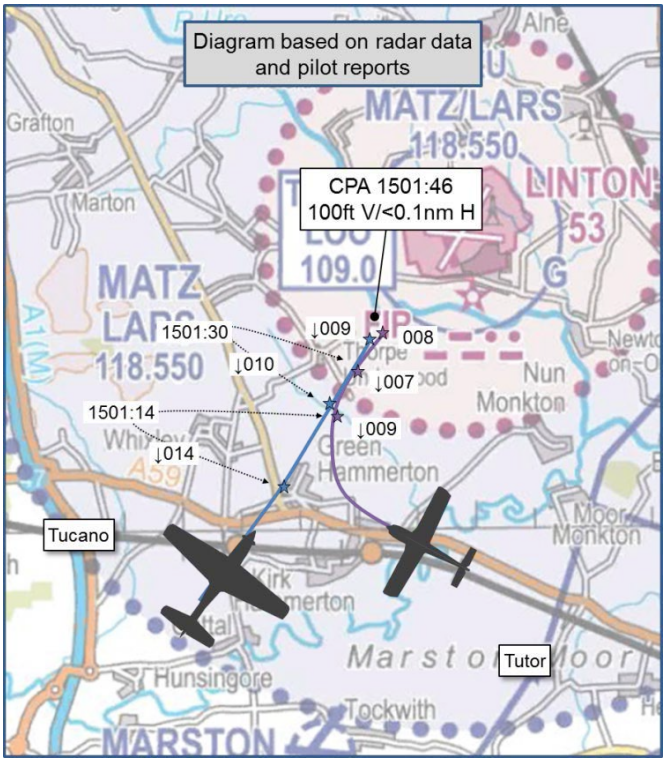
AIRPROX REPORT No 2016003

Date: 15 Jan 2016 Time: 1501Z Position: 5402N 00016W Location: Linton on Ouse

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Tutor	Tucano
Operator	HQ Air (Trg)	HQ Air (Trg)
Airspace	Linton ATZ	Linton ATZ
Class	G	G
Rules	VFR	VFR
Service	Aerodrome	Aerodrome
Provider	Linton ADC	Linton ADC
Altitude/FL		
Transponder	A,C,S	A,C,S
Reported		
Colours	White	Black
Lighting	Strobes, Nav	HISLs, Nav
Conditions	VMC	VMC
Visibility	30km	>10km
Altitude/FL	800ft	1000ft
Altimeter	QFE (1017hPa)	QFE (1017hPa)
Heading	030°	034°
Speed	100kt	240kt
ACAS/TAS	TAS	TAS
Alert	None	TA
Separation		
Reported	200ft V/100m H	200ft V/2-300m H
Recorded	100ft V/0.1nm H	



THE TUTOR PILOT reports that he requested a visual join with Linton ADC and, approximately two minutes later, heard the Tucano pilot also call for visual join. He joined normally via initials at 800ft and 100kt, aware that the Tucano was also joining, but not yet visual with him. He did not hear the Tucano pilot make an initials call, and was only aware of his position as he overtook on the deadside as the Tutor was abeam the runway threshold. The Tucano was about 200ft higher, but his presence, with a lateral and speed differential which when combined with the fact that he didn't expect him to be there, was cause for concern.

He assessed the risk of collision as 'Medium'.

THE TUCANO PILOT reports that he was returning to Linton after a low-flying sortie and land-away. Towards the end of the sortie the pilot positioned to the north-west of Linton for some medium-level general-handling and, on completion, a visual recovery was initiated by the student, who was the PF. The student positioned the aircraft about 7-8nm on the extended centreline for RW03 and the tower frequency was selected. A join call was made at approximately 5nm and the ADC informed them that there were 3 aircraft in the circuit. The closest aircraft, a Tutor, was seen joining from the south at 800ft, so they positioned behind that traffic at 1000ft with an estimated 2-300m of lateral separation, maintaining separation whilst continuing the join on the deadside and looking for the other circuit traffic. Due to the intensity of the RTF traffic, they were unable to make an initials call, instead making a break call when visual with the other circuit traffic. The Tutor pilot queried their callsign with the ADC and they replied that it was them, and that they had been unable to call at initials, but were visual with the Tutor. After landing they debriefed the incident with the Tutor pilot, who was obviously concerned by the Tucano's positioning. However, the Tucano pilot noted that because he was visual with the Tutor at all times, he did not assess the situation as hazardous.

He assessed the risk of collision as 'None'.

THE LINTON ADC reports that the visual circuit was particularly busy with numerous aircraft departing and joining. The visibility from the tower was very poor due to the bright sun shining into the VCR from the direction that the aircraft were joining. Even with the blinds down it was extremely difficult to spot aircraft routing through initials. He gave joining instructions and replied to all pilots as they called. The first time he was aware of an issue was when the Tutor pilot asked for the callsign of the Tucano that had flown past on the deadside. The Tucano pilot replied 'it was me' and the Tutor pilot responded that he hadn't been aware of it joining, to which the Tucano pilot said he couldn't call initials due to the high level of RT calls, but that he had been visual with the Tutor. The controller commented that he couldn't recall any more details due to the busy and dynamic nature of the visual circuit at the time.

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

THE LINTON SUPERVISOR reports that she was in the Approach room at the time of the incident and did not witness it. The ADC called to inform her of the incident as soon as he was able and so she went up to the VCR to receive full details. The Tutor pilot called shortly afterwards to give his perspective of the events and to advise that he would be submitting a DASOR.

Factual Background

The weather at Linton on Ouse was recorded as follows:

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METAR EGXU 151450Z 30006KT 9999 FEW025 04/M02 Q1019 BLU NOSIG=
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Analysis and Investigation

Military ATM

The incident occurred between a Grob Tutor and a Tucano both under an Aerodrome Service with RAF Linton Aerodrome Controller.

At 1500:12 (Figure 1), the Tucano requested a visual circuit join and the Aerodrome Controller passed the airfield details and confirmed that 3 aircraft were already in the circuit.

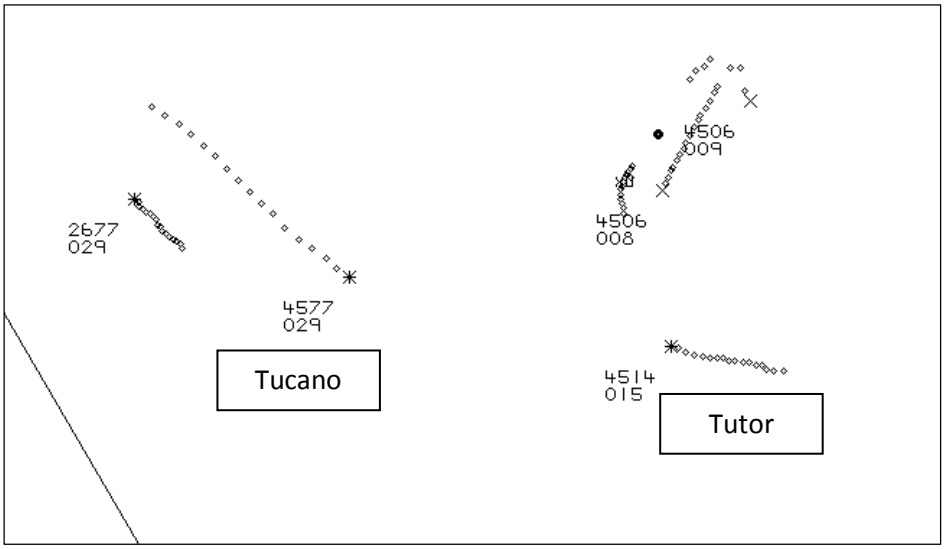

Figure 1: Tucano called for visual join at 1500:12 (Tucano 4577; Tutor 4514).

At 1501:16 (Figure 2) the Tutor called Initials Point and was informed, "*1 deadside, 1 upwind, 1 downwind*."

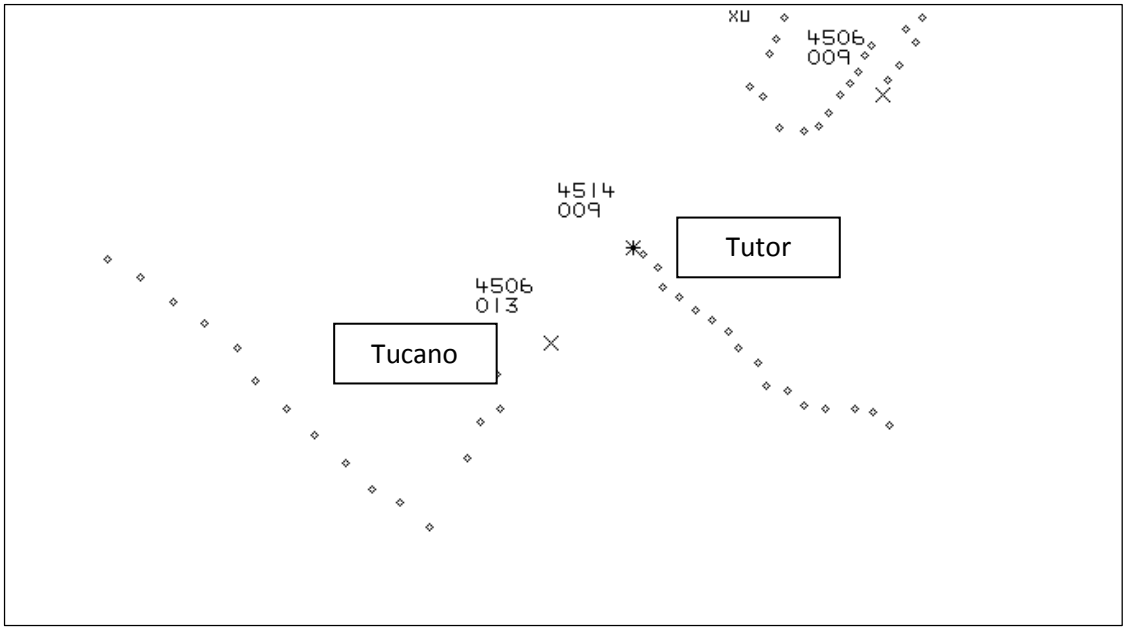

Figure 2: Tutor Initials point at 1501:16 (now 4506).

At 1501:37 (Figure 3), the Tucano declared 'on the break' and, at 1501:44, the controller confirmed, "*1 ahead, surface wind 280/05*." [UKAB note: The unit investigation discovered that the ATC RTF recordings indicated the pilot's late initials call was clipped by another call, the controller heard '{Tucano c/s}, break' and assuming he was calling on the break gave the number ahead and surface wind. In fact the Tutor cockpit recording indicated he actually said 'initials for the break']

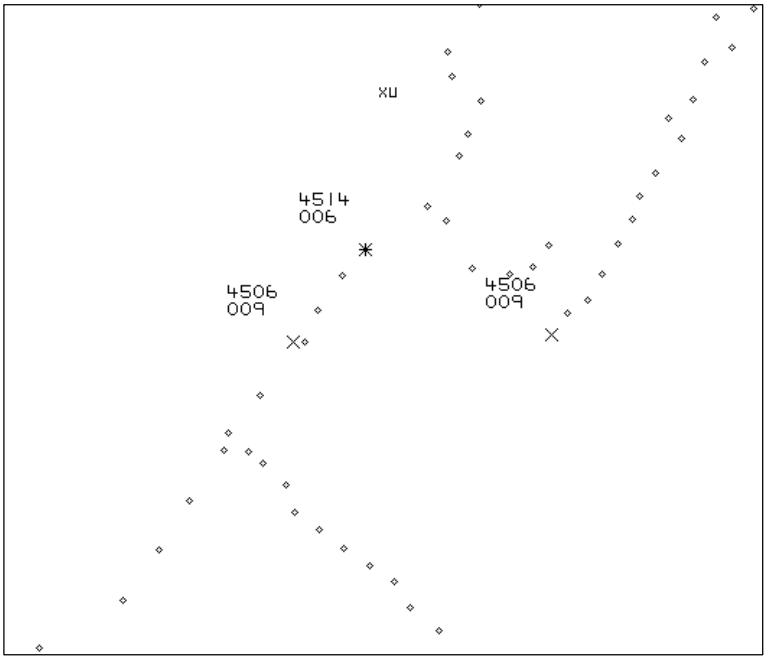

Figure 3: Tucano called for break at 1501:37.

The CPA was estimated at 1501:46 (Figure 4) with 100ft height separation and 0.1nm horizontal separation. At 1502:05, the Tutor requested, "*Confirm the callsign of the Tucano, just passed me?*" At 1502:22, the Tucano replied with, "{Tucano c/s} *was visual*." The Tutor pilot replied with, "*roger wasn't aware that you were passing down my left hand side*."

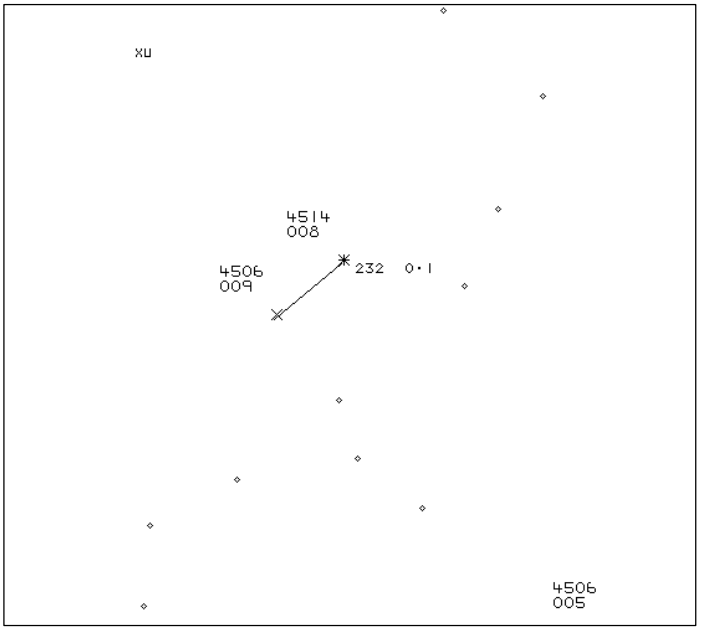

Figure 4: CPA at 1501:46.

The RTF on the Tower frequency was busy with the two Airprox aircraft joining, a departing IFR Tutor and two Tucanos in the visual circuit. The RTF was almost constant and as a result the Tucano pilot did not get a chance to call Initials and receive a circuit update. The Initials call would also have alerted the Tutor (800ft QFE) to the Tucano (1000ft QFE) about to overtake from astern. The controller struggled to see aircraft out of the tower window due to bright sunshine.

The Tutor pilot was aware of a Tucano joining but not sure of its position. When the Tutor was deadside, passing abeam the Threshold, the Tucano overtook 200ft higher with lateral separation that caused concern. The Tucano pilot had joined the visual circuit at 5nm and became visual with the Tutor at 800ft QFE at a range of approximately 4nm. The Tucano reported passing 200ft above the Tutor with approximately 2-300 feet horizontal displacement. The Tucano pilot was visual with the Tutor throughout.

The unit investigation considered whether the 200ft vertical buffer was sufficient in the visual circuit. Local orders allow for a maximum of three aircraft in the circuit when there are mixed types and a substitution test was used in ATC to ascertain if controllers would have judged the circuit as full. With a Tutor for IFR Departure and a Tucano downwind to land, other controllers would also have allowed the Airprox Tucano to join. Technically, the two Airprox aircraft were not in the visual circuit until they had called Initials; the departing IFR Tutor was not part of the circuit and two Tucanos were already in the circuit, with one finals to land. A Safety Audit was being conducted to review the local order on circuit limitations.

The use of the substitution test in the local ATC investigation was appropriate for the type of incident. Controllers can never be certain when an aircraft will actually call at Initials following a call for a visual join and this requires a degree of judgement and planning ahead to calculate how many aircraft may still be in the visual circuit by the time of the Initials call. Although four aircraft of mixed type were in the circuit (with 3 as a maximum), it would have been for a short period as one of the Tucanos was on finals to land. The joining Tucano was always visual with the Tutor and maintaining 200ft separation as per the local orders. However, the Tucano pilot could not provide a position report with an Initials Call, and the Tutor pilot became concerned when suddenly spotting the Tucano overtake at a much higher speed.

UKAB Secretariat

The Tutor and Tucano 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].

Comments

HQ Air Command

This incident took place at a busy military flying training establishment in which clear communication and the maintenance of situational awareness is key to safe deconfliction in the visual circuit. Despite the Tucano pilot's statement that he did not have time to make an 'Initials' call due to RTF density, a call was made from his aircraft, albeit that an appropriate response was not made by the ADC; the ATC transcript indicates that two transmissions may have been made at once. This confusion in radio transmissions coupled with the difficult meteorological conditions, may have contributed to an incorrect mental model for both the ADC and the Tutor pilot as the Tucano approached the circuit. This in turn, could have resulted in the Tutor pilot becoming startled as the Tucano passed his aircraft during the join; notwithstanding, separation was maintained through local circuit procedures. Extensive local investigation and safety audits have been conducted into this incident, recommending a number of changes to local procedures and awareness training for aircrew.

Summary

An Airprox was reported when a Tutor and a Tucano flew into proximity at 1501 on Friday 15th January 2016. Both pilots were operating under VFR in VMC, in the Linton visual circuit; the Tutor was abeam the runway threshold when the Tucano overtook on the deadside.

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 looked at the actions of the Tucano pilot. He was visual with the Tutor at all times and had complied with Linton procedures in that he joined at the correct height, making calls to ATC as required. Although he stated that he couldn't get his initials call to ATC on time due to the extremely busy frequency, the cockpit voice recordings showed that he did make a call as soon a practicable.

For his part, the Board noted that the controller answered all calls as he thought appropriate, but was hindered by the busy frequency; he only heard part of the Tucano pilot's Initials call and assumed he was already through initials. Members noted that the Unit Investigation had commented on the fact that the mixed aircraft types in the circuit at the time meant that the circuit was technically full, and that the controller should have held off the Tucano until the departing aircraft had cleared the frequency or the one downwind had landed. However, the Board noted that he was trying to be as expeditious as possible, and that in a substitution test, other controllers had also said they would have allowed the Tucano to join. Military members informed the Board that this grey area had been addressed, and that controllers would in future be required to hold traffic at initials in similar circumstances. They went on to inform the Board about other areas that the Unit Investigation had identified, including specifying a set initials point, introducing a greater height differential between the aircraft types, and pilots calling Linton App for recovery by 15nm from the airfield.

Turning to the Tutor pilot, the Board opined that he clearly knew that the Tucano was joining behind him and that he should reasonably have been expecting that it would overtake him at some point. Notwithstanding, they noted that he was startled when it did so. However, they considered that the in-

[1] SERA.3205 Proximity.

built height differential meant that there was actually little, if any, risk of collision; reinforced by the fact that the Tucano pilot was in visual contact with the Tutor at all times. Therefore, when identifying the cause of the Airprox, the Board quickly agreed that the Tutor pilot had been concerned by the proximity of the Tucano. In assessing the risk, the Board thought that the incident met all the parameters for reporting an Airprox, but because the Tucano pilot had been visual with the Tutor at all times whilst he joined and had applied sensible avoidance criteria, the incident essentially represented normal operations, Category E risk. Nevertheless they were pleased to note that, as is often the case with Category E events, Linton had been able to identify some valuable lessons to prevent a more serious incident occurring in the future.

PART C: ASSESSMENT OF CAUSE AND RISK

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

Degree of Risk: E.