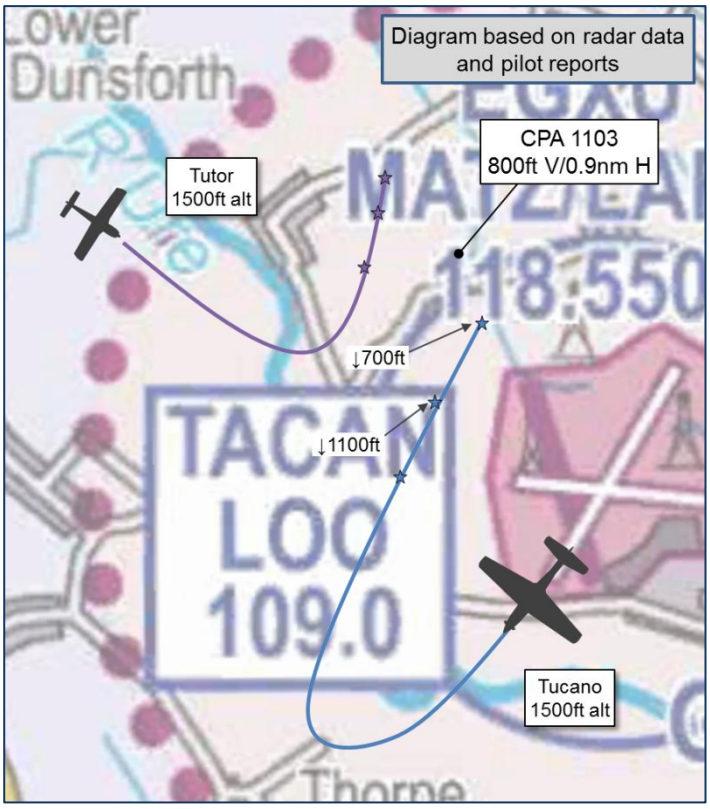
AIRPROX REPORT No 2015038

Date: 10 Apr 2015 Time: 1103Z Position: 5404N 00116W Location: Linton on Ouse

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Tucano	Tutor
Operator	HQ Air (Trg)	HQ Air (Trg)
Airspace	Linton MATZ	Linton MATZ
Class	G	G
Rules	VFR	VFR
Service	Aerodrome	Aerodrome
Provider	Linton on Ouse	Linton on Ouse
Altitude/FL	700ft	1400ft
Transponder	A,C,S	A,C,S
Reported		
Colours	Black and Yellow	White
Lighting	Strobes, Nav, landing lights	HISLs, Nav lights
Conditions	VMC	VMC
Visibility	5000m	5000m
Altitude/FL	1500ft	1500ft
Altimeter	QFE (1014hPa)	QFE (1014hPa)
Heading	030°	030°
Speed	140kt	130kt
ACAS/TAS	TCAS I	Not fitted
Alert	TA	N/A
Separation		
Reported	0ft V/0.75nm H	0ft V/3000ft H
Recorded	800ft V/0.9nm H	



THE TUCANO PILOT reports that he was conducting a GH refresher training sortie for an experienced QFI, who was the handling pilot in the front cockpit, whilst the reporting pilot was non-handling in the back. They had just rolled out from one circuit and had requested, and received, permission for a glide circuit at 1500ft. The visibility was reported as 5km, but it was poor into sun, with poor slant visibility; because of this, a circuit restriction of a maximum of 2 aircraft was in force. The TCAS was set on 6nm range and they were aware of a few contacts that, from ATC information, they perceived to be joining for straight-in approaches. At the start of the leg for RW21RH, prior to configuring the aircraft, they received a TCAS Traffic Alert. The non-handling pilot immediately zoomed the range of the TCAS to 2nm and noticed the other aircraft to be co-altitude at a range of 1nm and on a collision heading. Both pilots tried, but failed to spot it visually. They heard the Tutor reporting that he was also downwind and at 1500ft, but didn't hear him call visual with them. They elected to descend promptly to 1000ft to break the collision geometry and informed ATC. As they descended the TCAS indicated that the Tutor was also descending, and that the collision risk remained. The Tutor was now perceived to be approaching 0.75nm and co-altitude, so they elected to continue the descent to 600ft and break away from the Tutor, turning right across the runway to the deadside. Only at that stage did they hear the Tutor call visual. The pilot reported that his situational awareness at the time had been that the circuit was clear, apart from two other Tutors who were doing straight-in approaches to land and were therefore not a factor. Following the incident they elected to climb in the overhead and remain clear whilst all the Tutor traffic landed.

He assessed the risk of collision as 'Medium'.

THE TUTOR PILOT reports returning to base after a medium-level general-handling sortie. He initially intended to join in the overhead and spiral down to circuit height. On calling ATC he was told about one aircraft already in the circuit and asked for its position. Before approaching the overhead, he visually acquired the Tucano and converted to a visual straight-in join whilst still descending, but remained wide downwind, with the intention of turning finals late to fit in behind. He maintained visual contact with the Tucano throughout, but was aware that the Tucano pilot was not visual with him. He transmitted his position and height, and that he was visual and would remain clear. Immediately following this call, the Tucano appeared to descend, turn away and go around. The Tutor pilot then converted to a right-base join and landed uneventfully. After landing he was informed that straight-in approaches were in force.

He assessed the risk of collision as 'None'.

THE LINTON ADC CONTROLLER reports the Tucano was in the visual circuit and had been given approval to commence a glide circuit. The Tutor was pre-noted; because the visibility was poor the circuit had been restricted to a maximum of two aircraft at any one time and the Tutors were to carry out straight-in approaches only. Using the Air Traffic Monitor (ATM), the controller noticed that it appeared that the Tutor was setting up for a downwind join, she called the Approach controller to confirm that it was straight-in approaches only and this was confirmed as the case. When the Tutor called to join she informed him that he was to join straight-in and gave him the position of the Tucano in the circuit, which was just turning downwind for a glide circuit. The Tucano pilot asked for the position of the Tutor and she gave it using the ATM because the visibility was too poor to see the Tutor at this point. The Tutor pilot then stated that he was effectively wide downwind at 1500ft. The Tucano pilot immediately stated that he was descending to 1000ft and asked for Traffic Information again, which again she passed using the ATM. The Tutor pilot transmitted that he was visual with the Tucano and happy for him to continue. Two more Tutors were pre-noted for straight-in approaches, and the Tucano pilot elected to climb to 2500ft in the overhead until all of the Tutors had landed.

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

THE LINTON SUPERVISOR reports that throughout the morning during Met briefings and liaison with Duty Aircrew, it had been highlighted that the visibility was poor and there would be a maximum of two aircraft in the visual circuit. There was a busy flying programme planned and, as a result of experience from the previous day which had similar weather conditions, he suggested it would be prudent for Tutors to make straight-in approaches on recovery. This was agreed and, on return to the ATC tower, he telephoned Tutor Ops to pass on this information. He did not witness the event himself, but was made aware of it via landline from the Tower controller; he immediately selected GUI (Graphics/User Interface) to see the circuit traffic, by which time everything seemed well separated. He then went to the VCR to find out more information. He assessed the Unit and controller workload as low.

Factual Background

The weather at Linton on Ouse was recorded as:

```
METAR EGXU 101050Z 17013KT 5000 HZ BKN220 16/07 Q1016 WHT NOSIG
```

Analysis and Investigation

Military ATM

A portion of the tape transcript between the ADC, Tutor and Tucano is below:

From	To	Speech	Time
Tucano	ADC	[Tucano c/s], Request Glide	1101:30
ADC	Tucano	[Tucano c/s], Approved	1101:34
Tutor	ADC	Tower, [Tutor c/s], rejoining from the west, visual with the field, 21 right, 1014	1102:10
ADC	Tutor	[Tutor c/s], Linton Tower Join for a straight in approach Rwy 21RH QFE correct, 1 in	1102:15
Tutor	ADC	[Tutor c/s], Roger, position of the 1 in?	1102:19
ADC	Tutor	Just turning downwind for a glide circuit	1102:22
ADC	Tucano	[Tucano c/s], {unreadable} believed to be north of you, 3 miles, tracking east positioning for a straight in approach	1102:28
Tucano	ADC	[Tucano c/s]	1102:34
Tutor	Tucano	[Tutor c/s], is effectively wide downwind at the moment, I'm at 1500 ft and I'll keep out of your way	1102:37
Tucano	ADC	[Tucano c/s], descending 1000 immediate	1102:39
Tucano	ADC	[Tucano c/s], is 1000 ft downwind, position of the other aircraft please?	1102:54
ADC	Tucano	Looks to be err North West of you by about a mile	1102:57
Tucano	ADC	Copied	1103:00
Tutor	Tucano	[Tutor c/s], is good visual with you, I'm well wide of you, carry on	1103:01
Tucano	ADC	[Tucano c/s], at circuit height	1103:05

The Tucano glide circuit at Linton is at 1500ft QFE, and the Tutor circuit is 800ft QFE. At 1102:45 (Figure 1), the Tucano (4506) can be viewed turning downwind for RW21RH and the Tutor is positioning for a wide downwind join (4505).

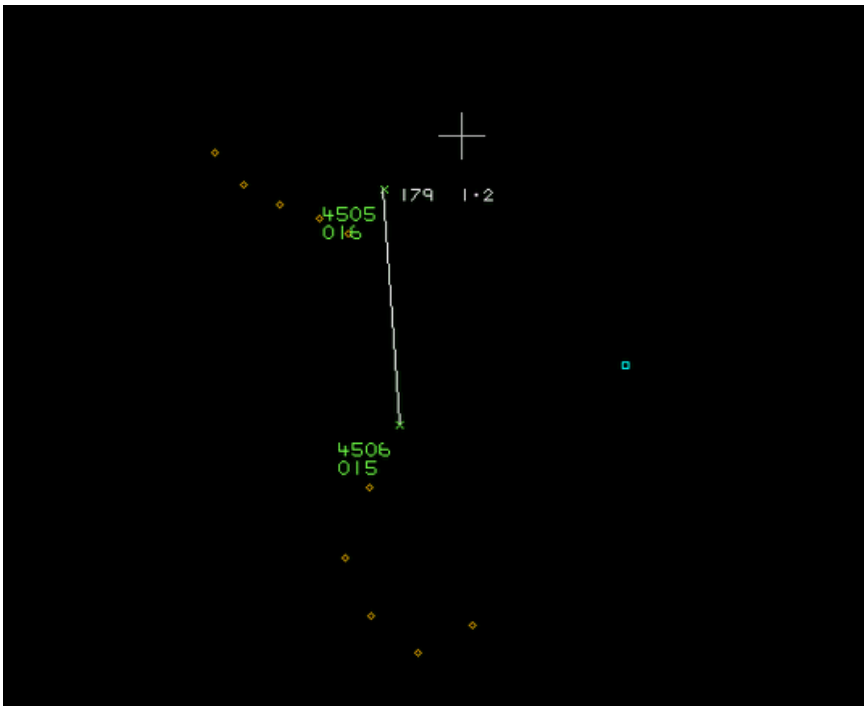


Figure 1: Geometry at 1102:45.

The CPA was at between 1102:58 and 1103:06 with 0.9nm horizontal separation and the Tucano descended from co-altitude to 700ft. At 1103:10 (Figure 2), the Tutor has maintained a wide downwind profile as the Tucano is descending downwind.

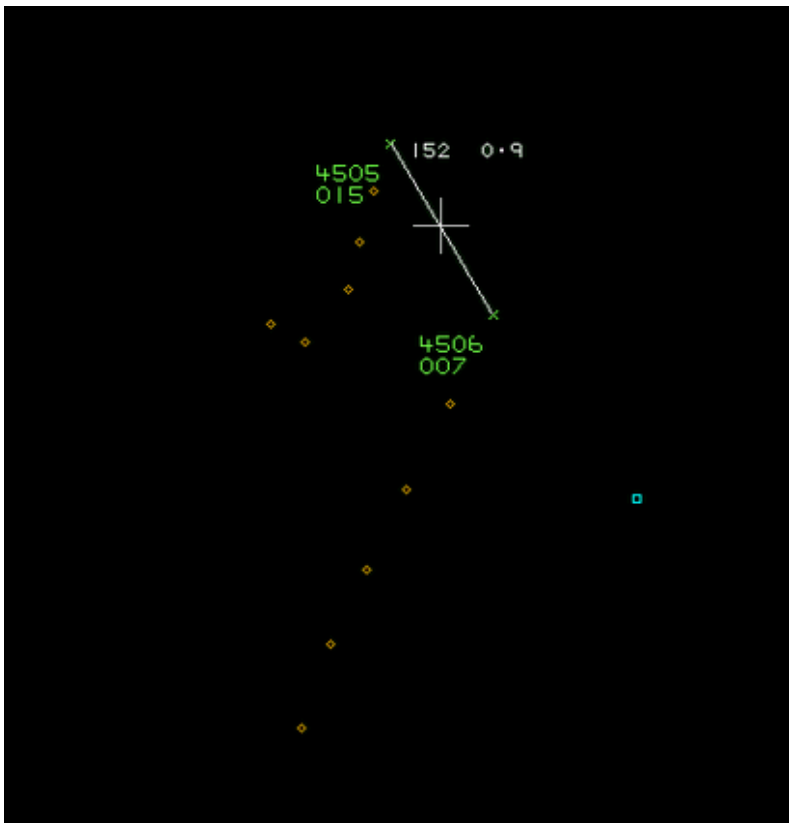


Figure 2: Geometry at 1103:10.

At 1103:39 (Figure 3), the Tucano had avoided onto deadside and the Tutor was positioning for right base.

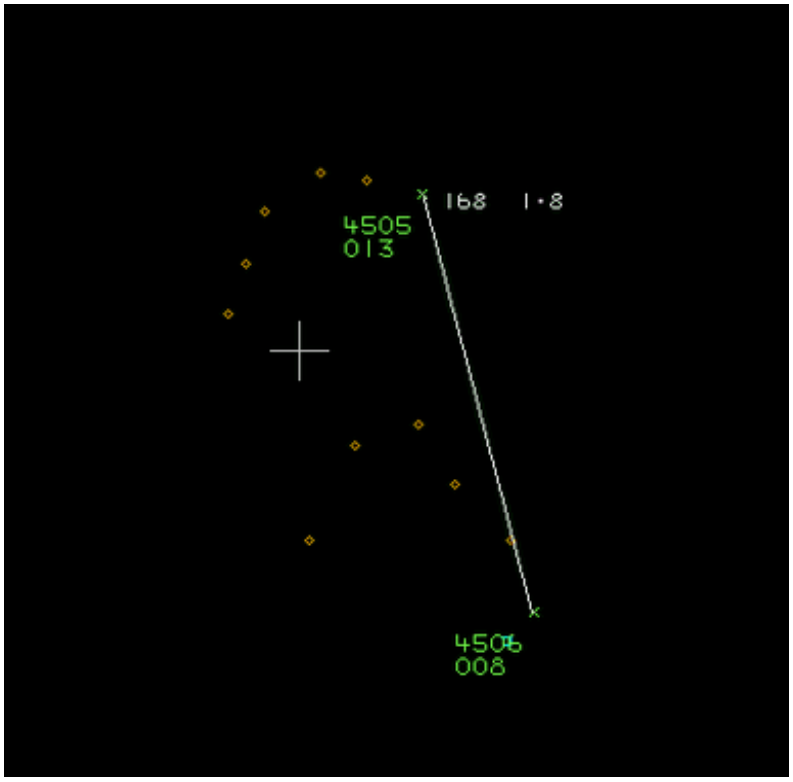


Figure 3: Geometry at 1103:39.

The unit undertook an in-depth Occurrence Safety Investigation (OSI). The investigation was not able to discover how or when the 'straight-in approaches only' restriction was imposed on Tutors; it was not part of the ADC handover and not on ATIS. The Tutor positioning from an overhead join to proceed wide downwind, following the ADC instruction for a straight-in approach, caused a TCAS TA in the Tucano. The controller had provided Hi-Brite information at 3 and 1nm to the Tucano pilot. Due to the poor visibility, the Tucano could not get visual and took avoiding action.

The local Flying Order Book was updated post-incident so that all recovery restrictions are placed on the ATIS. Recommendations were put in place to improve communication between the respective squadron flying supervisors and to improve display of flying restrictions in Tutor ops. The Tutor conversion syllabus was updated to include more information on overhead/straight-in joins and to receive a Tucano capabilities brief. The investigation also recommended reviewing the Tutor colour scheme in light of the visual acquisition issues.

The normal barriers to an Airprox in the visual circuit are lookout, Traffic Information and deconfliction procedures. The Tutor was visual and maintained so; the Tucano did not get visual, despite information from ATC and TCAS and decided to abort the approach and avoid to the deadside. The poor visibility and target characteristics of the Tutor help explain the non-sighting. Deconfliction procedures had been put in place to cater for the poor visibility but this had not been effectively communicated to all crews.

UKAB Secretariat

Both 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]. An aircraft operated on or in the vicinity of an aerodrome shall: (a) observe other aerodrome traffic for the purpose of avoiding collision; (b) conform with or avoid the pattern of traffic formed by other aircraft in operation[2].

Occurrence Investigation

The Unit Occurrence Investigation found that the Tutor Duty Pilot was not mandated to attend the met brief with ATC and that the other Duty Aircrew and made their own arrangements to be briefed by met personnel; leading in this case to the Tutor squadrons not being aware of the change recovery restrictions. Furthermore, Tutor recovery restrictions are not published as part of the Linton DATIS process, so the Tutor pilots could not receive the change in information whilst airborne. It was also found that the Tutor pilot, and others interviewed, were not aware that the Tucano had TCAS fitted, and that flying within 800ft of one would trigger a TA. The Tucano crew were unaware that the Tutor was visual with them, and may have been satisfied that the safety would not be compromised had they realised this, even with the TA. Additionally, they were unable to get visual with the Tutor, partly due to the reduced visibility, but partly due also to the white colour of the Tutor. The Unit had made a number of recommendations to rectify these issues, including changes to the Linton FOB and Tutor conversion syllabus.

Comments

HQ Air Command

This incident is a classic case of a number of 'holes in the cheese' lining up. The final barrier – that of lookout – was impeded by the colour scheme of the Tutor and the meteorological conditions of the day. The Tutor pilot was comfortable throughout as he was visual with the Tucano and there may have been an assumption on the part of the Tutor pilot that the Tucano pilot would have been visual with the joining Tutor. His statement that he would have avoided by a wider margin had he known that the Tucano was TCAS-equipped should generate debate because 'a safe distance' is always 'a safe distance', irrespective of equipment fitted to an aircraft.

[1] SERA.3205 Proximity.
[2] SERA.3225 Operation on and in the Vicinity of an Aerodrome.

The Investigation on the unit was thorough and uncovered a number of processes that were either not fit for purpose or non-existent, and these are now being addressed.

Summary

An Airprox was reported on 10th April 2015 at 1210 between a Tucano and a Tutor in the visual circuit frequencies, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

The Board first looked at the actions of the Tucano pilot; because he was flying a glide circuit he was higher than if flying a standard circuit. Although he had been given Traffic Information by the controller and from his TCAS, he couldn't see the Tutor and was understandably worried about its positioning. The Tucano crew did not assimilate that the Tutor pilot was visual with them, and the Board opined that ATC could also have relayed that the Tutor pilot was visual in order to give the Tucano pilot peace of mind. Given the information that he had, the Board considered that his actions were entirely appropriate in attempting to avoid an aircraft which he perceived to be a threat; albeit, another option, with an aircraft joining at the same height, may have been to have climbed on initially detecting the Tutor rather than descend into potential conflict with other traffic in the ATZ.

As for the Tutor pilot, the Board agreed that he hadn't been aware of the restriction of straight-in approaches only, and the Board wondered why the DATIS did not state the restriction. They also noted that the Unit OSI could not identify why the Tutor squadron was not specifically made aware of the recovery state. Notwithstanding, the Board opined that, once the Tutor pilot was told to make a straight in approach, he would have been better served in giving the visual circuit a wider berth to avoid penetrating the active ATZ on the 'live' side. In discussing his actions, the Board questioned whether he had made a late call for join. Accepting that the nature of the Tutor operations was for short 20-minute sorties in and out of the airfield (where time was of the essence), the Board nevertheless thought that his timing of the call may have limited his options. Having positioned for an overhead join, once he needed to re-position for a straight-in approach, he had less room to manoeuvre and this caused him to fly closer to the visual circuit than necessary. That said, the Board noted that he was visual with the Tucano at all times, and made RT calls stating so; that the Tucano pilots did not assimilate these calls was a timely reminder that pilots should not assume that other pilots have the same situational awareness as they. Overall, the Board were heartened to see that Linton had undertaken a thorough OSI and had made a number of recommendations to amend the Flying Order Book to further integrate Tutor operations.

The Board assessed the cause of the Airprox to be that the Tutor pilot flew close enough to the Tucano to cause its crew concern. Contributory factors were that the Tutor pilot was not made aware of the requirement for straight-in approaches, and that he flew too close to the visual circuit. The Tutor pilot was visual with the Tucano at all times and so the risk was assessed as Category C.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The Tutor pilot flew close enough to the Tucano to cause its crew concern.

Contributory Factor(s): 1. The Tutor pilot was not made aware of the requirement for straight-in approaches.

2. The Tutor pilot flew too close to the visual circuit.

Degree of Risk: C.