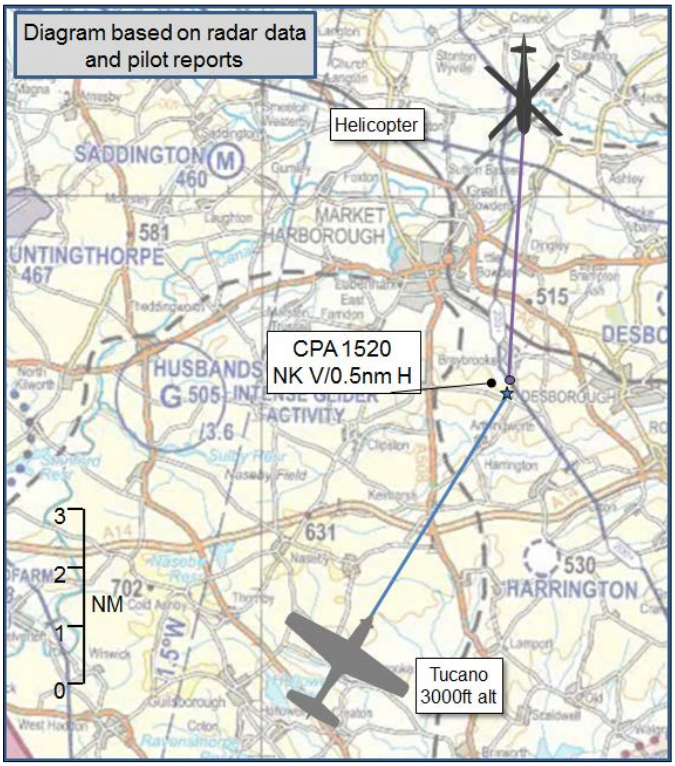
AIRPROX REPORT No 2016086

Date: 19 May 2016 Time: 1520Z Position: 5227N 00052W Location: Market Harborough

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Tucano	Helicopter
Operator	HQ Air (Trg)	Unknown
Airspace	Lon FIR	
Class	G	G
Rules	VFR	
Service	Basic	
Provider	Wittering	
Altitude/FL		
Transponder	A, C, S	None
Reported		
Colours	Black	Black
Lighting	Nav	
Conditions	VMC	
Visibility	30km	
Altitude/FL	3000ft	
Altimeter	QFE	
Heading	030°	
Speed	N/K	
ACAS/TAS	TCAS I	
Alert	None	
Separation		
Reported	200ft V/200m H	
Recorded	NK V/0.5nm H	



THE TUCANO PILOT reports he was conducting an instructional flight with a student QFI on a land away. On the return leg, they were receiving a Traffic Service from Brize Radar and flew towards the DTY beacon at 4000ft; once overhead they turned onto a heading of 030° and descended to 3000ft. ATC comms were handed over to Wittering Zone, and a Basic Service was established prior to entering low-level at Rutland Water. When 19nm from the DTY, the instructor became visual with an aircraft in the 11:30 position, co-height, 1-2nm away. He took control of the aircraft and carried out avoiding action by manoeuvring the aircraft vertically and to the right. Upon levelling he identified the other aircraft as a black helicopter, possibly an Agusta 109, and observed it pass 100-200ft below and 100-200m away horizontally. There was no TCAS advisory warning, or any TCAS graphical indication of the helicopter either prior to, or after the event. Once his aircraft was settled, he reported the Airprox to the Wittering Zone controller.

He assessed the risk of collision as 'High'.

THE HELICOPTER PILOT could not be traced.

THE WITTERING APPROACH CONTROLLER reports that at the time of the Airprox he was Wittering Approach, with Wittering Zone bandboxed, and was controlling multiple aircraft on two frequencies (UHF Approach and VHF Zone). The Tucano pilot called for a Basic Service which was agreed, a Wittering Squawk and the RPS was passed. The range and altitude of the Tucano meant that there was only a faint primary contact in the reported position, and no SSR. He had observed a DF trace to the south west indicating that the call was from the primary contact, but he had not positively identified the Tucano. His priority lie with other aircraft under his control receiving a Traffic Service, and an imminent handover on another Tucano for a radar approach. At 1522 the Tucano pilot reported the Airprox and informed the controller that he was climbing to avoid; the conflicting air system had not been observed prior to the event.

THE WITTERING SUPERVISOR CONTROLLER reports that he was the Wittering Zone controller and ATCO I/C during the incident. At the time of the incident he was engaged on the ACR's sole console telephone line discussing a procedural matter with a unit Squadron Instructor. This point is relative because it meant that external units would have been unable to contact the Approach controller because there were no other direct lines established. He was aware that the Approach Controller was busy with traffic, although content that he had capacity to spare. The nominated Witt(PA) controller was also seen to be providing assistance by monitoring the frequency and lending support when able. Upon terminating the landline conversation, the Approach Controller advised him that an Airprox had been reported, the details of which were confirmed and recorded by the PA Controller. In his opinion the Approach Controller had dispensed his obligations and provisions of ATS in accordance with the Unit's priority list. The relative range, altitude and requested ATS of the reporting aircraft would have made identification and any provision of Traffic Information difficult, and the incident was coincident with another Tucano calling on the Approach frequency for recovery to Wittering.

Factual Background

The weather at Wittering was recorded as follows:

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METAR EGXT 191450Z 20012KT 9999 SCT031 SCT200 17/11 Q1010 BLU=
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Portions of the tape transcripts between Wittering Approach and the Tucano pilot are below:

From	To	Speech	Time
Tucano	WIT App	Wittering Approach [Tucano C/S]	15:21:22
WIT App	Tucano	[Tucano C/S] is that you calling?	15:21:26
Tucano	WIT App	Affirm [Tucano C/S] single Tucano, 14 miles North East of Daventry at 3000ft, 1012, request Basic Service and the Barnsley pressure	15:21:26
WIT App	Tucano	[Tucano C/S] Roger, basic service squawk 3750	15:21:40
Tucano	WIT App	3750 Basic, [Tucano C/S]	15:21:46
WIT App	Tucano	[Tucano C/S] Barnsley 1002	15:22:00
Tucano	WIT App	1002 [Tucano C/S]	15:22:05
Tucano	WIT App	Wittering Approach [Tucano C/S] is to report an Airprox, currently under Daventry on 030 at 19 miles, a ???? 15 helicopter, not squawking.	15:22:42
WIT App	Tucano	[Tucano C/S] Roger, say again position.	15:22:59
Tucano	WIT App	[Tucano C/S] Many thanks, he passed down my left hand side, about 200 metres, no height, I climbed to avoid.	15:23:04

Analysis and Investigation

Military ATM

At 1521:59 (Figure 1), the Tucano is 3.6nm to the south west of the primary contact, believed to be the A109, transiting south.

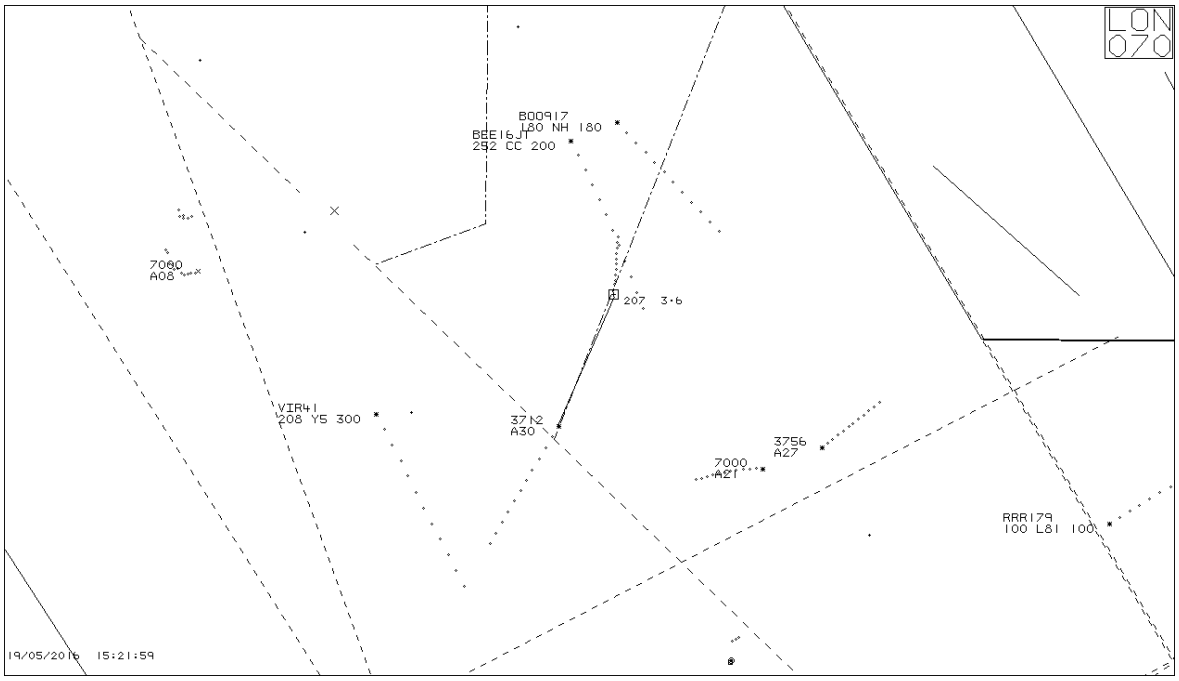

Figure 1: Geometry at 1521:59 (Tucano squawking 3712; A109 believed to be primary contact).

At 1522:24 (Figure 2), the Tucano is under a Basic Service and 1nm away from the primary contact.

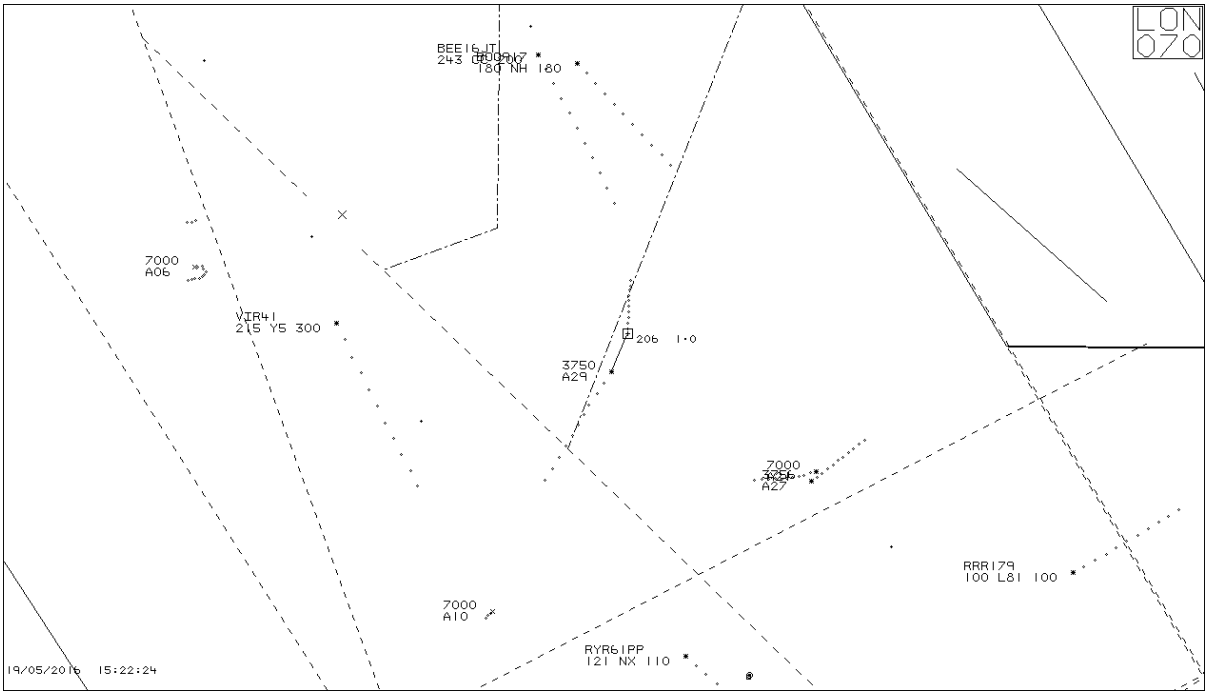

Figure 2: Geometry at 1522:24 (Tucano squawking 3750; A109 believed to be primary contact).

At 1522:40 (Figure 3), the Tucano radar return merges with the primary contact and the mode C of the Tucano elevates from 030 to 033.

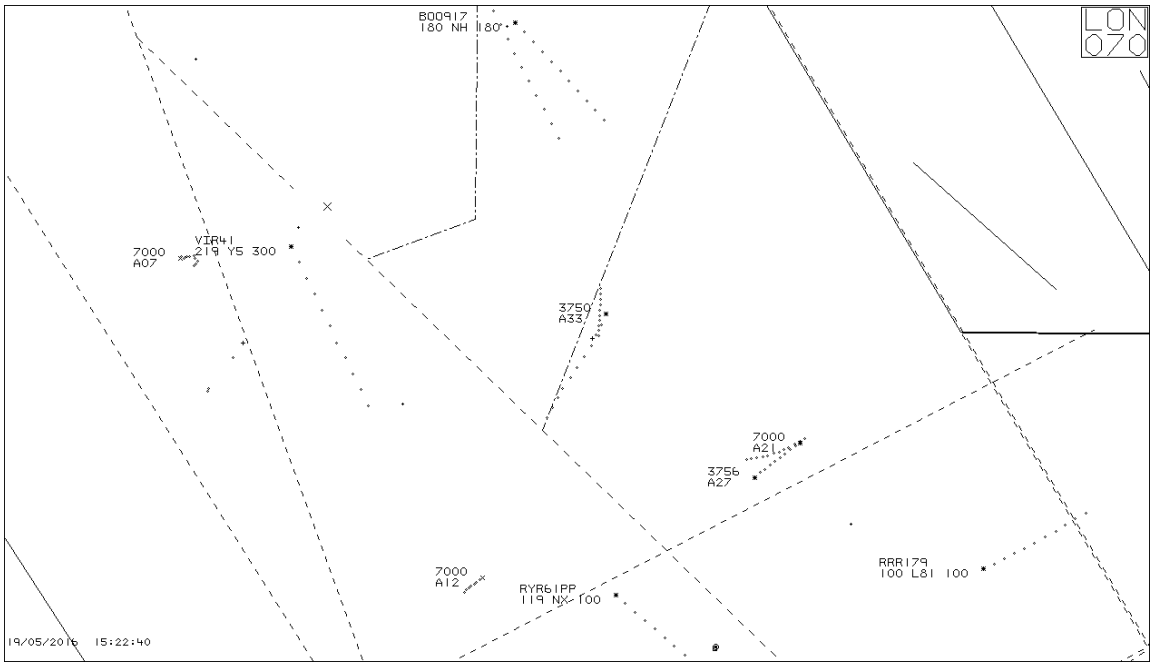

Figure 3: Geometry at 1522:40 (Tucano squawking 3750; A109 believed to be primary contact).

The Tucano Captain reported requesting a Basic Service from Wittering ATC prior to entering low level at Rutland Water. Weather conditions at the time were reported as visibility of 10km+ and a cloud base of approximately 4500ft. The Captain reported becoming visual with an aircraft in the 11:30 position, co height at 1-2nm, at this point he took control of the aircraft from the Student and carried out and avoiding action, climbing the aircraft and turning right.

The Wittering ATC Approach controller reported working band boxed on UHF and VHF Zone working multiple aircraft on both frequencies. The Tucano pilot called requesting a Basic Service, which was provided; however, the controller reported seeing a DF trace to the South West but due to the range and altitude of the Tucano only a faint primary contact was seen and no SSR was visible on the radar display. The lack of radar return and SSR would have precluded the controller positively identifying the aircraft, although under a Basic Service there is no requirement for this. With other aircraft on frequency under a Traffic Service, the controller prioritised their task to an imminent handover to an adjacent unit and so was not focused on locating the position of the Tucano. Post the on-frequency Airprox report from the pilot, the controller reported being unable to locate the conflicting traffic. In this instance the lack of mode A/C information from the conflicting traffic makes identification by the controller more difficult.

The primary barrier for the Tucano Crew in this instance was 'see–and-avoid'. The lack of a report from the conflicting traffic makes it difficult to paint a full picture of the Airprox; however, transponder information from the A109 may have allowed TCAS to provide the Tucano pilot with an earlier warning of the confliction. Due to the type of service requested and the poor radar coverage (primary and SSR) in the location the Tucano called Wittering ATC, it is unlikely the controller would have been able to identify the aircraft and provide information on any confliction.

UKAB Secretariat

The Tucano and helicopter 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]. If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right[2].

[1] SERA.3205 Proximity.

Comments

HQ Air Command

This is another incident in Class G airspace where the acknowledged barriers were weakened. The encounter took place in an area where the radar coverage from RAF Wittering is known to be poor so, irrespective of the service that the Tucano was under, it is unlikely that the controller would have been able to provide timely Traffic Information on the helicopter (which was a 'primary contact' only). Furthermore, it is impossible to say without tracing the helicopter pilot whether or not his/her aircraft was equipped with a serviceable transponder – the evidence suggests that there was no SSR trace on that aircraft. Not only does this limit the controller's ability to pass accurate Traffic Information, it also weakens the second barrier – that of compatible CWS (the TCAS on the Tucano did not detect the presence of the helicopter). Ultimately, disciplined lookout from the Tucano crew permitted detection of the conflict and action to be taken to increase separation.

This incident serves as a reminder to all crews that there are no infallible means of detecting airborne conflictions; a lack of TI from ATC or no contact on the CWS does not mean that there is nothing there.

Summary

An Airprox was reported when a Tucano and a untraced helicopter flew into proximity at 1520 on Thursday 19th May 2016. The Tucano pilot was operating under VFR in VMC, and in receipt of a Basic Service from Wittering Approach.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the Tucano pilot, 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 noted with disappointment that the helicopter pilot could not be traced because, without his narrative, they were unable to tell whether he had been visual with the Tucano or not. They wondered why the helicopter was not squawking: again, without a pilot report they were unable to know for sure but, with the Tucano pilot reporting that the helicopter was a modern looking aircraft similar to a A109, it was likely to have been fitted with a transponder (although it was possible that it was unserviceable). Notwithstanding, the Board wished to convey to all pilots the importance of selecting their transponders on in order to provide situational awareness to others, including ATC. With the proliferation of TAS and P-FLARM, both of which use the data received from the transponder, even the use of a simple 7000 conspicuity squawk can help these systems provide Traffic Information to other pilots.

For his part, the Board noted that the Tucano pilot was on the edge of Wittering's radar coverage and so was not able to get a Traffic Service. Members also noted that although he did not receive any TAS warning (because the helicopter was not squawking), he did look-out and see the other aircraft in time to take avoiding action. The Board thought that there was little more that he could have done in the circumstances, and commended him for continuing with rigorous look-out and not relying solely on ATC or his TAS for Traffic Information.

As for the ATC aspects, members noted that the Tucano was on a Basic Service on the edges of radar coverage for RAF Wittering and had not been formally identified; the controller had therefore understandably prioritised other inbound aircraft for his attention. Given that the helicopter was not squawking, it was unlikely to show on the radar in that area and so the Board agreed that it was not

[2] SERA.3210 Right-of-way (c)(1) Approaching head-on.

surprising that the controller had not provided Traffic Information in the circumstances, and that he was not required to do so under the terms of the agreed Basic Service.

The Board quickly agreed that the cause of the Airprox was a conflict in Class G airspace that had been resolved by the Tucano pilot; because he was able to take timely and effective avoiding action, the risk was assessed as Category C.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A conflict in Class G resolved by the Tucano pilot.

Degree of Risk: C.