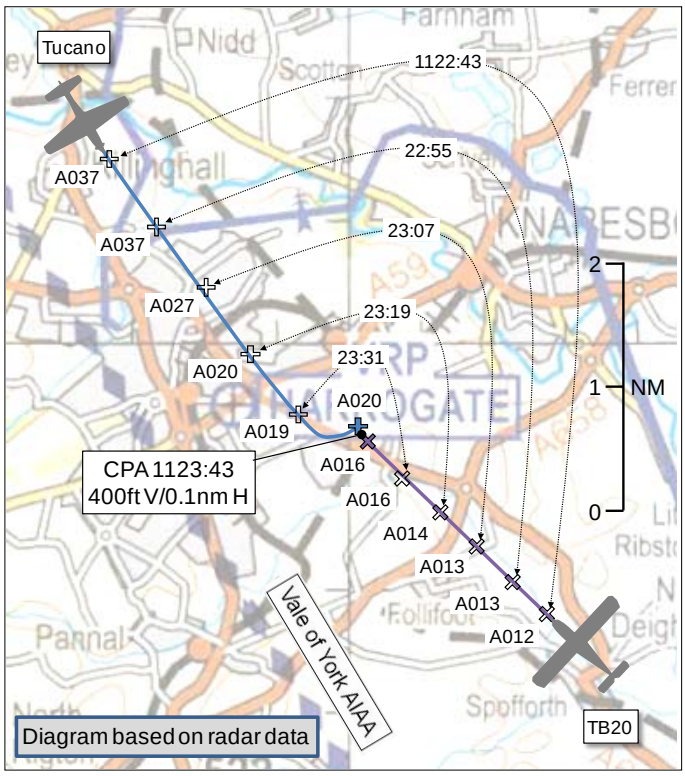
AIRPROX REPORT No 2013071

Date/Time:	11 Jul 2013 1124Z	
Position:	5359N 00130W (9.4nm WSW RAF Linton-on-Ouse)	
Airspace:	Vale of York AIAA (*Class*: G)	
	Reporting Ac	*Reported Ac*
Type:	Tucano T1	Socata TB20
Operator:	HQ Air (Trg)	Civ Pte
Alt/FL:	2400ft QFE (1025hPa)	NK NK
Weather:	IMC KLWD	IMC KLWD
Visibility:	0km	0km
Reported Separation:	200ft V/0.5nm H	NK
Recorded Separation:	400ft V/0.1nm H	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE TUCANO PILOT reports recovering to RAF Linton-on-Ouse (LIN). The black and yellow ac had the SSR transponder selected on with Modes A and C; the lighting state was not reported. The ac was fitted with TCAS I. At the time of the Airprox the pilot was operating under IFR, IMC in cloud, with a Traffic Service from LIN APR. Prior to this, he was initially in VMC at FL120 when handed over to LIN APR from London Mil, 30nm on the 300R from LIN with a cloud layer estimated as base of 2000ft and cloud tops at 3000ft. He requested a Traffic Service and radar vectors for a PAR recovery and was instructed to descend to height 4000ft on the LIN QFE. He was then given a heading of 150°, updated to 145°. He was informed of traffic at a range of approximately 6nm at a position to the East of him, which he identified on TCAS, indicating 2000ft below. He was then instructed to descend to 2000ft and report cockpit checks complete. As he descended he entered cloud at 3000ft, becoming 'fully IMC' by 2800ft. At this point, heading 145° at 180kt and concentrating on his instrument scan, a TCAS alert sounded; he requested a Deconfliction Service and reduced the TCAS scale. ATC advised an immediate left turn onto North, which he implemented, at 2400ft, using 60° angle of bank, levelling off at 2300ft. At its closest point, the traffic indicated 200ft below and within 0.5nm on the TCAS display. ATC then called him clear of traffic and he completed the PAR without further incident. changing his intentions to land. The pilot noted that he 'regained VMC' at 2100ft but that he did not gain visual contact with the conflicting traffic at any point.

He assessed the risk of collision as 'High'.

THE TB20 PILOT reports conducting a transit flight. The white and blue ac had navigation, beacon and strobe lights selected on, as was the SSR transponder with Modes A, C and S. The ac was not fitted with an ACAS. The pilot was operating under VFR initially. He and his passenger had planned the transit with the aid of a GPS map unit and initially took up their planned track, heading 316° at about 130kt and level below cloud at altitude 1300ft, some 2nm to the East of the Leeds Bradford International Airport (LBIA) CTR. This was confirmed by reference to the visible ground track and an NDB. After 'exiting Fenton MATZ' with Fenton APR, he contacted LBIA RAD, initially requesting a Traffic Service in order to climb through cloud to the planned cruise altitude of 4500ft, or FL65 if higher was required. He was instructed to standby and to remain outside CAS, which he did. He estimated that LBIA RAD agreed a Traffic Service when they were approximately 2nm West abeam the town of Wetherby, and that they were 'fully IMC' at 1400-1500ft in the climb. LBIA RAD passed

TI, including details of opposite direction traffic in the descent. The pilot reminded LBIA RAD that he was 'in solid IMC' and stated he did not detect any sense of urgency in the controllers voice. He continued the climb, breaking out in to 'clear air' at 4000ft and continued to 'the quadrantal cruise altitude' of 4500ft. He and his passenger were unaware of an Airprox event until contacted by phone after the flight.

THE LIN APR CONTROLLER reports he was bandboxing[1] with DIR due to low traffic intensity. Weather conditions were good; colour code White[2] with a layer of BKN cloud at 1800ft. He was controlling the Tucano pilot who had just been handed over from London at FL120. The Tucano pilot, being vectored for a PAR to RW03RH, was given Linton's weather and airfield details and a descent to height 4000ft due to the range from LIN. The LIN APR was monitoring 'a Leeds squawk', manoeuvring to the West of LIN, that was indicating 1000ft on Mode C. The Tucano pilot was descending to height 2000ft in accordance with the Radar Vector Chart and asked to report cockpit checks complete. Traffic information was passed to the Tucano pilot of an opposite direction contact, 12 o'clock, 4nm, indicating below but climbing. Traffic information was updated at 2nm with the track now indicating slightly below. The Tucano pilot requested a Deconfliction Service; an avoiding action turn onto a heading of 030° was issued. Once clear, vectors were given back 'into the pattern' and the Tucano pilot was handed over to DIR.

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

THE LIN SUP reports that, whilst he was in the VCR, the LIN APR had sent the DIR for a short break due to the low traffic levels. The SUP was content that the number of speaking units airborne would not cause an overload of capacity. The SUP was in the ACR during the occurrence. He stated he had remarked earlier that he was surprised that LBIA were 'working a track' outside their CTZ. However, due to it manoeuvring at low-level in Class G airspace, squawking with a verified Mode C, he elected not to call for traffic information. He was aware of the LIN APR vectoring the Tucano pilot for a PAR under a Traffic Service and heard the initial traffic information call. He noticed that the 'Leeds track' was now climbing and had taken up a reciprocal heading to the Tucano, which had commenced a descent to 2000ft. He therefore asked the LIN APR to amplify the traffic information with the 'relative altitude difference in feet'. He then instructed the LIN APR to stop the Tucano's descent as the rate of climb of the Leeds track had begun to increase. This instruction was not carried out as the Tucano pilot called the LIN APR almost immediately afterwards, requesting a Deconfliction Service. Avoiding action was passed and a separation of about 0.5nm was achieved, with the Mode C of the two aircraft indicating a difference of 200-400ft at CPA. An Airprox was not reported over RT at the time, but the Tucano pilot did subsequently file, after he had landed.

Factual Background

The weather for Leeds Bradford and RAF Linton-on-Ouse was recorded as follows:

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METAR EGNM 111120Z 04004KT 320V130 9999 BKN015 14/10 Q1027=
METAR EGXU 111050Z 32006KT 9000 HZ BKN018 16/11 Q1027 WHT BECMG FEW020 BLU=
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Analysis and Investigation

CAA ATSI

The incident occurred at 1123:42, 9.5nm to the SW of LIN, within Class G uncontrolled airspace, between a Tucano T1 and a Socata TB20 Trinidad.

The Tucano pilot was in IMC, inbound to LIN in receipt of a Traffic Service from Linton Radar on a UHF frequency and was being vectored for a PAR recovery. Just prior to CPA, the Tucano pilot

[1] Bandboxing is the practice of taking on the tasks of two ATC positions, traffic levels permitting.
[2] Cloud base (at least 3/8 cloud) between 1500ft and 2500ft and/or visibility between 5km and 8km.

requested a Deconfliction Service. The TB20 pilot was operating under IFR and was in IMC on a transit flight, in receipt of a Traffic Service from LBIA RAD on a VHF frequency.

The workload of the LBIA controller was considered to be moderate.

The TB20 pilot contacted LBIA RAD at 1118:29. He reported his location and routeing, stated he was climbing to 6500ft, and requesting transit clearance. The LBIA RAD replied, *"*[TB20 C/S] *negative remain outside Leeds controlled airspace Leeds QNH one zero two seven you're under a Basic Service"*, which was acknowledged correctly.

At 1120:49, the TB20 pilot requested*, "…could you give us a Traffic Service while we climb through cloud to get on top* [TB20 C/S]*".* The RAD responded, *"Okay* [TB20 C/S] *squawk two six seven five".* This was read-back correctly and the TB20 pilot reported at 1000ft on 1027hPa just abeam Wetherby. The LBIA RAD advised, *"Roger identified there about ten miles northeast east-northeast of Leeds under a reduced Traffic Service due to your altitude a-as you climb report when you're VMC on top".* The TB20 pilot acknowledged, *"Reduced Traffic Service until VMC on top ?????* [TB20 C/S] *thank you"*.

At 1122:00, the following RTF exchange between LBIA RAD and the TB20 pilot occurred:

RAD *"and [TB20 C/S] there's a contact er to the northwest of you there about er eight miles southeast bound indicating four thousand two hundred feet er with a climb arrow*"
TB20 *"I'll try to keep a look out – just now going into cloud* [TB20 C/S].
RAD *"Roger thanks and er what level are you climbing to confirm"*
TB20 *"Six thousand five hundred feet* [TB20 C/S]*"*
RAD *"Roger the traffic just in your twelve o'clock six miles er opposite direction four thousand feet indicated"*
TB20 *"Copied* [TB20 C/S]*"*
RAD [1122:49] *"*[TB20 C/S] *that er contact still in your twelve o'clock now four and a half miles opposite direction indicating four thousand feet"*
TB20 *"Keep a good lookout just climbing through two thousand feet now on one zero two seven"*
RAD "*Roger*"

The Tucano pilot's written report indicated he was in receipt of radar vectors, heading 145°, in the descent to a height of 4000ft when he was advised of traffic 6nm away, which he reported was observed on TCAS 2000ft below. The Tucano pilot indicated that he was then instructed to descend to 2000ft by LIN APR.

At 1123:09, the two aircraft were on reciprocal tracks at a range of 3nm, with the Tucano indicating FL027 (altitude 3100ft) and the TB20 FL013 (altitude 1700ft). The Tucano pilot's written report indicated that in response to a TCAS TA he had requested a Deconfliction Service and was immediately advised to turn left onto North.

At 1123:16, another aircraft called LBIA RAD and the controller replied *"apologies last call again".* The LBIA RAD controller's written report indicated that when next looking at the radar screen the two subject aircraft were a lot closer, at a separation range of 1nm and with 300ft vertical separation. The controller immediately passed updated traffic information as follows:

RAD [1123:25] *"*[Other aircraft C/S] *standby break* [TB20 C/S] *the tr-contact twelve o'clock one mile indicating now two thousand three hundred feet" (*see Figure 1).

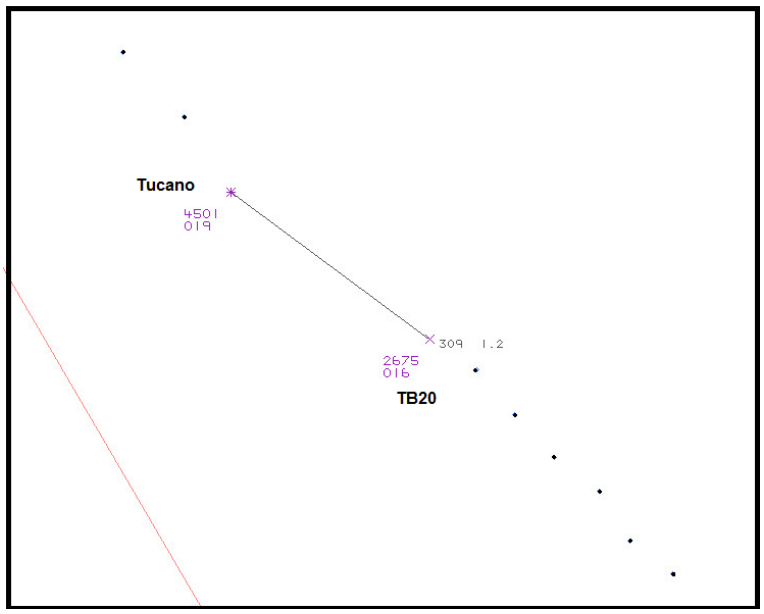

Figure 1 – Swanwick MRT at 1123:28

TB20 [1123:32] *"Er that's very close ma'am would you like us to stay on track or would you like me to turn left or right"*. At 1123:36 the Tucano was at FL020 (altitude 2400ft) commencing the left turn and 0.6nm northwest of the TB20, which was at FL016 (altitude 2000ft), as shown in Figure 2 below.

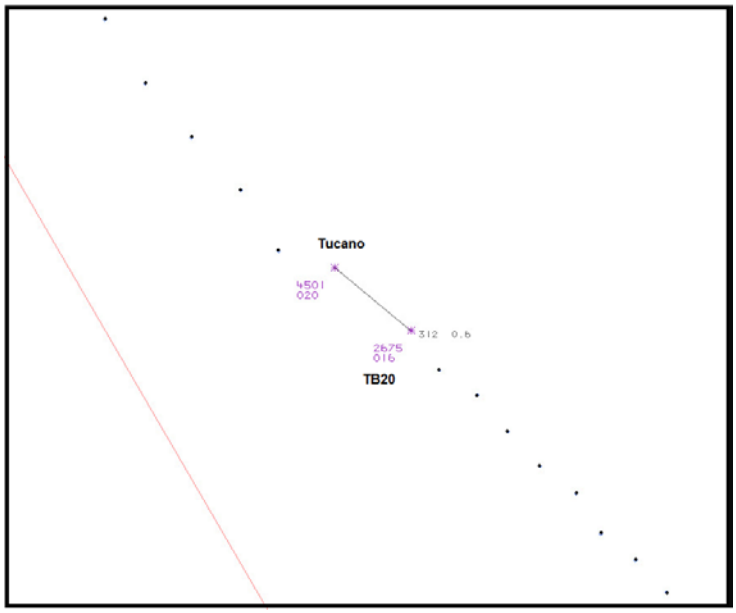

Figure 2 – Swanwick MRT at 1123:36

At 1123:44 (CPA), the range between the two aircraft had reduced to 0.3nm with a vertical distance of 200ft as shown in Figure 3 below.

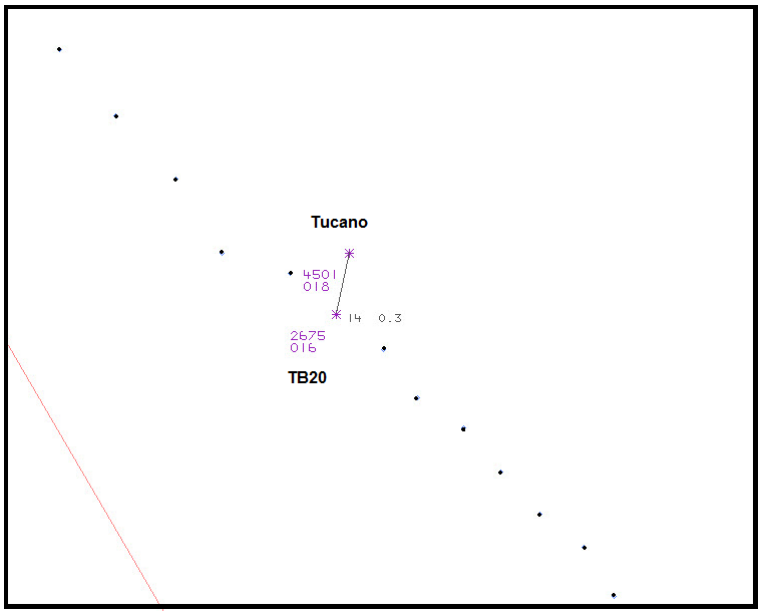

Figure 3 – Swanwick MRT at 1123:44

At almost the same time, 1123:46, the following RTF exchange between LBIA RAD and the TB20 pilot occurred:

RAD *"And that er contact now is turning northbound indicating two thousand three hundred feet now"*
TB20 *"We'll maintain track on zero er three zero degrees"* [note: It was likely the TB20 pilot meant to say 330 degrees, which was the aircraft's track]
RAD *"Okay it seems to be clearing to the northeast now"*
TB20 *"???? copied* [TB20 C/S]*".*

At 1125:00, the TB20 pilot reported VMC on top in the climb, intending to level-off at altitude 4500ft.

At 1126:54, the TB20 pilot was advised that the Traffic Service was terminated and a Basic Service was agreed. The TB20 pilot was instructed to squawk 7000 before going en-route at 1134:20.

CAP774 (UK Flight Information Services), Chapter 3 (Traffic Service), Page 1, paragraph 5, states:

> 'The controller shall pass traffic information on relevant traffic, and shall update the traffic information if it continues to constitute a definite hazard, or if requested by the pilot...'

In Class G airspace, conflicting traffic may not be known to ATC and so it is necessary for all flights to make use of the 'see and avoid' principle. ATC will pass traffic information and instructions to assist pilots to 'see and avoid' each other.

Both aircraft were IMC on a Traffic Service in an environment and conditions when it would have been appropriate for them to have agreed a Deconfliction Service.

The LBIA RAD controller passed the TB20 pilot traffic information on the Tucano at a range of 8nm at 4200ft, with further updates as the range reduced to 6nm at 4000ft and at 4.5nm at 4000ft. At this point the vertical separation between the two aircraft was 2000ft. When the controller next looked at the situation the Tucano was descending on a reciprocal track at a range of 1.2nm and 300ft above the TB20. The controller immediately passed traffic information as a warning. The options available to the LBIA RAD at this late stage were very limited - had the controller considered giving avoiding action, the geometry of the situation would have dictated a right turn,

in accordance with RoA (Rule 10 - converging head on), which would have increased the risk of collision as the Tucano had been turned left.

CAP774, Chapter 3 (Traffic Service), Page 1, paragraph 6, states as follows:

> 'Whether traffic information has been passed or not, a pilot is expected to discharge his collision avoidance responsibility without assistance from the controller. If after receiving traffic information, a pilot requires deconfliction advice, an upgrade to Deconfliction Service shall be requested.'

Paragraph 3 states as follows:

> *'Pilots should be aware that a Traffic Service might not be appropriate for flight in IMC when other services are available.'*

At a late stage the Tucano pilot requested a Deconfliction Service and the avoiding action left turn provided by LIN RAD, together with the swift action of the Tucano pilot in levelling off and making an immediate left turn with 60° of bank, was sufficient to resolve the conflict. The Tucano pilot reported that the TB20 passed within 0.5nm horizontally and 200ft below. Radar showed the minimum separation as 0.3nm laterally and 200ft vertically.

Military ATM

This incident occurred 9.5nm WSW of LIN at 1123:41 on 11 Jul 13, between a Tucano and a TB20. The Tucano was recovering to LIN RW03RH for a PAR and was in receipt of a Traffic Service and latterly a Deconfliction Service from LIN APR. The TB20 pilot was operating under IFR, climbing to achieve VMC en-route and in receipt of a Traffic Service from LBIA RAD.

All heights/altitudes quoted are based upon SSR Mode C from the radar replay unless otherwise stated. 'Live-mic' recording from the LIN SUP position was available to inform the investigation.

LIN APR described their workload and task complexity as 'low' and was providing an ATS to one additional ac, along with the incident Tucano; the additional ac free-called LIN APR during the incident sequence for recovery to LIN.

The incident sequence commenced at 1121:53 as the TB20 pilot began a slow climb from an indicated altitude of 700ft, tracking NW'ly, 9.8nm SE of the Tucano; the Tucano was heading 150°, indicating 3700ft (level 4000ft LIN QFE). Figure 1 depicts the geometry at this point; SSR 3A 4501 was the Tucano, SSR 3A 2675 was the TB20. Prior to the start of the incident sequence and until 1122:31, LIN APR was involved in a continuous exchange with an un-related Tucano free-calling for a PAR recovery, 21.3nm NNE of LIN and 25.1nm NE of the incident Tucano.

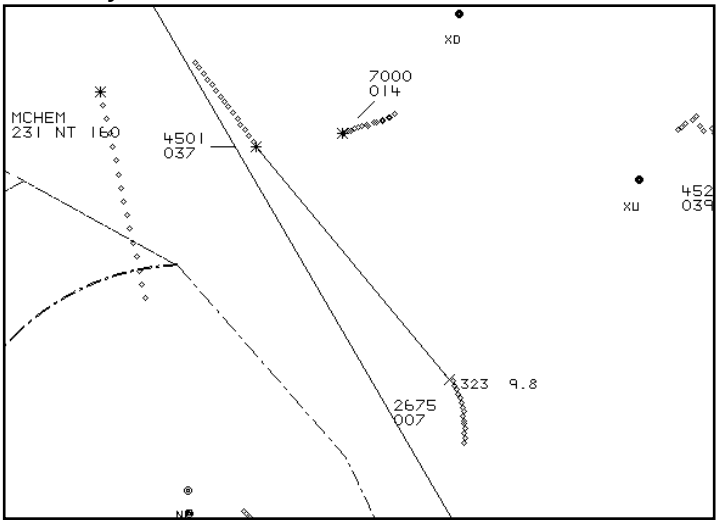

Figure 1: Incident Geometry at 1121:53.

At 1121:15, LIN SUP was recorded asking "*why are Leeds controlling that*?", a question linked to their reported comment that they were 'surprised that LBIA were working a track outside of their CTZ'. However, due to it manoeuvring at low level in Class G, LIN elected not to call for TI as it was squawking with a verified Mode C. This is borne out on the transcript by the SUP's question. Having completed the initial actions with the un-related Tucano, at 1122:34, LIN APR instructed the incident Tucano to "*descend to height 2000ft, cockpit checks report complete*" which was acknowledged; Figure 2 depicts the incident geometry at this point with the TB20's RoC being about 590fpm.

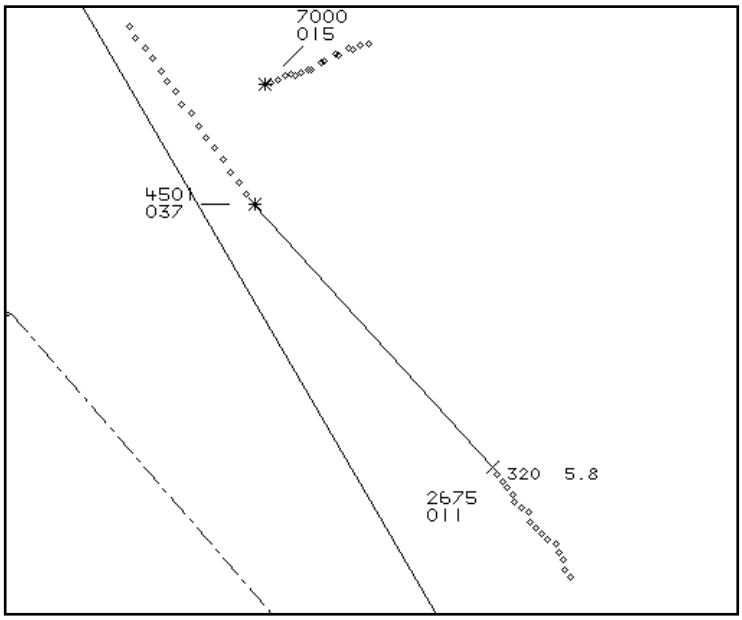

Figure 2: Incident Geometry at 1122:34.

The guidance material to CAP774 Chapter 3 (Traffic Service), paragraph 6 states that 'when providing headings/levels for the purpose of positioning and/or sequencing or as navigational assistance, the controller should take into account traffic in the immediate vicinity, so that a risk of collision is not knowingly introduced by the instructions passed'.

At 1122:47, LIN APR advised the Tucano of "*traffic 12 o'clock, 4 miles, opposite direction, indicating below, climbing*" which was acknowledged at 1122:52; Figure 3 depicts the incident geometry at this point.

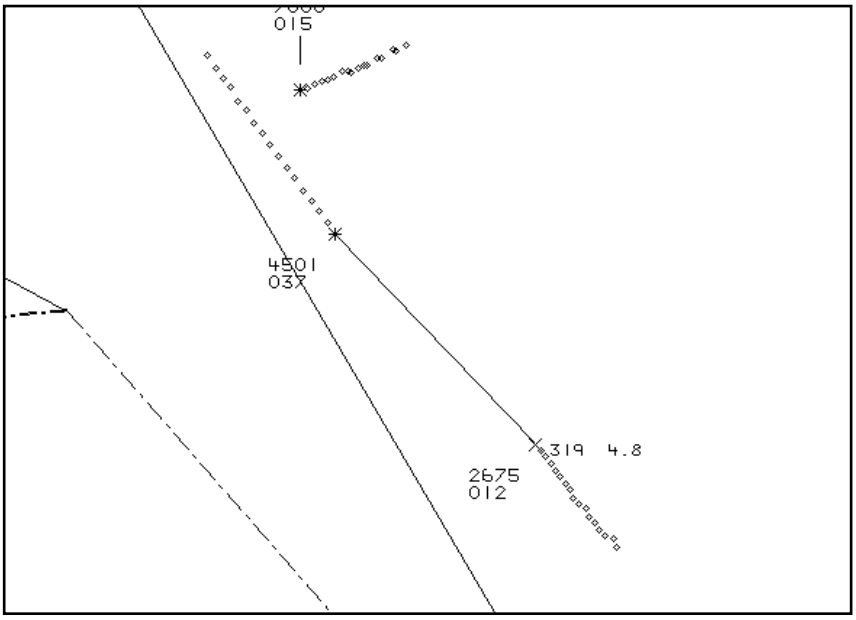

Figure 3: Incident Geometry at 1122:47.

Based upon the report of the LIN SUP, this was the point at which he became aware of the developing situation, immediately advising LIN APR to "*tell him how far below because he'll go D-S on you*." This was a reference to LIN APR's use of "*below*" to describe the TB20's level, rather than using the phraseology contained within CAP413, Chapter 5, paragraph 1.6[3]. The Tucano pilot commenced descent at 1122:59 and indicated passing 3000ft LIN QFE at 1123:06; approximately the time at which he entered IMC.

The guidance material to CAP774, Chapter 3 (Traffic Service), paragraph 5 states that 'controllers shall aim to pass information on relevant traffic before the conflicting aircraft is within 5 NM, in order to give the pilot sufficient time to meet his collision avoidance responsibilities and to allow for an update in traffic information if considered necessary'.

MMATM, Chapter 11, paragraph 26 states that 'when the prevailing circumstances suit the use of only approximate level information (ie slightly above/below, above/below, well above/below), the following may be used as guidance:

a. Slightly above/below - vertical difference up to 1000 ft.

b. Above/below - vertical difference of between 1000 ft and 3000 ft.

c. Well above/below - vertical difference exceeding 3000 ft (such information would normally be irrelevant but could be of importance, eg, if a high rate of climb or descent is involved)'

However, the MMATM does not give examples of circumstances in which only approximate level information may be used or useful. Moreover, this reference is at odds with CAP413, Chapter 5, paragraph 1.6 which provides the phraseology that 'should' be used 'whenever practicable' and it is noteworthy that the guidance within the MMATM is not incorporated within CAP493.

The guidance material to CAP774, Chapter 3 (Traffic Service), paragraph 3 states that 'pilots should be aware that a TS might not be appropriate for flight in IMC when other services are available'.

About 10sec after the SUP's advice to LIN APR, at 1123:10, LIN APR updated the TI to the Tucano pilot advising him "*previously called traffic 12 o'clock, 2 miles, opposite direction, indicating 1000 ft below, climbing*". At this point, the TB20 was 2.7nm SE of the Tucano, tracking NW'ly, indicating a climb through 1300ft; the Tucano was heading 150° and indicating a descent through 2500 ft (about 2200ft LIN QFE). Based on the Tucano pilot's report, this TI was almost co-incident with the receipt of a TCAS TA.

As LIN APR was finishing their TI transmission and prompted by a perceived increase in the TB20's RoC, LIN SUP instructed APP to "*stop his descent* [name of LIN APR] *you're about to descend him to him*". However, LIN SUP was interrupted by the Tucano pilot's request for a DS. LIN APR immediately advised the Tucano "*avoiding action, turn left immediately heading 0-3-0 degrees, traffic was 12 o'clock, 1 mile, opposite direction, indicating slightly below, climbing*". The pilot read-back "*left 3-6-0* degrees" and whilst this error was not corrected by LIN APR, it was neither a causal nor contributory factor in this Airprox. It is worth highlighting that guidance for controllers on the provision of ATS to solo student pilots is to 'avoid complex instructions' and that it is considered 'good practice' not to include instructions to turn and climb in the same transmission. Thus, given that the TB20 was climbing, LIN APR correctly prioritised issuing lateral avoiding action to break the conflict, rather than to instruct a 'level-off' or a climb. Figure 4 depicts the incident geometry at 1123:20, the point that LIN APR passed the deconfliction advice, and is an approximation of LIN APR's surveillance picture in the immediate vicinity of the Airprox.

[3] CAP413 … 1.6.2 states : c) (when giving traffic information to an aircraft which is climbing or descending) '… 1000 feet above/below cleared level.'

At this point, 2nm lateral separation existed between the 2 ac, with the Tucano 4nm E of the edge of the LBIA CTR.

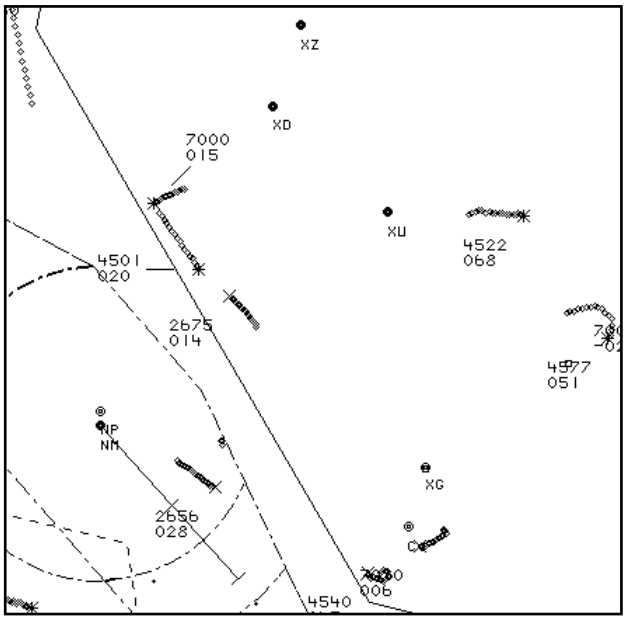

Figure 4: Incident Geometry at 1123:20.

Albeit that the TB20 indicated 1700ft for one radar sweep at 1123:34, analysis of the radar replay showed that the TB20 indicated level at 1600ft from 1123:30 until after the CPA. The Tucano pilot's response to the deconfliction advice was visible on the radar replay at 1123:39; Figures 5 and 6 show the incident geometry on the radar sweep immediately prior to the Tucano's left turn (1123:36) and the second sweep after the initial turn.

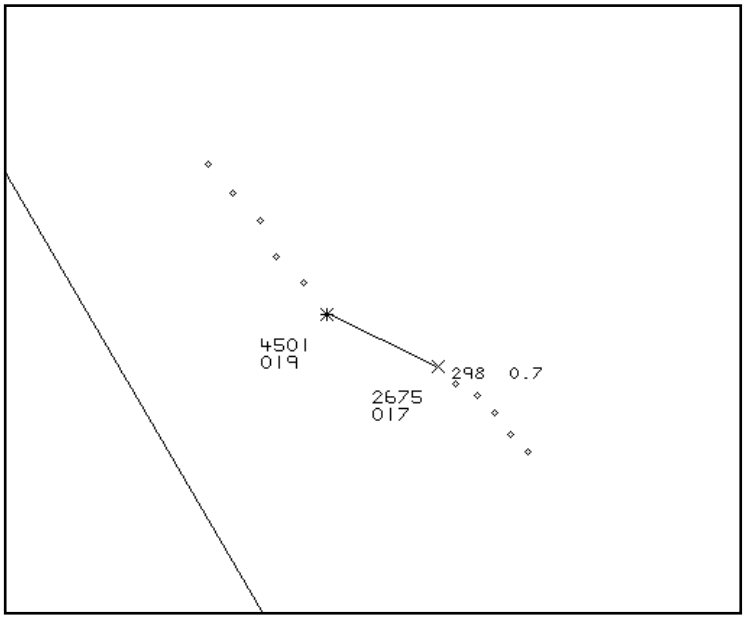

Figure 5: Incident Geometry at 1123:38.

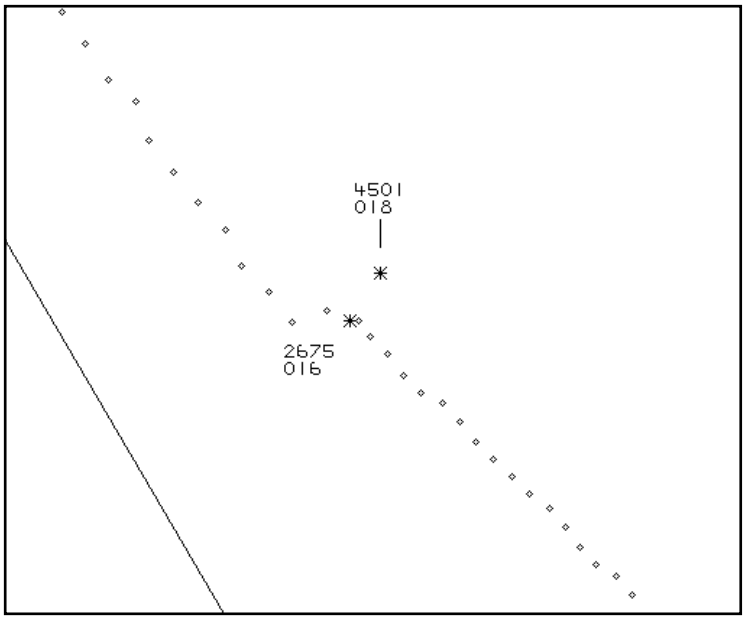

Figure 6: Incident Geometry at 1123:46.

Although some track jitter is evident, the CPA occurred between radar sweeps at approx 1123:41 as the Tucano passed about 0.3nm N of the TB20, with 400 ft vertical separation indicated. The CPA was 6.7nm NW the LIN RW03RH centreline and 4.3nm E of the boundary of the LBIA CTR.

In their Airprox report, the TB20 crew related that it 'may have been better, as we were staying outside Leeds zone, to have gone to Linton Radar...coverage of which is suggested on the portions of the map we were flying over'. UK AIP ENR 1-6-3-3-1 states that 'pilots intending to use the LARS should note the participating ATS Units close to their intended track and...when within approximately 40 nm of a participating ATS Unit, establish two-way RTF communication on the appropriate frequency'. UK AIP ENR 6-1-6-3 depicts LARS coverage in the UK and states that the relevant LARS ATS provider in that area is LIN.

Turning first to the timing of initial TI to the Tucano, although slightly late, given that the relative speeds of the ac involved were such that 54sec elapsed between this TI and the CPA, this was neither a causal nor a contributory factor in this Airprox. Whilst with hindsight the avoiding action turn to the left required the Tucano to cross the TB20's nose, given the Tucano's proximity to the LBIA CTR and the surveillance display picture presented to LIN APR at the time, LIN APR's advice was understandable. Moreover, the reduced lateral separation at the time of the Tucano pilot's request for DS placed LIN APR in a difficult situation. Although the student pilot's decision to request a DS was sound, his decision to descend into IMC in receipt of a TS, having been made aware of conflicting traffic, was less so. An earlier request for a DS, prior to entering IMC, would have permitted LIN APR to have provided deconfliction advice that would have achieved greater lateral separation than existed at the CPA. Moreover, whilst a delay in the student pilot's commencement of the avoiding action was understandable given the flight conditions and his experience level, the approximately 10sec delay, coupled with the timing of the deconfliction advice, served to drastically reduce safety margins. The conflict was resolved by the student pilot following the deconfliction advice issued by LIN APR, coupled with the 'fortuitous' levelling-off by the TB20 pilot. With regards to the timing of the pilot's request for a DS, this Airprox was similar to Airprox 2013067; a fact commented upon both by the Tucano Squadron Standardisation Officer and the Officer Commanding the Tucano Squadron and is linked to a previous recommendation from RAF FS to the CFS to review teaching of ATSOCAS to RAF aircrews.

Given the incident geometry that existed at 1122:34 and that LIN APR was aware of the TB20's presence and climb, it is reasonable to argue that the instruction to the Tucano pilot to "*descend to height 2000ft*" introduced a risk of collision. Whilst cognisant that the 'pilot is expected to discharge his collision avoidance responsibility without assistance from the controller', given the

weather in the local area and that the TB20 was continuing its climb, a more defensive controlling technique on the part of LIN APR may have reduced the severity of this Airprox.

With regards to the differences highlighted between MMATM, Chapter 11, paragraph 26; CAP 413, Chapter 5, paragraph 1.6 and CAP 493, BM SPA have requested that the MAA review the content of the MMATM to determine whether this guidance remains extant.

Comments

HQ Air Command

Air Command endorse the comments of the Military ATM investigator. The recommendation for a 22 Trg Gp review of aircrew training in ATSOCAS is still outstanding due to resource issues. It nevertheless is crucial to identify the reason for aircrews choosing to operate in IMC under a TS when a DS might be much more appropriate. The pilot had complied with the regulations, which merely require a Radar Service (TS or DS) when IMC in most circumstances. His decision to upgrade to a DS was appropriate, albeit late, and his reaction to the avoiding action was as timely as could reasonably be expected from the solo student pilot; the TB20 pilot may also have taken action by levelling off in reaction to his TI. However, the incident highlights the limitations of such a methodology as a means of providing safe separation when IMC and should serve as a lesson to all those who perceive it to be an acceptable way to operate. The UKAB recommendation to the MAA following Airprox 2013067 (to consider providing advice on the wisdom of not taking a DS in IMC) may go some way to changing attitudes. However, the 'social acceptability' of operating IMC under a TS must be challenged, particularly when under vectors and when a DS is not operationally limiting. RAF FS issued a Safety Note following Airprox 2013067 and will issue a further one following the UKAB's consideration of this event. RAF FS will also continue to work with the CAA and MAA on the content of CAPs 413 and 774 and recommends that the following paragraph is added to guidance contained in CAP774:

> 'Conflicts that materialise after an instruction has been passed will be called in accordance with the service being provided. Controllers are only required to amend instructions to achieve Deconfliction Minima where a DS is being provided.'

Summary

A Tucano and a TB20 flew into conflict at 1124 on 11th July 2013 at a position 9.4nm WSW of LIN. The incident occurred when the Tucano pilot (IMC and in receipt of a Traffic Service from LIN APR) descended towards the TB20 which was climbing on a reciprocal track (also IMC and in receipt of a Traffic Service from LBIA RAD). Under the terms of their selected ATS, both pilots were ultimately and equally responsible for collision avoidance.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, 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 considered the application of ATS. A Traffic Service had been correctly agreed with both pilots, albeit with different ATSUs. The LBIA RAD workload was considered 'moderate' and the LIN APR described his workload and task complexity as 'low'. LBIA RAD passed TI to the TB20 pilot on the Tucano in the 12 o'clock, opposite direction, at ranges of 6nm and 4.5nm. Crucially, although this latter TI was some 15sec after the Tucano pilot had been instructed to descend, the change in altitude was not yet apparent on the LBIA radar display. Hence the Tucano was described as being 'at 4000ft'. The Tucano pilot received TI on the TB20 (shortly after being instructed to descend), in his 12 o'clock at a range of 4nm, below him and climbing. ATC members, both civil and military, opined that it was apparent from the recorded LIN SUP comments that he had identified the juxtaposition of the two aircraft and was anticipating a request for a Deconfliction Service from the Tucano pilot; the

Board therefore felt that the situation could have been handled more proactively if the Supervisor had felt able to suggest a Deconfliction Service to the Tucano pilot. Members spent some time discussing the application of a Traffic Service in IMC and concluded that although CAP774 states[4]:

> 'The controller shall pass traffic information on relevant traffic, and shall update the traffic information if it continues to constitute a definite hazard, or if requested by the pilot...'

The reality was that the controllers may not always be able to do so. Indeed, the next paragraph of CAP774 states:

> 'Whether traffic information has been passed or not, a pilot is expected to discharge his collision avoidance responsibility without assistance from the controller. If after receiving traffic information, a pilot requires deconfliction advice, an upgrade to Deconfliction Service shall be requested.'

The Board opined that it was patently not possible for a pilot to discharge his collision avoidance responsibility without assistance from the controller when flying in cloud and without the aid of a collision avoidance or warning system. Additionally, even with such a collision avoidance system it was felt that many pilots (and especially inexperienced pilots) would find it challenging to fly by sole reference to instruments whilst also assimilating TI and manoeuvering correctly to avoid traffic that they assessed to be conflicting. Members therefore opined that a Deconfliction Service was a far more suitable ATS for flight in cloud.

Turning to the pilots' actions, the Board considered that the TB20 pilot had planned his transit conscientiously but that he would have been better served by contacting LIN LARS after leaving the RAF Church Fenton MATZ rather than LBIA. This would have afforded the required level of coordination between LIN traffic, and TI could have been passed to LBIA on request. There was some doubt from members as to the level of understanding of the agreed Traffic Service by the TB20 pilot. He was apparently aware of the developing conflict, albeit at a late stage, but his comment, "*"Er that's very close ma'am would you like us to stay on track or would you like me to turn left or right",* some 11sec before CPA, indicated that he may not have been fully aware of his collision avoidance responsibility under CAP774, as quoted above. Members stated that misunderstanding of the ATSOCAS regulations seemed to be a common feature of many Airprox. For his part, the Tucano pilot was operating with an agreed Traffic Service and did not request a Deconfliction Service until about 23sec before CPA. He had apparently become increasingly concerned by the developing conflict, reinforced by his TCAS information, which culminated in the last TI call and his late request for a Deconfliction Service. Members opined that he would have been better placed by requesting a Deconfliction Service before entering cloud, hence allowing the controller sufficient time and space to sequence him and achieve deconfliction. The Tucano pilot reacted to the instruction to carry out avoiding action by rapidly levelling off and entering a steep turn to the left whilst flying under IMC on instruments; although it is easy to be wise after the event, some Board members opined that this carried significant risks of its own with respect to disorientation.

When assessing the cause, members noted that the Tucano pilot had been given a vector, whereas the TB20 pilot was flying 'own navigation'. The onus therefore rested on the LIN RAD controller who, it was opined, had descended the Tucano pilot into conflict with the TB20 that was visible on his radar display. The Board also opined that both pilots were in receipt of an inappropriate ATS for their flight conditions and noted that the TB20 pilot was not in contact with LIN LARS and that these were both contributory causes. Overall, it was felt that safety margins had been much reduced below normal and a Risk Category of B was therefore awarded.

The Board also agreed a number of recommendations; firstly to examine pilot education with respect to ATSOCAS regulations and the specific benefits of a Deconfliction Service whilst operating in IMC, secondly to review the adequacy of guidance for the provision of level allocation to pilots under a Traffic Service, and thirdly to review harmonisation of military and civil RT phraseology.

[4] Chapter 3 (Traffic Service), Page 1, paragraph 5.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The Linton controller descended the Tucano pilot in to conflict with the TB20.

Contributory Factor(s): 1. Both pilots were under an inappropriate ATS for the flight conditions.
2. The TB20 pilot was not in contact with Linton LARS.

Degree of Risk: B.

ERC Score[5]: 4.

Recommendation(s): 1. The CAA reviews the education of ATSOCAS and specifically the benefits of DS in IMC, and that the MAA address this same issue through each Front Line Command.

2. The CAA and MAA review the adequacy of guidance for the provision of level allocation to pilots under a TS.

3. The MAA reviews harmonisation of MMATM and CAP413 phraseology.

[5] 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.