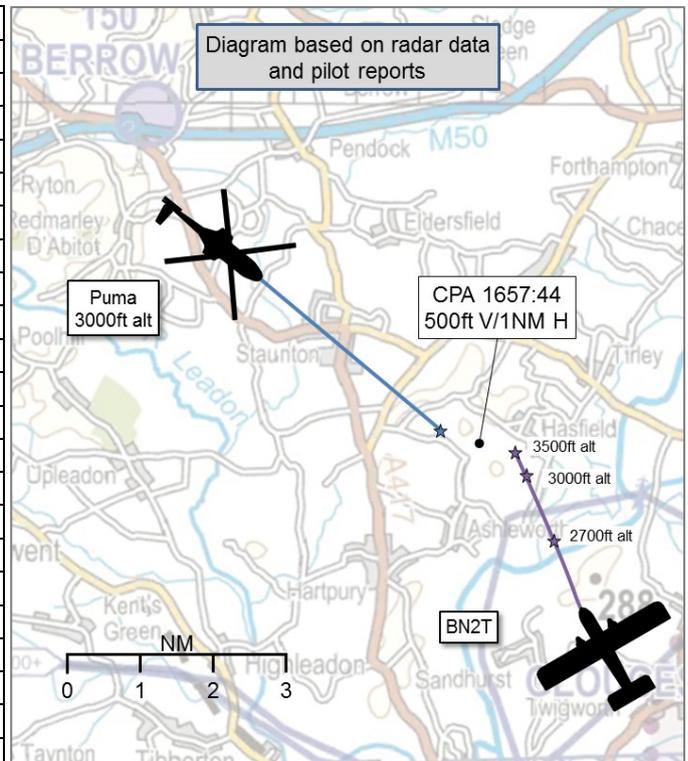


AIRPROX REPORT No 2020032

Date: 17 Mar 2020 Time: 1657Z Position: 5156N 00216W Location: 5NM NW Gloucester

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Puma	BN2T
Operator	HQ JHC	Civ Comm
Airspace	London FIR	London FIR
Class	G	G
Rules	IFR	IFR
Service	Traffic	Procedural
Provider	Brize	Gloster
Altitude/FL	3000ft	3000ft
Transponder	A, C, S	A, C
Reported		
Colours	Green	White, Red, Blue
Lighting	Nav, Landing	Anti-Col, Fin, Nav
Conditions	IMC	VMC
Visibility	Not reported	10km
Altitude/FL	3000ft	4000ft
Altimeter	NK	QNH
Heading	140°	340°
Speed	120kt	100kt
ACAS/TAS	TAS	TCAS I
Alert	TA	TA
Separation		
Reported	Not seen (IMC)	500ft V/1NM H
Recorded	500ft V/1NM H	



THE PUMA PILOT reports that they were on recovery to their base while conducting IF training. They were VMC and proceeding to a practice diversion to conduct an NDB approach, when they climbed to about 1500ft, while maintaining VMC, and called Swanwick Mil to obtain a Deconfliction Service. Swanwick Mil was unable to provide a Deconfliction Service due to their low altitude but offered a Traffic Service and instructed them to climb to 3000ft to potentially be able to provide a Deconfliction Service. They proceeded to climb IMC, happy that with a Traffic Service they would have SA on other IMC aircraft and hopefully gain a Deconfliction Service upon reaching 3000ft. Upon levelling off at 3000ft, Swanwick Mil informed them that they were still unable to provide a Deconfliction Service and handed them to Brize Radar. After contacting Brize they were informed that they still could not get a Deconfliction Service but did not know what the reason was. Shortly thereafter Brize Radar informed them that there was traffic about '2 miles in their 12 o'clock, opposite direction, climbing from 1500ft to 4000ft' and they were asked to 'call visual'. They responded that they were not visual due to being IMC. Brize then informed them that the 'Traffic was now 1NM opposite direction'. At the same time the Puma's TAS declared traffic 12 o'clock, same altitude. At this point they took evasive action, broke right 90° and descended. The TAS showed the traffic passing down the left-hand side of the aircraft. The distance was not noted due to the high task load at the time. After the event, they were handed to Gloucester Approach and the flight was uneventful thereafter.

The pilot assessed the risk of collision as 'Medium'.

THE BN2T PILOT reports they were departing from Gloucester RW27 with a Procedural Service in VMC. As they recalled, the departure instructions were to turn right onto a heading of about 340° and climb to 4000ft before turning right on track to Brize Norton for a PD. As they climbed through about 2000ft they saw the Puma in their 12 o'clock on a reciprocal heading. Shortly after that Gloster Approach informed them of traffic in their 12 o'clock. They could also see the Puma on their TCAS I and they received a TA, but they were visual and could plainly see that they would pass below and to the west

of the Puma. They didn't see any need to report the event and heard nothing on the radio that would suggest that there was cause for concern.

The pilot assessed the risk of collision as 'None'.

THE BRIZE NORTON CONTROLLER reports that the Puma pilot made no mention on frequency at the time that an Airprox would be raised, at no point did the pilot state that they were taking avoiding action or evasive action due to a TAS alert, this is why the controllers response comes 15 days afterwards. Swanwick (Mil) prenoted the Puma, a VHF LARS transit, northwest of Brize Norton by 45 miles, squawking 6401. The Brize controller was unable to identify the aircraft as it was below the base of Brize's radar coverage. For this reason, the Brize controller opted to give Swanwick (Mil) a Brize Zone squawk of 3702 as the aircraft would require a transit of the Brize CTR on route to their base. The Brize controller then asked the Swanwick (Mil) controller what service the Puma pilot was under and was told that the Puma was under a Traffic Service (TS), the Puma pilot had requested a Deconfliction Service (DS) but was too low at 3000ft, Cotswold QNH 1019. The radio coverage to the NW of Brize is a known area of poor signal and the Brize controller was cautious that the Puma pilot would potentially call while still below radar coverage, therefore Brize asked Swanwick (Mil) to inform the pilot it would be a TS at 3000ft and, when within 30NM, freecall Brize Zone. The Brize controller had previously controlled a similar callsign Puma, transiting through Brize CAS on a Basic Service inbound to the same base and expected a similar flight profile. The Brize controller became aware of the Puma's position when squawk 3702 appeared on radar west of Gloucester and the Brize controller proceeded to ring Gloster to provide Traffic Information (TI) because traffic from Gloucester was on radar that would affect the Puma. When the Puma pilot called Brize Zone the aircraft was identified and given a TS, while the Brize controller was subsequently providing TI to Gloster, The Puma pilot transmitted that they wanted an ILS RW27 inbound to Gloucester. Gloster provided TI on a procedural outbound squawking 4504, northwest bound climbing 4000ft. The Brize controller immediately told Gloster to standby and called the traffic to the Puma pilot as "[Puma C/S] traffic 12 o'clock, 2 miles opposite direction indication 1000ft below climbing to 4000ft". The Puma pilot responded, 'not sighted err with request' (this part of the transmission was broken). Gloster then said that they were turning their traffic, and the Brize controller proceeded to call the traffic again "[Puma C/S] traffic now 12 o'clock, 1-mile opposite direction indicating 400ft below 200ft below climbing", followed by asking the Puma pilot to report visual with the "traffic left 11 o'clock, 1 mile passing down your left-hand side indicating 100ft above". The Puma pilot stated, "is IMC not sighted". When the contacts had passed, and the mode C indicated the Gloster aircraft was 1100ft above. Gloster then gave a requested level and pressure setting for the Puma. These instructions were passed to the Puma pilot who was then informed to continue with Gloster.

The controller perceived the severity of the incident as 'Low'.

THE BRIZE NORTON ATCO I/C reports that the reporting controller held the RA endorsement of the two of them on shift but was upstairs in ADC at the time of the incident and was unaware of it until the DASOR was filed.

THE GLOSTER CONTROLLER reports working TWR and APP combined. The BN2T pilot was given departure instructions to fly 315° from RW27 climbing to 4000ft to coincide with the RNAV deemed separation; conflicting IFR traffic was inside 8NM from REKLO cleared for the RNAV approach RW27 descending through the BN2T's cleared level. The Gloster controller's intention was to wait for level separation before turning the BN2T on track to the OX climbing to 6000ft. After the BN2T was airborne, Brize Radar called with TI, which prompted the Gloster controller to look at the radar display, over the controller's shoulder, and saw what was believed to be the traffic Brize had called; 2 Pumas [UKAB note: there was only 1 Puma] northwest to southeast at 3000ft tracking towards the Gloucester overhead. The Gloster controller passed TI to the BN2T pilot on the Pumas that, as they recalled, were turning to avoid. They could not recall whether the BN2T pilot had the Pumas in sight at any point. They waited for separation of the Brize controllers IFR aircraft before turning the BN2T to the OX climbing to 6000ft. They did not deem it appropriate to issue any instruction to turn the BN2T away from the conflicting traffic because Brize, being a radar unit, are more suitably qualified. As they recalled, both Brize and Gloster controllers' workloads were fairly high at this point.

Factual Background

The weather at Gloucestershire was recorded as follows:

METAR EGBJ 171650Z 21010KT 9999 5000SE -RADZ FEW007 SCT012 BKN030 12/11 Q1024

Analysis and Investigation

Gloucester Airport Investigation Report

An initial investigation was conducted to identify if the ATCOs actions or ATC equipment had contributed to the Airprox. It was deemed that this was not the case therefore a more thorough investigation was conducted at a later date due to the Covid-19 pandemic. At 1652:12 the ATC clearance was issued to the BN2T pilot. At 1654:00 the BN2T became airborne. At 1656:14 Brize Radar called with TI on the Puma. Due to a busy controller workload at Brize Radar, this call took two minutes for the information to be passed during which the Gloucester controller passed TI to the BN2T pilot, established his level, passing 3200ft, and asked if the pilot had an RA. The reply was negative, but the Pumas were on TCAS. The call concluded with the intention that the Gloucester controller was going to turn his traffic to OX, climbing to 6000ft.

Further investigation by Gloucester SATCO

Unfortunately, there were no radar recordings available at the time of investigation, however the R/T recordings and telephone conversations were, which enabled the SATCO to conduct a fairly thorough investigation. Although the radar was serviceable and can be used for TI if the ATCO deems a risk of collision exists, Radar services are still not able to be provided at Gloucestershire Airport therefore only a Basic or Procedural Service is available. The Puma was working Brize Radar, the type of service was unknown however it appeared from listening to the recordings it was a Traffic Service. The BN2T was working Gloucester Approach in receipt of a Procedural Service. Neither pilot reported an Airprox at the time on the R/T, this of course can't be verified for the Puma as they were on the Brize frequency however Brize did not phone to advise that they had the intention to do so either. The ATCO checked to see if the BN2T had had any sort of TCAS warning on the Puma, to which the pilot replied 'no, but they had been visible on TCAS'. Unfortunately, nearly a month had elapsed when the ATSA received a phone call, believed to be one of the Puma pilots, requesting information on the other aircraft for this date. The ATSA informed the ATCO and contacted the SATCO for advice. SATCO asked the ATCO to submit a report via Gloucestershire Airport's internal reporting system so there was a record of it. However, it was well outside of the MOR reporting timeframe therefore an MOR was not submitted. The BN2T pilot was given a right turn to track 315° and climb to 4000ft, RW27RH. This is a fairly common clearance when another aircraft is conducting an RNAV approach to RW27 as it is part of the deemed separation. As the BN2T pilot required to eventually depart east to Oxford this is a standard procedural clearance. The BN2T pilot was subsequently cleared for take-off. The ATCO was unaware of the Puma at this point. About 2 mins later the Brize controller called to pass TI on "a Puma" 8NM northwest of Gloucestershire Airport at 3000ft routing towards the Gloucestershire Airport overhead. Unfortunately, this call took a fair amount of time as the Brize controller sounded quite busy passing TI. The APP ATCO passed TI to Brize on the BN2T and the BN2T pilot's intentions, then once the ATCO had the TI from Brize it was passed to the BN2T pilot. The ATCO also then followed it up with radar derived information with the correct phraseology IAW Mats Pt 2. Once the BN2T was separated from another aircraft conducting an RNAV approach the BN2T pilot was instructed to resume his own navigation to Oxford and climb to 6000ft. Based on the ATCOs qualifications and the type of service provided, in this instance, there was not much more that could have been done to avoid the situation developing. In the debrief the controller advised the SATCO that perhaps the BN2T could have potentially been turned the away from the traffic, however there was no way the ATCO could prove that the traffic seen on the ATM was the traffic that was working Brize. Also, headings and de-confliction advice to avoid "unknown" traffic should only be given if the aircraft was in receipt of a Deconfliction Service which Gloucestershire ATC do not have the capacity to provide. The controller felt that as the Puma was in receipt of a radar service from Brize, they would be in a

much better position to pass deconfliction advice, and the ATCO didn't want to inadvertently make the situation worse by turning the aircraft closer towards each other or doing something contrary to that which the Brize ATCO may have been expecting. The SATCO agreed with these points and concluded that the alleged Airprox occurred as TI was passed too late, although the SATCO does not believe that this was anyone's fault in particular. It would have been a lot more helpful if Gloucestershire had known about the Puma a lot earlier as both ATCOs may have been able to co-ordinate more effectively and resolve the situation in a timely manner, e.g. co-ordinating climbing the Puma to 4000ft and stopping the BN2T at 3000ft or for Brize to transfer control of the Puma to Gloucestershire ATC or vice versa. The SATCO did not know the workload of the Brize ATCO, but the controller did sound busy on the recordings which may have been a factor. From Gloucester's side of things, they discussed if the BN2T's climb could have been stopped at a lower altitude but unfortunately the BN2T was already passing 3000ft (pilot report, no SSR) and also anything lower than 2800ft would have been below the published MSA for that sector. This only really left the option to turn the BN2T away from the traffic which is not advisable due to the BN2T pilot being provided with a Procedural Service, the ATCOs qualifications and both aircraft not being identified on radar. As mentioned earlier a turn may have made the situation worse.

MATS 2 reference:

2.4 Occasionally, ATCOs may consider a risk of collision exists when an aircraft is being provided with a Basic or Procedural Service, whether or not radar identity has been established. Whilst ATCOs may consider it appropriate to pass traffic information, it is essential that no doubt exists as to the type of service being provided. In such circumstances, pilots are to be advised that they are "not identified" or "not under a radar service" and that any information is "believed to be..." If a pilot requests avoidance advice, this should be taken as a request for a Deconfliction Service.

CAA ATSI

An Airprox was reported by the pilot of the Puma with the BN2T, whilst the Puma was in transit towards Gloucestershire Airport, with the intention of completing an instrument approach there. The BN2T was on an IFR departure from Gloucestershire Airport, intending to route to Oxford for an instrument approach. The BN2T first became visible on the area radar replay at 1655:00, and at 1655:28 a Procedural Service was agreed with the Gloucestershire controller who was operating as both Tower and Approach controller (Figure 1).

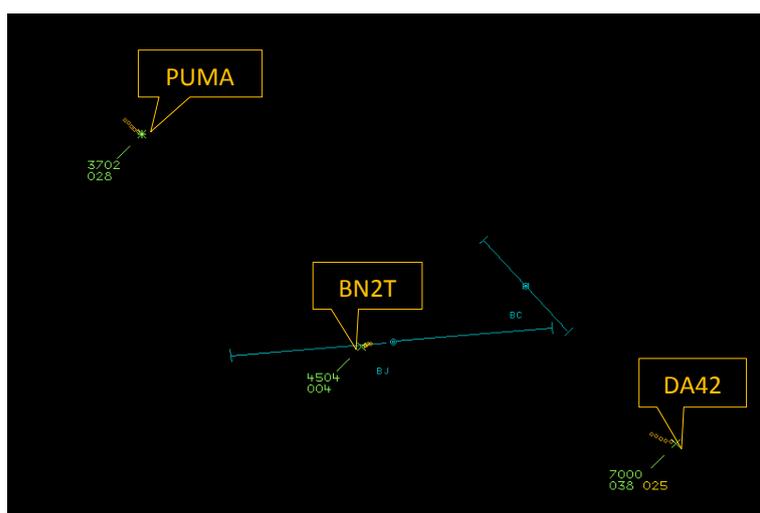


Figure 1 – 1655:28 - indicated levels are FL – add 270ft for altitude

The BN2T pilot had been issued with a departure clearance to turn right after departure, to track 315°, and to climb to an altitude of 4000ft. The controller also had a DA42 already airborne conducting an RNAV approach, and a further aircraft completing a landing.

At 1656:18 the Gloucestershire controller took a telephone call from the Brize Radar controller who passed Traffic Information to them on the Puma: “northwest of yourselves, 10 miles, tracking through your overhead at 3000ft” (Figure 2).

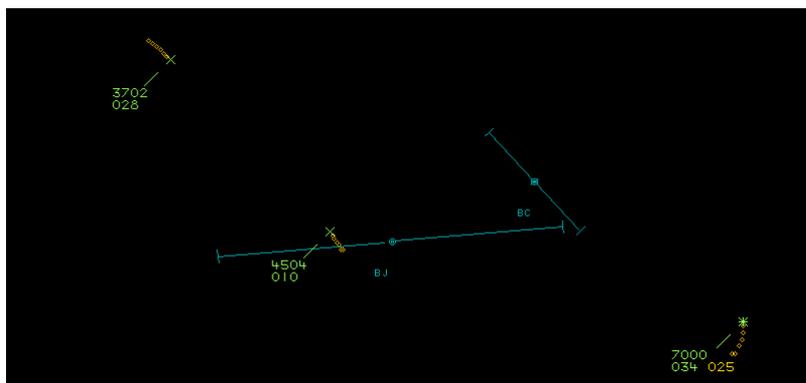


Figure 2: 1656:18 aircraft 7.3NM apart

At 1656:43 the Brize Radar controller advised the Gloucestershire controller that the Puma was in fact inbound to Gloucestershire. The Gloucestershire controller asked for the level of the Puma again. The Gloucestershire controller then passed Traffic Information to the Brize Radar controller “OK I’ve got traffic squawking 4504, (Brize Radar controller reports “contact”), northwest of me northwest-bound, climbing to altitude 4000ft”. The Brize controller told the Gloucestershire controller to “standby” and was then heard to pass Traffic Information to the Puma: “traffic 12 o’clock 2 miles opposite direction, indicating 1000ft below, climbing to altitude 4000ft”.

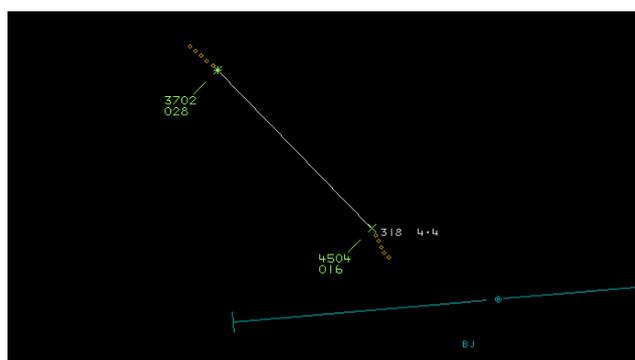


Figure 3: 1657:00

Whilst the Brize Radar controller was passing Traffic Information, at 1657:05 the Gloucestershire controller called the BN2T: “you’re not under a radar service but I believe you have traffic left 11 o’clock, 3 miles, opposite direction, altitude 3000ft – a Puma working Brize”. The Brize Radar controller then informed the Gloucestershire controller that they had “called traffic to the Puma”. The Gloucestershire controller stated that they had also passed TI to the BN2T. The Gloucestershire controller started to inform the Brize radar controller that “I’m turning, I’m going to turn that 4504”, but the Brize controller was updating the Traffic Information to the Puma pilot: “traffic now 12 o’clock, 1 mile opposite direction, indicating 400ft below 200ft below, climbing” (Figure 4).

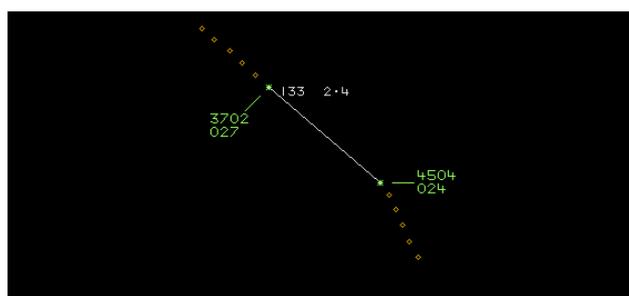


Figure 4: 1657:32

Again, the Gloucestershire controller attempted to inform the Brize Radar controller that they were turning the BN2T, but the Brize Radar controller informed them that the Puma was not visual with the traffic and then immediately following that, at 1657:40, passed further traffic information to the Puma pilot: *“now left 11 o’clock 1 mile passing down your left-hand side indicating 100ft above”* (Figure 5).

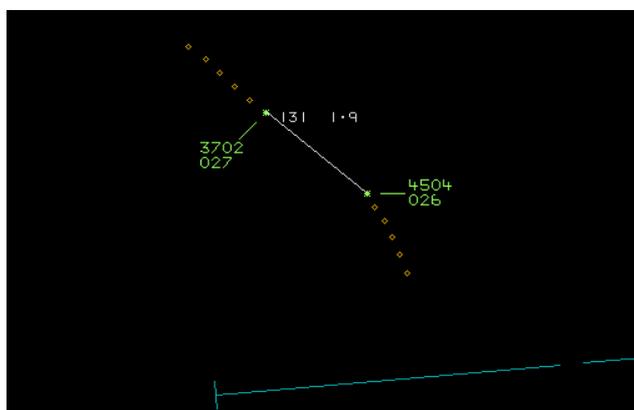


Figure 5: 1657:40

At 1657:45 the Gloucestershire controller asked the BN2T to report their level, *“passing 3200ft”* after which the Brize Radar controller reported *“my guy has turned south and they have passed”*.

CPA occurred at 1657:50 with the aircraft separated by 1.3NM and 600ft (Figure 6).

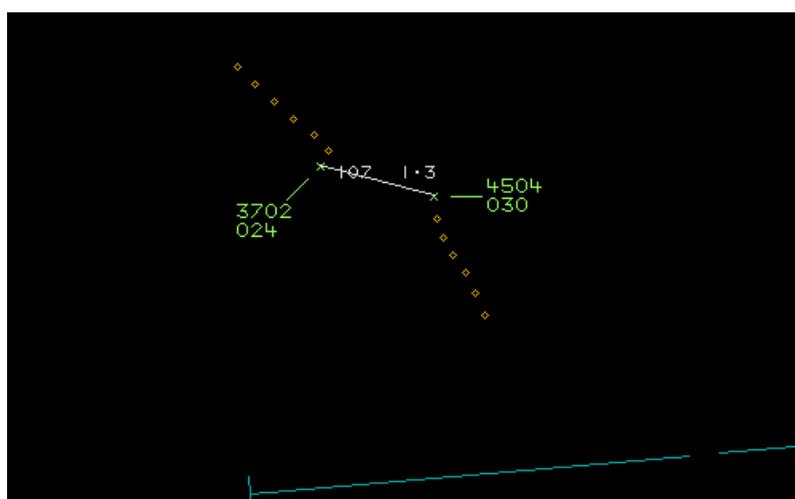


Figure 6: 1657:50

There appears to have been a delay of about 2 weeks before this Airprox was reported by the Puma pilot. This together with the impact of Covid-19 meant that the Gloucestershire controller’s report was retrospective, and there was a considerable delay before Gloucestershire ATC were able to complete an investigation report.

The clearance issued to the BN2T pilot by the Gloucestershire controller was to provide separation against the other aircraft working them, the DA42, which was completing an RNAV approach at Gloucestershire. Gloucestershire has a primary radar, but it is not authorised for use for the provision of Traffic or Deconfliction services. However, there is an exception on its use listed in the unit MATS Part 2.

The Gloucestershire controller was not aware of the presence of the Puma until the phone call from the Brize Radar controller.

Traffic information was passed in a timely manner by both controllers. There was no requirement for either controller to pass Deconfliction Advice to their aircraft on the other.

The Gloucestershire controller was only required to achieve deconfliction minima against *“other aircraft participating in the Procedural Service. Neither traffic information nor deconfliction advice can be passed with respect to unknown traffic”*. (CAP774 Chapter 5 Para 5.1).

Pilots are subsequently warned that *“due to the autonomous flight in Class G airspace, pilots in receipt of a Procedural Service should be aware of the high likelihood of encountering conflicting traffic without warnings being provided by ATC”*.

ATSI noted that the BN2T got airborne wearing the discrete SSR code allocated for use by Oxford. Although it had no impact on the event, the Brize Radar controller, and in fact any other controller providing a radar-surveillance based service, would be within their rights to assume the aircraft's SSR code had been verified and validated which was not the case. Also, had the BN2T been further from Gloucestershire, the Brize Radar controller seeing the Oxford SSR code, might have tried to contact Oxford instead.

Military ATM

The Puma was routing from Shobden to Benson via Gloucester for a practice diversion. The Puma freecalled Swanwick (Mil) requesting a Deconfliction Service which Swanwick were unable to provide due to the altitude of the Puma, although a Traffic Service was agreed. Shortly after handover to Brize the Puma pilot reported receiving a TAS warning on the BN2T resulting in an avoiding turn to remain clear.

The BN2T had departed Gloucester climbing to 4000ft and the pilot was passed Traffic Information on the Puma and received a TCAS TA as well. The BN2T pilot reported being visual with the Puma throughout, was content with the separation between the aircraft and did not believe an Airprox had occurred.

The Puma pilot initially freecalled Swanwick (Mil) at an altitude of 2200ft but shortly afterward requested a climb to 3000ft. Both of these altitudes were below the Sector Safe Altitude used by Swanwick (Mil) and thus they were only able to provide a Traffic Service. Unbeknownst to Swanwick (Mil) the climb to 3000ft requested by the Puma pilot placed them in IMC. During the prenote procedure to Brize, Swanwick reiterated that the Puma required a Deconfliction Service but, due to the aircraft's altitude, Brize were also only able to offer a Traffic Service. Prior to handover, Swanwick (Mil) passed Traffic Information to the Puma pilot about the BN2T which at that point was about 2600ft below the Puma.

Figures 7-11 show the positions of the Puma and the BN2T at relevant times in the lead up to and during the Airprox. The screen shots are taken from a replay using the NATS Radars, which are not utilised by Brize therefore are not representative of the picture available to the controller. Additionally, there was a disparity of about 23 seconds between the radar replay timings and those of the RT transcripts.

Having prenoted the Puma to Brize, the Swanwick (Mil) Controller passed Traffic Information to the Puma pilot who reported not being visual but did not mention being IMC. At this point, the BN2T was indicating 400ft. Having passed this Traffic Information, the Puma pilot was transferred to Brize Approach.

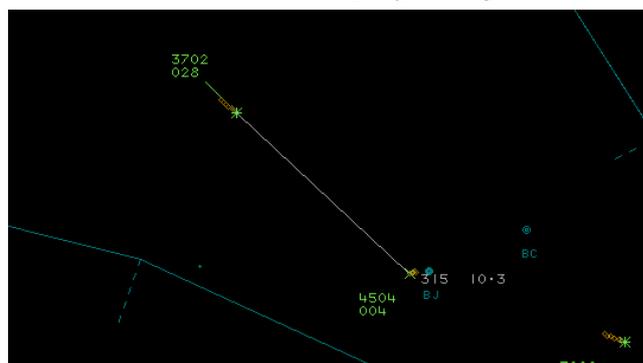


Figure 7: Traffic Information passed by Swanwick

Having received a prenote on the Puma, the Brize Controller, who was unaware of the intended practice diversion at this time, correctly identified that the aircraft would fly close to Gloucester and began liaising with Gloucester about the transit. During this period, the Puma contacted Brize, articulated the intent to make an approach at Gloucester and was passed Traffic Information by the Brize Approach Controller on the BN2T. This range information passed was not accurate, the controller stated 2NM when it was actually 4.6NM, although Brize were operating SSR only at the time of the incident which may account for the disparity.



Figure 8: First Traffic Information from Brize

Brize passed Traffic Information to the Puma pilot for a second time following further discussion with Gloucester. Again, the range on this Traffic Information was not accurate, the controller stated 1NM when it was actually 2.4NM.



Figure 9: Second Traffic Information from Brize

Traffic Information was passed for a third and final time by Brize shortly afterward. This traffic information was accurate, and it was at this point that the Puma pilot reported being IMC. Separation at this point was 1.4NM.

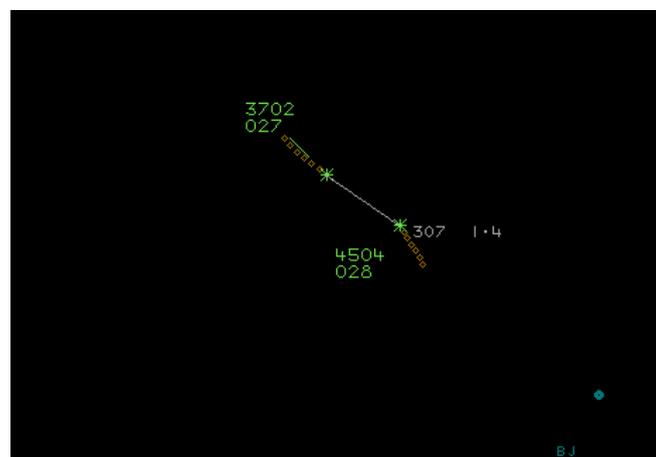


Figure 10: Final Traffic Information from Brize

CPA occurred 10 seconds after this final piece of Traffic Information and was measured at 1NM and 500ft.

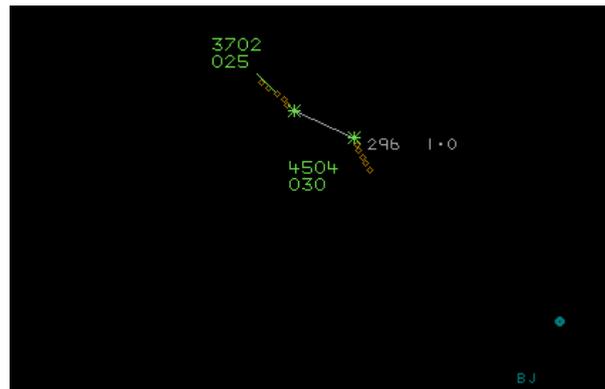


Figure 11: CPA

Two different control agencies passed Traffic Information to the Puma pilot four times about the BN2T the final piece occurring about 10 seconds prior to CPA. Given these facts, the controllers involved discharged their duties in accordance with CAP774 correctly.

UKAB Secretariat

The Puma and BN2T 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

Comments

BN2T Operating Company

The Company recognises this type of hazard and has evaluated the risks when operating at regional airports and within Class G airspace. This has been reported as routine departure in reasonable conditions. The Company continues to monitor this type of operation and apply appropriate training and mitigation to keep risk to a minimum.

JHC

This airprox occurred during an Instrument Flying (IF) training sortie during a practice diversion into Gloucester. There is disparity in this report between the narrative of the Puma pilot and the evidence from the tape transcript as to why a climb into IMC was initiated. Having spoken to the co-pilot it is confirmed that, as per the tape transcript, the climb to 3000ft was initiated by the crew and this was a deliberate climb into IMC in order to gain 'actual' IF conditions. For context, JHC aircrew are mandated to fly a minimum of 1 hour actual IF in a 6-month period, with the remainder of the currency requirement permitted under simulated conditions.

A discussion with both the pilot and co-pilot has provided further context to the events leading to this Airprox. As the situation was unfolding there was a degree of task focus in the cockpit towards the impending diversion, meaning the Traffic Information provided was not acted upon until it had escalated and a TAS warning issued. The Aircraft Commander surmised that although he had acknowledged the Traffic Service, it is possible that whilst focusing on other tasks, had lapsed into thinking he was under a Deconfliction Service and as such was expecting more direction from the controller.

Whilst more effort could have been made by ATC at Swanwick and BZN to attempt to provide the service originally requested (for example by offering a suitable climb to the Terrain Safe Level / Area Safety Altitude) the co-pilot proffered that in hindsight they should have been more persistent in their

¹ SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.

² SERA.3210 Right-of-way (c)(1) Approaching head-on. MAA RA 2307 paragraph 13.

request for a Deconfliction Service instead of accepting a sub-optimal service for the flight conditions they were in.

Summary

An Airprox was reported when a Puma and a BN2T flew into proximity 5NM northwest of Gloucester at 1657Z on Tuesday 17th March 2020. The Puma pilot was operating under IFR in IMC and in receipt of a Traffic Service from Brize Norton, the BN2T pilot was operating under IFR in VMC and in receipt of a Procedural Service from Gloster Approach.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate operating authorities. Relevant contributory factors mentioned during the Board's discussions are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

Due to the exceptional circumstances presented by the coronavirus pandemic, this incident was assessed as part of a 'virtual' UK Airprox Board meeting where members provided dial-in/VTC comments. Although not all Board members were present for the entirety of the meeting and, as a result, the usual wide-ranging discussions involving all Board members were more limited, sufficient engagement was achieved to enable a formal assessment to be agreed along with the following associated comments.

The Board began by discussing the actions of the controllers. The Puma was operating below the Terrain Safety Level (TSL) for the Swanwick controller to provide a Deconfliction Service (DS), he did though agree a Traffic Service (TS) with the Puma pilot (**CF2**). The R/T recordings disclosed that it was the Puma pilot who had requested a climb to 3000ft, rather than an instruction by the Swanwick controller. The Swanwick controller pre-noted the Brize controller and stated that the Puma was receiving a TS but had requested a DS. When the Puma pilot called Brize the controller placed the Puma pilot on a TS and contacted Gloster to pass TI. Although the Brize controller passed TI about the BN2T to the Puma pilot it was unfortunate that the range information was inaccurate, this gave the Puma pilot the impression that the BN2T was closer than it actually was (**CF3**), Brize was operating with secondary radar only and the Mil ATM member opined that this may have been a factor that resulted in the inaccurate TI (**CF1**). Members agreed that the Puma pilot could have made a more informed tactical decision for his transit altitude if the Brize controller had provided additional information regarding the level at which the Puma pilot would have been able to receive a DS, conversely it would have been prudent for the Puma pilot to have informed the Brize controller that he was flying in IMC earlier than he did.

Turning to the Gloster controller members agreed that the controller passed sufficient TI to the BN2T pilot and, without the use of a fully certified radar, had relied upon the Brize controller, with a certified radar and a greater visual appreciation of the proximity of the aircraft, to ensure the aircraft remained separated.

Next, the Board discussed the actions of the BN2T pilot. The BN2T pilot reported visual with the Puma and had received a TCAS I TA (**CF10**), when the Gloster controller asked if the pilot had received an RA the reply was just a TA, the pilot reported visual with the Puma and was not concerned with the separation. When the Puma pilot started to turn away from the BN2T the aircraft were separated by about 1.5NM and the BN2T was climbing through the level of the Puma.

The Puma pilot had planned to climb into IMC and had requested a DS, unfortunately the level the pilot climbed to was below the TSL for both the Swanwick and Brize controllers. Although the pilot did not know what the TSL for either agency was the Board thought that when the pilot was transferred to Brize they should have reinforced their requirement for a DS or, at least, enquired as to when they could expect to receive a DS (**CF6**). This is especially relevant whilst flying in IMC under a TS where TI is passed but the controller's workload may reduce the controller's ability to pass it in a timely manner,

under a TS the pilot is responsible for collision avoidance. Even though the Puma pilot had requested a DS, they were actually flying in IMC with a TS; the Board agreed that this was not the most appropriate service and they should have adapted their plan to account for the additional risks involved (CF4). The Board noted that the Puma pilot had not informed the Brize controller of their intention to carry out a Practice Diversion to Gloucester, they opined that, if the controller had known this fact, they may have been able to communicate with Gloster earlier which could have allowed both controllers to agree a means of separating the aircraft in a more timely and comprehensive fashion.(CF5). When Brize passed the Puma pilot the TI, regardless of the inaccurate reporting, they were informed it was 2NM and members wondered why the pilot did not request further information or request an upgrade to a DS and inform the controller that they were IMC at this point (CF7). The puma crew did not react to the TI (CF10), nor did they visually acquire the traffic (CF11), it was only when the Puma crew received a TAS TA that they initiated a right turn to avoid it (CF9). The military helicopter member said that the crew were busy at this point and this may have affected their response time and assimilation of the TI they received from the Brize controller (CF8).

Turning to the Risk, The Board were mindful that the BN2T pilot was visual with the Puma. Whilst the Puma pilot had TI and a TAS TA on the BN2T and turned away when the BN2T was climbing through the Puma's level and about 1.5NM away. Therefore, the Board agreed that there was no risk of collision a Risk category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2020032			
CF	Factor	Description	Amplification
Ground Elements			
• Manning and Equipment			
1	Technical	• Aerodrome and ATM Equipment	Non-functional or unavailable equipment
• Situational Awareness and Action			
2	Contextual	• ANS Flight Information Provision	Controller not able to provide requested ATS
3	Human Factors	• ANS Traffic Information Provision	TI not provided, inaccurate, inadequate, or late
Flight Elements			
• Tactical Planning and Execution			
4	Human Factors	• Insufficient Decision/Plan	Inadequate plan adaption
5	Human Factors	• Accuracy of Communication	Ineffective communication of intentions
6	Human Factors	• Communications by Flight Crew with ANS	Appropriate ATS not requested by pilot
• Situational Awareness of the Conflicting Aircraft and Action			
7	Human Factors	• Lack of Communication	Pilot did not request additional information
8	Human Factors	• Distraction - Job Related	Pilot engaged in other tasks
9	Human Factors	• Situational Awareness and Sensory Events	Pilot was concerned by the proximity of the other aircraft
• Electronic Warning System Operation and Compliance			
10	Contextual	• ACAS/TCAS TA	
• See and Avoid			
11	Human Factors	• Monitoring of Other Aircraft	Non-sighting or effectively a non-sighting by one or both pilots

Degree of Risk: C.

Safety Barrier Assessment³

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Ground Elements:

³ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

Situational Awareness of the Confliction and Action were assessed as **partially effective** because the Brize controller was aware of the Puma pilots request for a Deconfliction Service but did not endeavour to provide the requested service. Additionally, the Traffic Information passed to the Puma pilot was inaccurate.

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the Puma pilot did not restate their request for a Deconfliction Service from the Brize controller when operating in IMC.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the Puma pilot did not act sufficiently on the Traffic Information provided by the Brize controller until they received a TAS alert.

