

**AIRPROX REPORT No 2022241**

Date: 25 Sep 2022 Time: 1738Z Position: 5153N 00154W Location: 10NM E Gloucester

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	TB20	AS355
Operator	Civ FW	Civ Comm
Airspace	London FIR	London FIR
Class	G	G
Rules	IFR	VFR
Service	Procedural	Basic
Provider	Gloster Approach	Brize Zone
Altitude/FL	FL024	FL027
Transponder	A, C, S+	A, C, S
<b>Reported</b>		
Colours	White, blue	Black
Lighting	Strobes, nav	Anti-col, nav
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2500ft	3000ft
Altimeter	QNH (1016hPa)	QNH (NK hPa)
Heading	350°	100°
Speed	130kt	120kt
ACAS/TAS	PilotAware	TAS
Alert	Information	Information
<b>Separation at CPA</b>		
Reported	200ft V/2NM H	500ft V/1NM H
Recorded	300ft V/1.4NM H	



**THE GLOUCESTER CONTROLLER** reports that, at approximately 1741, [the pilot of the TB20] had turned at REKLO descending with the RNP procedure when previously called unknown traffic was observed to come into conflict. The [pilot of the TB20] informed them they had [seen] the aircraft's ADS-B Out [signal] on SkyDemon but were not visual with the conflicting track so elected to break off the approach and continue for a visual approach (which they were cleared for).

The Gloucester controller found the conflicting aircraft to be displaying a 3701 squawk on ADS-B Exchange, which is that of Brize. They passed, and obtained, Traffic Information and Brize seemed aware of the possibility of confliction. [The pilot of the TB20] then continued with the RNP and landed without further incident.

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

**THE TB20 PILOT** reports that they had departed [departure airfield] on an IFR flight plan and had been in VMC at the time of the Airprox. [The pilot described their use of two additional EC devices, one with ADS-B-in connected to SkyDemon running on an iPad, and one with ADS-B-out capability, in addition to the transponder fitted to their aircraft.]

At 13NM south of Gloucester, they contacted Gloster Approach on 128.555MHz to request an RNP approach to RW27 via the IAF REKLO. Gloucester ATC issued them with a Procedural Service and [an instruction to] route directly to REKLO. [Their EC equipment] was showing traffic tracking in a similar direction, at a similar altitude, at a similar speed but behind them by 3.5NM. At 6NM southwest of REKLO, Gloucester ATC advised them of [different] traffic tracking towards the instrument approach. At that point, the traffic was not displayed on their EC equipment. [The TB20 pilot has subsequently identified that traffic as being the AS355 helicopter involved in this Airprox].

Given their distance from the [AS355] and the good VMC conditions, they continued with the approach as sufficient spacing and time existed to visually acquire the traffic. They briefed their passenger as to the location of the traffic and they also kept a good lookout. Whilst their passenger is not a pilot, they are an experienced passenger and accustomed to looking for traffic. At REKLO, they turned north towards the Intermediate Fix, NIRMO. At 3NM south of NIRMO, their [EC equipment] acquired the [AS355], showing it to be within 100ft of their altitude, at a range of 4NM in the 11 o'clock position, tracking towards NIRMO. Moments later, ATC provided [the pilot of the TB20] with a traffic update. [The pilot of the TB20] and their passenger were continuing to look for the [AS355] but were still unable to visually acquire it. Given the converging tracks, they advised ATC that they would break off the approach, turn west in order to maintain separation, and continue on a visual approach. During the left turn to the west they acquired the [AS355] visually, at a similar height and estimated it to be within 2NM. The [AS355] did not alter height or course, and the TB20 pilot opined that it would not have been necessary, given their own decision to have taken early avoiding action. However, if they had continued to follow the RNP approach then the tracks of the two aircraft may have converged sufficiently at NIRMO to have posed a risk.

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

**THE AS355 PILOT** reports that they can remember the flight but not the Airprox.

**THE BRIZE NORTON CONTROLLER** reports that the Airprox was not reported on frequency. Due to light workload they were band-boxed in RA/Dir/Zone and [had been working] one pilot under a Basic Service and one pilot under a Traffic Service on Zone. [The pilot of the AS355] was tracking ESE, approximately 8NM east of Gloucestershire Airport under a Basic Service with [unrelated traffic] leaving the BZN CTR to the east of RAF Fairford. They had observed a 7000 squawk, [the TB20], approximately 3NM southeast of [the AS355], indicating 200ft below on Mode C and tracking northwest, slow moving. They had decided that there was no immediate risk of collision at that time. [Whilst the controller was attending to unrelated traffic], they observed the 7000 squawk take a slightly more westerly heading, still approximately 2NM south and 200ft below on Mode C. They then received a call from the Gloucester controller asking if they were working [the AS355], which they confirmed. [The Gloucester controller] then said they had just given [the pilot of the TB20] avoiding action to avoid it. [The Gloucester controller] asked if they could see [the TB20] traffic, [now] to the west of [the AS355]. [The Brize controller] said that they saw the aircraft 2NM west and indicating 300ft below on Mode C.

As the aircraft had been wearing a 7000 squawk, they were unaware that this may be working Gloucester and flying a procedure. Had [the TB20] been wearing an IFR squawk (2000), they may have assumed it was working Gloucester and passed Traffic Information. At no time did [the pilot of the AS355] report an Airprox and they continued to cross the Brize CTR after having received a VFR crossing clearance. No further incident occurred before [the AS355] left the zone and continued en-route.

**THE BRIZE NORTON SUPERVISOR** reports that they had been sitting next to the controller at the time of the incident and was informed by them immediately of the phone call from Gloucester. [The AS355] was under a Basic Service and was not in the immediate vicinity of Gloucester. The Brize controller's decision to assume the 7000 squawking aircraft was not on a procedural approach to Gloucester is one that they completely agree with. It was Class G airspace and there are usually many 7000 squawks in that area which, once identified as non-threatening to aircraft that Brize are working, can be ignored.

## Factual Background

The weather at Brize Norton was recorded as follows:

EGVN 251750Z 25005KT 9999 FEW040 BKN140 14/06 Q1015 NOSIG

## Analysis and Investigation

### Gloucestershire Airport

Recordings were audited and traffic levels were assessed as low. TWR/APP frequencies were combined. QNH was 1016hPa. RW27 was in use and the wind was 270/5. The timeline of events was as follows:

1730 [The pilot of the TB20, in receipt of] information Foxtrot, 17NM to the south, requested an RNAV approach via REKLO. Their altitude was requested by the controller and was given as 3500ft. A Procedural Service was provided and the pilot was cleared for the RNP approach via REKLO to report at REKLO.

1735 [From the controller to the pilot of the TB20]: "*Traffic observed on radar 3NM north of the racecourse, SE bound, no height information, should cross the final track at 8 miles*". [The pilot of the TB20] acknowledged.

1737 [The pilot of the TB20] reported at REKLO and was told to report NIRMO. The controller informed the pilot that the previously mentioned track was now at 11 o'clock, 3NM, no height information, to cross final approach track at 9NM. The pilot responded they were not visual but had it on [their EC device]. Also, that they might break off the approach, head west, and then request a visual approach and a Basic Service. The controller cleared the aircraft for a visual approach as required and the pilot reported heading 270° due to the traffic.

1738 [The pilot of the TB20] requested to resume the RNP approach and was given permission.

1738 Telephone conversation between the Gloucester controller and Brize Norton controller: The Gloucester controller discussed the incident with the Brize controller. The other aircraft was a helicopter under a Basic Service, 200ft below. The Gloucester controller couldn't see the conflicting traffic until the last minute. Conspicuity codes were mentioned as a future mitigation solution.

1739 [The pilot of the TB20] reported at NIRMO to report at the FAF.

1742 [The pilot of the TB20] (at the FAF) was cleared to land.

1747 [The pilot of the TB20] reported, after being asked, if they would be filling any paperwork. The pilot said 'no' as they had been in good VMC and had seen the conflicting traffic and had had enough time to take avoiding action if required.

1754 Telephone conversation between the Gloucester controller and [the pilot of the TB20]: [The pilot of the TB20] stated that they would file paperwork regarding the incident. The pilot did not see the conflicting traffic until the traffic was passed by the controller and was in VMC.

The Airprox report was sent to Brize Norton for their comment. No pilot reports seen.

### Brize Norton Unit

The Brize Norton Unit liaised with Gloucester Airport Safety Team, discussed with the reporter and checked the tapes and radar replay. A transcript of the conversation between the Brize Norton Zone controller and the Gloucester controller was supplied to the UKAB Secretariat.

### CAA ATSI

[The pilot of the TB20] had been on a Procedural Service. Gloucestershire Airport has a primary-only radar used for SRAs and has an ATM for situational awareness. Traffic Information was passed to [the pilot of the TB20] on the proximity of [the AS355].

[With reference to CAP774], the controller shall provide Traffic Information, if it is considered that a confliction may exist, on aircraft being provided with a Basic Service and those where traffic information has been passed by another ATS unit; however, there is no requirement for deconfliction advice to be passed, and the pilot is wholly responsible for collision avoidance.

The controller may, subject to workload, also provide Traffic Information on other aircraft participating in the Procedural Service, in order to improve the pilot's situational awareness.

Under a Procedural Service, the controller has no ability to pass Traffic Information on any aircraft that they are not in communication with, unless they have been passed Traffic Information by another ATS unit.

Traffic Information provided under a Procedural Service is unlikely to be as accurate as that provided by controllers using surveillance equipment. Therefore, pilots should be alert to the potential to incorrectly correlate the Traffic Information to other aircraft that they have in sight that are actually unknown to the controller.

Traffic Information was passed based on what the controller saw on the ATM.

### **Military ATM**

The Brize Norton Approach controller was band-boxed in Approach, Director and Zone with a Basic Service [being provided to the pilot of the AS355] on the Zone frequency. The AS355 pilot was transiting east to southeast approximately 8NM east of Gloucestershire Airport.

A 7000 squawk, [the TB20], was observed 3NM southeast of the AS355 indicating 200ft below, tracking northwest, and it was deemed that there had been no immediate risk of collision. The 7000 squawk was observed to track west, with separation now 2NM and 200ft, shortly followed by a phone call from the Gloucester controller requesting Traffic Information on the AS355 and informing the Brize Norton controller of the requirement to take avoiding action against the AS355.

As the pilot of the AS355 was under a Basic Service, the Brize Norton Approach controller deemed there was no immediate risk of collision against the TB20. Whilst diverting attention to their other traffic, which was in receipt of a higher level of service, their scan was maintained throughout and the Brize Norton Approach controller observed the change in direction from the TB20, confirming no risk of collision.

The Brize Norton Approach controller stated that, had the TB20 been wearing a recognised Gloucester squawk, then Traffic Information could have been provided to the Gloucester controller of the AS355 transit.

### **UKAB Secretariat**

An analysis of the NATS radar replay was undertaken and both aircraft could be positively identified from Mode S data (see Figure 1). The diagram was constructed and the CPA determined from the radar data.

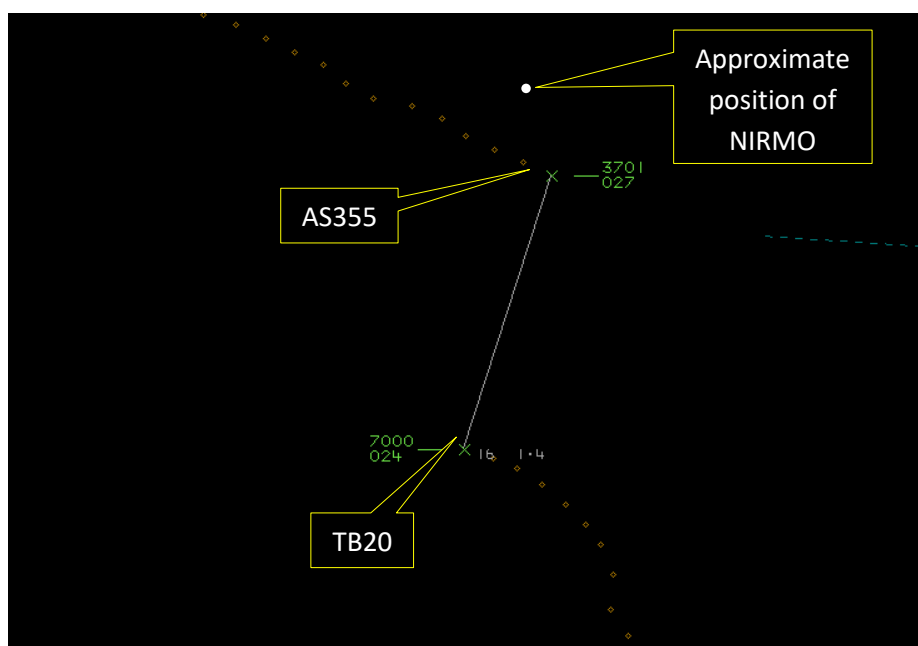


Figure 1 – CPA at 1738:23

The TB20 and AS355 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.<sup>1</sup> If the incident geometry is considered as converging then the AS355 pilot was required to give way to the TB20.<sup>2</sup>

## Summary

An Airprox was reported when a TB20 and an AS355 flew into proximity 10NM east of Gloucestershire Airport at 1738Z on Sunday 25<sup>th</sup> September 2022. The TB20 pilot had been operating under IFR in VMC and in receipt of a Procedural Service from Gloster Approach. The AS355 pilot had been operating under VFR in VMC and in receipt of a Basic Service from Brize Zone.

## **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.

The Board first discussed the actions of the pilot of the TB20 and members applauded the usage of additional EC equipment and the general conduct of the flight. With members indicating that they had no further comments to add to their discussion, they turned their attention to the actions of the pilot of the AS355. Members noted that the route of the AS355 had taken the pilot well within 10NM of Gloucestershire Airport. The Gloster Approach controller had not known of the presence of the AS355 until moments before the CPA, and members wished to remind all pilots that they are strongly recommended to contact the relevant ATSU before passing within 10NM of an aerodrome which has an Instrument Approach Procedure and marked on navigational charts with instrument approach 'feathers'. Some members with particular knowledge of that location, added that the area is well known to be busy and that the RNP approach is particularly active. It was suggested that it may have been prudent to have called Gloster Approach with details of their intended route for the benefit of the controller's situational awareness and for other pilots in the vicinity.

The Board next considered the actions of the Gloster Approach controller. Members noted that there had been a telephone conversation between the Gloster Approach controller and the Brize Norton controller after the pilot of the TB20 had terminated their RNP approach. There had been a suggestion

<sup>1</sup> (UK) SERA.3205 Proximity.

<sup>2</sup> (UK) SERA.3210 Right-of-way (c)(2) Converging.

during that telephone call that situational awareness and co-ordination between the Gloster Approach controller and Brize Norton controller could have been enhanced if there had been a specific conspicuity squawk with which pilots could be issued when operating under a service from Gloucestershire Airport. Members recalled the circumstances around Airprox 2019257 which had many similarities with this case, and where members had made a Safety Recommendation. Members were in full agreement that their previous recommendation, which had been rejected by Gloucestershire Airport, should be re-issued for consideration. Therefore, the Board resolved to recommend that 'Gloucestershire Airport consider applying for an SSR transponder conspicuity code'.

Turning their attention to the actions of the Brize Norton controller, members noted that they had been providing a Basic Service to the pilot of the AS355. It was suggested that the TB20 had been 'outside the bubble' of the requirement to pass Traffic Information on the TB20 to the pilot of the AS355 and members agreed. Members discussed that the Brize Norton controller had suggested the use of a '2000 squawk' for conspicuity and recalled that 2000 is listed as being in use for aircraft arriving from a non-SSR environment such as crossing an FIR boundary. Members agreed that a specific squawk for Gloucestershire Airport conspicuity, per their recommendation, would likely be most appropriate.

Concluding their deliberations, the Board was satisfied that the separation between the aircraft and the actions of the pilot of the TB20 had been sufficient to ensure that there had been no risk of collision. Members agreed that, largely due to the actions of the TB20 pilot, normal safety standards had pertained throughout and, as such, the Board assigned a Risk Category E. Members agreed that the following factors (detailed in Part C) had contributed to this Airprox:

- CF1.** The Gloster Approach controller had been concerned by the proximity of the TB20 and AS355.
- CF2.** The Gloster Approach controller had initially had generic situational awareness of the presence of the AS355.
- CF3.** The pilot of the A109 had not contacted the Gloster Approach controller to communicate their intentions having passed within 10NM of Gloucestershire Airport that has an Instrument Approach Procedure and is marked on navigational charts with instrument approach 'feathers'.
- CF4.** Both pilots reported receiving 'Traffic Information' alerts from their EC equipment on the presence of the other.

## **PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**

### Contributory Factors:

2022241				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
<b>Ground Elements</b>				
<b>• Situational Awareness and Action</b>				
1	Human Factors	• Expectation/ Assumption	Events involving an individual or a crew/ team acting on the basis of expectation or assumptions of a situation that is different from the reality	Concerned by the proximity of the aircraft
2	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, no or inaccurate Situational Awareness
<b>Flight Elements</b>				
<b>• Tactical Planning and Execution</b>				
3	Human Factors	• Communications by Flight Crew with ANS	An event related to the communications between the flight crew and the air navigation service.	Pilot did not request appropriate ATS service or communicate with appropriate provider

• Electronic Warning System Operation and Compliance			
4	Contextual	• Other warning system operation	An event involving a genuine warning from an airborne system other than TCAS.

Degree of Risk: E

Recommendation: Gloucestershire Airport consider applying for an SSR transponder conspicuity code.

### Safety Barrier Assessment<sup>3</sup>

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

### **Flight Elements:**

**Tactical Planning and Execution** was assessed as **partially effective** because the pilot of the A109 had not contacted the Gloster Approach controller to communicate their intentions.

Airprox Barrier Assessment: 2022241		Outside Controlled Airspace		Effectiveness				
Barrier		Provision	Application	Barrier Weighting				
				0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance	✓	✓	[Green bar to 5%]				
	Manning & Equipment	✓	✓	[Green bar to 2.5%]				
	Situational Awareness of the Confiction & Action	!	✓	[Green bar to 15%]				
	Electronic Warning System Operation and Compliance	○	○	[Grey bar to 0%]				
Flight Element	Regulations, Processes, Procedures and Compliance	✓	✓	[Green bar to 10%]				
	Tactical Planning and Execution	✓	!	[Yellow bar to 10%]				
	Situational Awareness of the Conflicting Aircraft & Action	✓	✓	[Green bar to 20%]				
	Electronic Warning System Operation and Compliance	✓	✓	[Green bar to 15%]				
	See & Avoid	✓	✓	[Green bar to 20%]				
<b>Key:</b>		Full	Partial	None	Not Present/Not Assessable	Not Used		
Provision	✓	!	✗	○				
Application	✓	!	✗	○	○			
Effectiveness	Green	Yellow	Red	Grey	Red box			

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