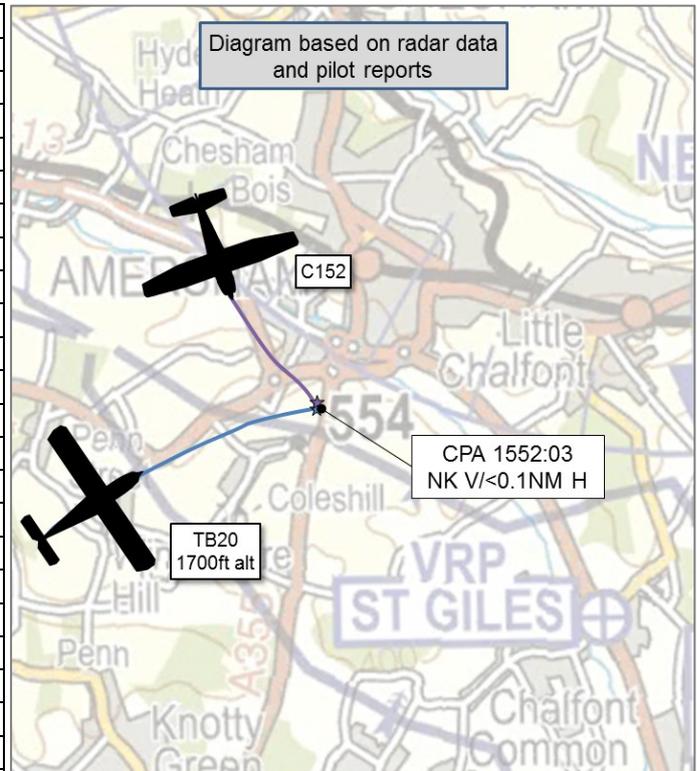


AIRPROX REPORT No 2019335

Date: 30 Dec 2019 Time: 1552Z Position: 5139N 00037W Location: 1NM SW Amersham

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	TB20	C152
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Unknown ¹
Provider	Farnborough	Unknown
Altitude/FL	1700ft	NK
Transponder	A, C, S	A ²
Reported		
Colours	Red, White	White, Red, Blue
Lighting	Landing, Beacon	Strobe, Beacon
Conditions	VMC	VMC
Visibility	8km	8km
Altitude/FL	1800ft	2200ft
Altimeter	QNH (1028hPa)	QNH (1028hPa)
Heading	050°	Southerly
Speed	120kt	95kt
ACAS/TAS	PilotAware	Not fitted
Alert	None	N/A
Separation		
Reported	200ft V/200m H	Not seen
Recorded	NK V/<0.1NM H	



THE TB20 PILOT reports that they were routing to Denham via a point on the Thames between Henley and Marlow, he was approaching Amersham and the handling pilot was carrying out the airfield approach checks. The Farnborough Radar controller advised them of another aircraft which the pilot saw. He considered the other aircraft to be very close, he took control and immediately pitched the aircraft nose down. He was not sure how close they actually came. He handed control back at about the same time that the Farnborough controller advised them to Squawk 7000 and contact Denham, which the handing pilot did without hesitation.

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

THE C152 PILOT reports that he did not see the other aircraft.

THE FARNBOROUGH CONTROLLER reports that the TB20 did not declare an Airprox at the time of the incident, therefore they had no recollection of the event. Having reviewed the radar replay, he was working the TB20 when, prior to transferring control to the next agency, he saw conflicting traffic to the left of the TB20, he passed Traffic Information as "[TB20 C/S] traffic on your left", there was no altitude displaying on the conflicting traffic and he believed it would be more beneficial for the pilot to quickly look towards the traffic to try to visually acquire the potentially conflicting aircraft. The TB20 pilot reported visual and shortly afterwards was transferred to the next agency with that traffic in sight.

Factual Background

The weather at Heathrow was recorded as follows:

¹ The C152 pilot reported being in receipt of a Basic Service from Farnborough, however, there was no evidence of this.

² The C152 pilot reported operating with Mode C but this was not visible on the radar replay.

METAR COR EGLL 301550Z AUTO 22007KT 9999 NCD 10/07 Q1028 NOSIG

Analysis and Investigation

Farnborough ATC

The TB20 was being worked by Farnborough LARS West on a Basic Service, en-route to Denham. The frequency was quiet with one other aircraft receiving a service, and the workload was low. As the TB20 pilot routed to the North East of Booker Airfield, a 7000 squawk (later identified as the C152) was seen to route on a conflicting track, but with no mode C to indicate what level it was at.

The controller noticed the confliction and transmitted to the TB20 pilot at 1551:49 "[TB20 c/s] Traffic on your left". At 1552:00 the TB20 pilot replied "[TB20 c/s] Visual with traffic".



Figure 1: CPA occurred at 1552:04³

The TB20 pilot then requested to leave the frequency, which was approved by the Farnborough Controller.

The TB20 pilot did not report an Airprox on the frequency, so Farnborough were only notified of the Airprox retrospectively. Due to this fact, the controller could only remember a few details of the event. The Controller recalled that they saw a 7000 squawk routing towards the TB20, but as the 7000 had no altitude readout, the Controller did not know its altitude. When it became obvious that the 7000 (C152) was coming into confliction laterally with the TB20, the Controller called generic Traffic Information to the TB20 pilot.

Due to the relative positions of the aircraft at the time the Traffic Information was passed the controller only gave basic information as they wanted to make sure that the pilot was looking in the correct direction for the traffic. Also, the C152 was not displaying any altitude read-out, so there was no altitude that could be passed to the TB20 pilot. The TB20 pilot reported visual with the C152 so the Traffic Information was not updated by the Controller.

The TB20 pilot was operating under VFR in class G (uncontrolled airspace) in receipt of a Basic Service from Farnborough LARS West and was solely responsible for visually maintaining their own separation from other traffic without assistance from ATC.

CAP774 - Definition

2.1 A Basic Service is an ATS provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights. This may include weather information, changes of serviceability of

³ This screenshot is from the Farnborough radar but is not indicative of the display that the Farnborough controller would see due to the STCA not being available on the controller's screen.

facilities, conditions at aerodromes, general airspace activity information, and any other information likely to affect safety. The avoidance of other traffic is solely the pilot's responsibility.

Basic Service relies on the pilot avoiding other traffic, unaided by controllers/ FISOs. It is essential that a pilot receiving this ATS remains alert to the fact that, unlike a Traffic Service and a Deconfliction Service, the provider of a Basic Service is not required to monitor the flight.

2.7 A controller with access to surveillance-derived information shall avoid the routine provision of traffic information on specific aircraft but may use that information to provide a more detailed warning to the pilot.

2.8 If a controller/ FISO considers that a definite risk of collision exists, a warning shall be issued to the pilot (SERA.9005(b)(2) and GM1 SERA.9005(b)(2)).

2.9 Whether traffic information has been provided or not, the pilot remains responsible for collision avoidance without assistance from the controller.

Although not required to continuously monitor the aircraft under a Basic Service, the controller did observe the potential confliction with the C152 and passed generic Traffic Information to which the TB20 plot responded that they were visual with the C152.

CAA ATSI

The TB20 pilot was in receipt of a Basic Service from the Farnborough LARS West controller at the time of the Airprox. The C152 also reported that they were in receipt of a Basic Service from Farnborough Radar, however ATSI was unable to confirm this.

The screenshots below are taken from the Area Radar replay and illustrate how the event unfolded.

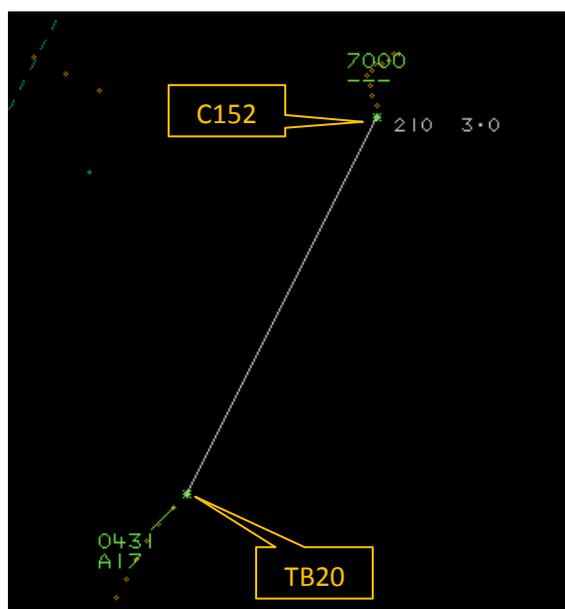


Figure 2: 15:51.00

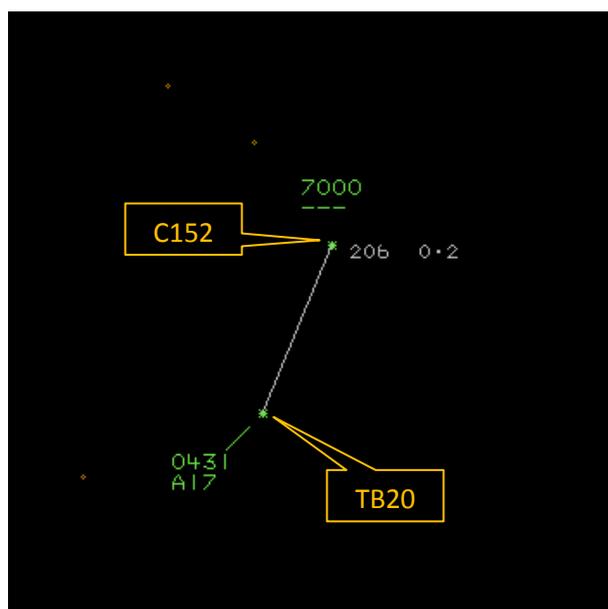


Figure 3: 15:52.00

At 15:52.00 the Farnborough LARS West controller passed the following warning to the TB20 pilot: “[TB20 c/s] traffic on your left”. The pilot responded: “[TB20 c/s] visual with traffic”. The controller responded with “[TB20 c/s] with that traffic in sight squawk 7000 and freecall Denham Radio”.

CPA occurred at 1552:03 (Figure 4) with the radar indicating 0.0NM lateral separation. The reported vertical separation being 500ft, the vertical separation has been assessed from the C152 pilot reporting that they were at altitude 2200ft at the time.

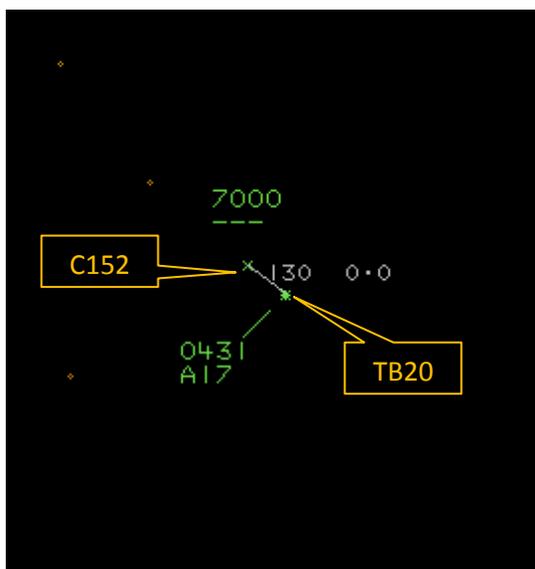


Figure 4: 15:52.03 CPA

The Airprox took place in Class G airspace with the TB20 pilot receiving a Basic Service from the Farnborough LARS West controller and the C152 being unknown traffic to the controller. The TB20 aircraft was geographically within the LARS North area, however it should be noted that if an aircraft is intending to land at Denham or Elstree and is leaving the LARS West area of responsibility (having tracked round to the west of the London CTR to the west of White Waltham), standard practice is for the LARS West controller to advise the LARS North controller of the traffic, and unless the pilot is in receipt of a Traffic Service, LARS West would normally keep the aircraft, to avoid an additional frequency change having to take place while the aircraft are in such close proximity to those airfields.

Under the terms of a Basic Service controllers are not required to monitor the flight. The Farnborough LARS West controller recognised that a conflict existed between the TB20 and the unknown C152 and issued the pilot of the TB20 with a warning that enabled the TB20 pilot to sight the C152 and take evasive action.

UKAB Secretariat

The TB20 and C152 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.⁴ If the incident geometry is considered as converging then the C152 pilot was required to give way to the TB20.⁵

Summary

An Airprox was reported when a TB20 and a C152 flew into proximity 1NM southwest of Amersham at 1552hrs on Monday 30th December 2019. Both pilots were operating under VFR in VMC, the TB20 pilot in receipt of a Basic Service from Farnborough; it is not known whether the C152 pilot was in receipt of a FIS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings and reports from the air traffic controller involved. 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

⁴ SERA.3205 Proximity.

⁵ SERA.3210 Right-of-way (c)(2) Converging.

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 looking at the actions of the TB20 pilot. The GA members noted that the TB20 instructor had been working quite hard, conducting a check on the handling pilot (**CF5**), and that this had likely resulted in him spending more time looking into the cockpit than would normally be the case. The TB20 instructor also reported that, even though the visibility was 8km, it was hazy which had affected lookout. However, he still continued his scan outside the cockpit and saw the C152 at about the same time that he received Traffic Information from the Farnborough controller. When he saw the C152 in close proximity (**CF8**) he quickly turned to increase the separation between the aircraft. Unfortunately, the C152 was transponding Mode A only and therefore the TB20's PilotAware did not alert the TB20 pilot to the proximity of the C152 (**CF6**). Some members felt that the TB20 pilot may have been better served, with a heavier workload, by requesting a Traffic Service to ensure he had information on conflicting aircraft as early as possible (**CF2**).

The Board then turned to the actions of the C152 pilot. It was unfortunate that he had not seen the TB20 (**CF7**) and could not add anything further. The C152's non-functioning Mode C had resulted in the TB20's PilotAware not providing relevant information to the TB20 pilot, Board members thought that this was an important lesson to check the serviceability of equipment prior to flight or as soon after departure as possible. Although the C152 pilot thought he was receiving a service from Farnborough there was no evidence, through radar and R/T recordings, that this was the case; if he had been receiving a service from Farnborough this may have enhanced the Situational Awareness of both the TB20 pilot and the controller and may have helped to prevent the loss of separation (**CF2, 3 & 4**).

The Farnborough controller did not have to monitor the TB20 under a basic Service (**CF1**) and it was fortuitous that he saw the confliction developing and passed Traffic Information as soon as possible. Some members thought that the controller should have detected the conflict earlier due to the controller's low workload, other members replied that the controller may have been carrying out other tasks, e.g. telephone communications with other controllers, and may not have been monitoring the TB20 because the pilot had requested a Basic Service. Regardless, even though the controller was not required to monitor the TB20, as soon as he saw the confliction he passed generic Traffic Information in time for the pilot to take emergency avoiding action therefore members agreed that he had fulfilled his duties under a Basic Service, indeed he had provided sufficient information to the TB20 pilot that allowed the pilot to take avoiding action to increase the separation between the aircraft.

Turning to the risk, members quickly agreed that the TB20 pilot had carried out emergency avoiding action as soon as he had seen the C152 which had increased the separation between the aircraft, but that reported separation was such that safety had not been assured, a Risk Category B.

PART C: ASSESSMENT OF CONTRIBUTORY FACTOR(S) AND RISK**Contributory Factor(s):**

2019335			
CF	Factor	Description	Amplification
Ground Elements			
• Situational Awareness and Action			
1	Contextual	• Situational Awareness and Sensory Events	Not required to monitor the aircraft under the agreed service
Flight Elements			
• Tactical Planning and Execution			
2	Human Factors	• Communications by Flight Crew with ANS	Apt ATS not requested by pilot
3	Human Factors	• Communications by Flight Crew with ANS	Pilot did not communicate with appropriate service provider
• Situational Awareness of the Conflicting Aircraft and Action			
4	Contextual	• Situational Awareness and Sensory Events	Generic, late, no or incorrect Situational Awareness
5	Human Factors	• Distraction - Job Related	Pilot was engaged in other tasks
• Electronic Warning System Operation and Compliance			
6	Technical	• ACAS/TCAS System Failure	Incompatible CWS equipment
• See and Avoid			
7	Human Factors	• Monitoring of Other Aircraft	Non-sighting or effectively a non-sighting by one or both pilots
8	Human Factors	• Monitoring of Other Aircraft	Late-sighting by one or both pilots

Degree of Risk: B.

Safety Barrier Assessment⁶

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

Ground Elements:

Situational Awareness and Action were assessed as **fully effective** because the Farnborough controller was not required to monitor the TB20 on a Basic Service or pass Traffic Information unless he recognised a definite risk of collision.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the TB20 pilot received Traffic Information, albeit probably later than if he had been under a Traffic Service.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the TB20's PilotAware could not detect the C152 who's mode C was not transponding.

⁶ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

See and Avoid were assessed as **partially effective** because the C152 pilot did not see the TB20 and the TB20 pilot saw the C152 later than desirable.

