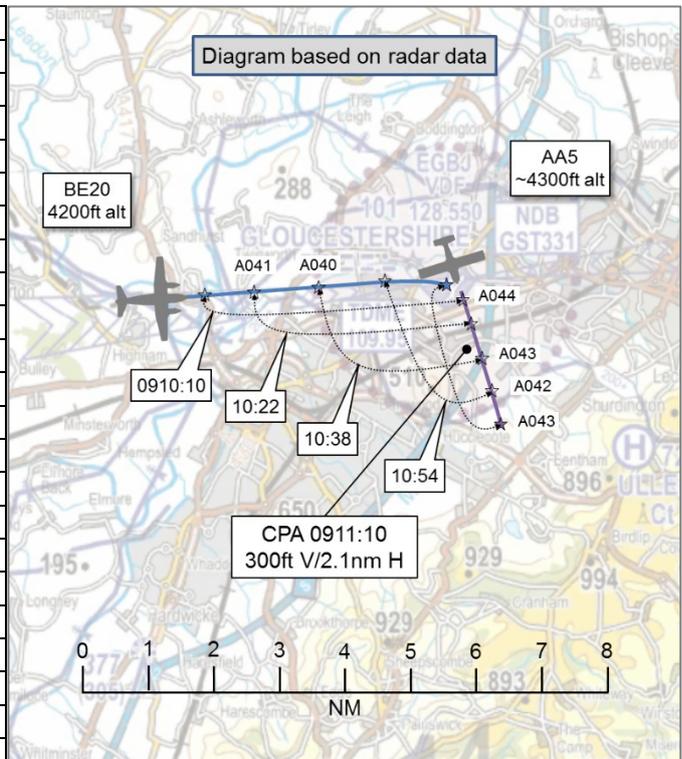


AIRPROX REPORT No 2019252

Date: 21 Aug 2019 Time: 0911Z Position: 5153N 00209W Location: Gloucestershire Airport

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	BE20	AA5
Operator	Civ Comm	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	IFR	VFR
Service	Procedural	Basic
Provider	Gloster Approach	Gloster Approach
Altitude/FL	FL040	FL038
Transponder	A, C, S	A, C
Reported		
Colours	White/black/red	White/green/purple
Lighting		
Conditions	VMC	VMC
Visibility	10km	
Altitude/FL	4000ft	4400ft
Altimeter	QNH (1026hPa)	QNH (1026hPa)
Heading	091°	159°
Speed	150kt	120kt
ACAS/TAS	TCAS II	Not fitted
Alert	TA	N/A
Separation		
Reported	0ft V/2nm H	NR
Recorded	300ft V/2.1nm H ¹	



THE BE20 PILOT reports that he was initially cleared to the Gloucestershire hold at 7000ft due to instrument traffic at 6000ft. Once that traffic was no longer a factor, he departed the hold for the ILS procedure to RW27 and was cleared to descend in the hold to 4000ft. A light-aircraft was cleared to transit the overhead at 1800ft and the crew had just established on the inbound leg of the hold at 4000ft when they heard ATC request the transiting traffic to confirm its position. The pilot of the aircraft replied he was just passing overhead at 4000ft and so the controller queried the pilot as to why he wasn't at 1800ft. The pilot replied that he had climbed to stay clear of cloud, so the controller then passed Traffic Information to the BE20 pilot about the transiting aircraft. The crew identified what they believed to be the aircraft in question on the TCAS at approximately 12 o'clock at the same level. The crew was then able to visually acquire the aircraft, which was flying north-to-south, and evaluated that their current track would take them behind that aircraft.

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

THE AA5 PILOT reports that he was not aware of the Airprox until an email was received from NATS [UKAB note: the email was sent by the Radar Analysis Cell collocated at NATS Swanwick]. He states that he was flying from Sleaf to Kemble in VMC, but cannot recall the exact weather conditions because he had made this flight on several occasions during the last month. He initially received a Basic Service from Shawbury Zone and then contacted Gloster Approach for a Basic Service and was given permission to pass through their overhead, reporting overhead or on change of level. He then reported changing to Kemble Information. The pilot states that, for him, the flight was uneventful, and that he is interested to know the nature of the Airprox so that he can be more mindful of this in the future.

The pilot did not make an assessment of the risk of collision.

¹ The CPA measured by NATS ATSI at 09:11.00 was 200ft V/2.2nm H; 2 radar sweeps later the aircraft are slightly closer.

Factual Background

The weather at Gloucestershire Airport was recorded as follows:

METAR EGBJ 210850Z 22005KT 170V260 9999 SCT016 17/14 Q1026=
 METAR EGBJ 210920Z 23006KT 180V260 9999 SCT016 18/14 Q1026=

Analysis and Investigation

CAA ATSI

The Gloucester controller was providing combined Aerodrome and Approach non-Radar Services at the time of the Airprox. The R/T was busy, and the controller was dealing with Instrument Approaches, departures, arrival and overflights. Screenshots in this report have been taken from the Area Radar recordings and the Mode C displayed are Flight Levels. The QNH data entered into the Radar Display was 1028, resulting in a difference of 405 feet.

At **09:01.10**, the BE20 pilot reported at 7000ft routeing direct to the GST, with 14 miles to run and in receipt of information Foxtrot, QNH 1026. The controller instructed the pilot to standby.

At **09:01.20**, the AA5 pilot made initial contact with the Gloucester controller and was instructed to standby and advised that a controller handover was taking place.

At **09:03.10**, the BE20 pilot was instructed to report entering the hold and to expect descent when established in the hold. The pilot was advised that there would probably be a 5 min delay, hopefully resulting in just one hold.

At **09:04.20**, the controller turned their attention back to the AA5 pilot and the pilot advised, *“one POB, from Sleaf to Kemble, currently 1800 feet on 1026, 10 miles to run, would like to transit your overhead.”* The controller instructed the pilot to report in the overhead and a Basic Service was agreed. The pilot responded with Wilco (Figure 1).

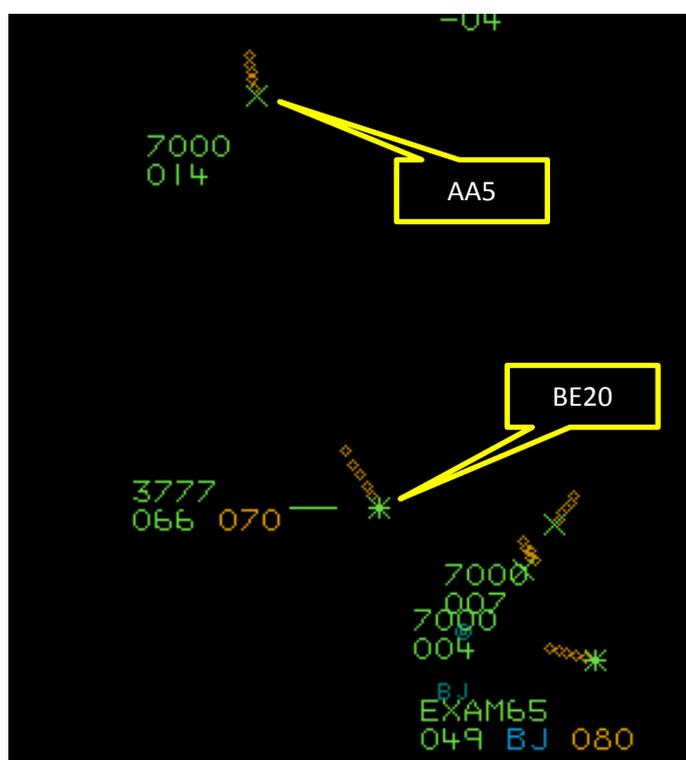


Figure 1 – 09:04.20

At **09:05:40**, the BE20 pilot reported taking up the hold at 7000ft. This was acknowledged by the controller.

At **09:06:40**, the controller instructed the BE20 pilot to descend to altitude 4000ft QNH 1026. The pilot provided an accurate readback.

At **09:07:40**, the controller instructed the BE20 pilot to maintain altitude 4000ft and cleared them for the ILS/DME approach RW27, to report at the GST outbound. The pilot provided an accurate readback (Figure 2). Note: The 4000ft restriction was against another aircraft on the Instrument Approach.

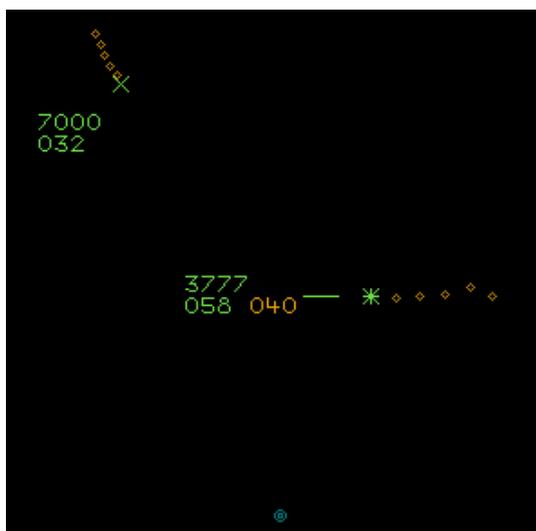


Figure 2 – 09:07.40

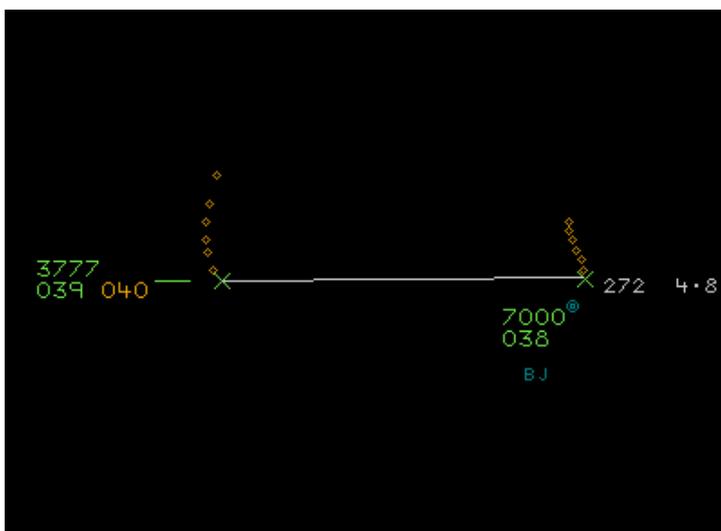


Figure 3 – 09:09.50

At **09:09.50**, the AA5 pilot reported *“in the overhead, 4000ft on 1026.”* The controller responded with *“caution then, a Beech 200 at 4000, I thought you reported at 1800ft.”* The AA5 pilot responded, *“Actually I had to climb above the cloud, I’m looking out for him, I’ll descend through cloud when there’s some gaps.”* The controller immediately turned their attention to the BE20 pilot and advised *“traffic’s an AA5 in the overhead 4000ft.”* The pilot responded, *“Yes so I understand, we are looking.”* (Figure 3).

At **09:10.50** the BE20 pilot reported, *“that traffic in sight.”* (Figure 4).

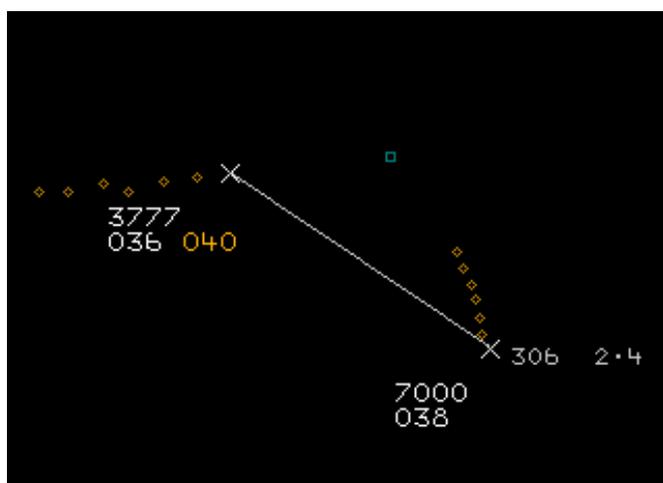


Figure 4 – 09:10.50

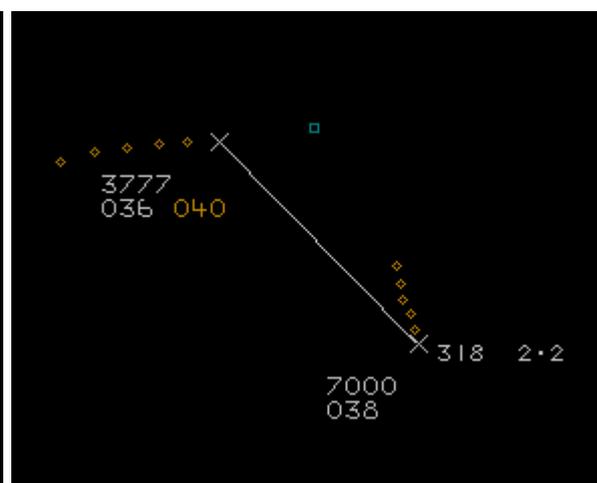


Figure 5 – 09:11.00 CPA

At **09:11.00** CPA occurred, with the aircraft separated by 2.2nm laterally and 200 feet vertically (Figure 5).

Relevant CAP 493 extracts:

Within Class G Airspace, under a Basic Service, Pilots remain responsible for their own collision avoidance. The provider of Basic Service is not required to monitor the flight and pilots should not expect any form of traffic information from a controller. However, if a controller notices that a definite risk of collision exists, a warning shall be issued to the pilot. ((EU) 923/2012 SERA.9001 and SERA.9005(b)(2)).

The request from the AA5 pilot led the controller to believe that the AA5 would transit the overhead at 1800 feet. Without the availability of surveillance equipment, the controller cannot monitor the flight and would have no way of knowing that the AA5 pilot had commenced a climb.

The controller shall provide traffic information, if it is considered that a confliction may exist, on other known traffic; however, there is no requirement for deconfliction advice to be passed, and the pilot remains responsible for collision avoidance. The controller may, subject to workload, provide traffic information on other aircraft participating in the Procedural Service, in order to improve the pilot's situational awareness.

Had the AA5 pilot remained at 1800ft they would not have been relevant traffic to the BE20 pilot.

Controllers may, subject to workload, initiate agreements with pilots of aircraft under Basic Service to restrict their flight profile in order to co-ordinate them with aircraft in receipt of a Procedural Service. Controllers shall limit the occasions on which they make such agreements to those where it is clear that a confliction exists, and only when controller workload permits.

Notwithstanding that there is no requirement for pilots to advise ATC of a change of level under the terms of a Basic Service, had the pilot chosen to advise the controller that they were climbing to remain clear of cloud, this would have provided the controller with an opportunity to explore options to initiate an agreement and pass traffic information at an earlier stage.

As soon as the controller was made aware that the AA5 pilot had climbed to 4000ft they immediately passed traffic information to the pilots of both aircraft and the BE20 pilot subsequently reported having the AA5 in sight.

Gloucestershire Airport ATC

No report was filed from the ATCO at the time of the event because, from listening to the RT recording, no Airprox was reported on the RT, nor was any concern raised from either pilot. No Approach services were available from the period 0830-0900UTC due to SRATCOH break and the relief ATCO being ADI only. The APP ATCO returned from his break at 0900 and Approach services resumed.

At 0901 the BE20 pilot called on the Approach frequency reporting that he was 14nm NW at 7000ft on QNH 1026 inbound to the GST. The aircraft was cleared to the GST at 7000ft to expect further descent in the hold.

At 0904 the AA5 pilot called Gloucester Approach reporting that he was 10nm NW of Gloucester, Sleaf to Kemble at 1800ft on QNH 1026 routing toward the Gloucester overhead and requesting a Basic Service. He was instructed to report in the overhead.

At 0905, the BE20 pilot reported entering the GST hold at 7000ft. At 0907, the BE20 pilot was given descent in the hold to 4000ft and subsequently cleared for the ILS approach to RW27, to maintain 4000ft then report GST outbound.

At 0910, the AA5 pilot reported in the overhead at 4000ft. This was queried by the Approach controller because the pilot's last report was at 1800ft. The pilot reported that he had had to climb above cloud. Traffic information on the BE20 was immediately passed to the AA5 pilot and also to

the pilot of the BE20 on the AA5 in the overhead. The AA5 pilot reported that he was looking for the traffic; the BE20 pilot reported visual with the traffic at 0911. Nothing else was reported.

At 0911, the BE20 pilot reported GST outbound and the AA5 pilot reported leaving the frequency.

Given the fact that no Airprox was reported on the R/T, no formal report was submitted by the ATCO. On interviewing the ATCO, he believed that the AA5 was at 1800ft therefore would not have been traffic that conflicted with the BE20 at 4000ft so did not pass any Traffic Information. He was rather surprised that the AA5 pilot then reported at 4000ft in the overhead, which is why he queried it on the R/T.

In conclusion, there would have been no way that the ATCO could have known that the AA5 pilot had climbed to 4000ft because Gloucestershire Airport has no SSR and the pilot did not report leaving 1800ft or that he was climbing to 4000ft. The first the ATCO knew that a confliction existed was when the AA5 pilot reported in the overhead at 4000ft which is when Traffic Information was immediately passed.

UKAB Secretariat

The Gloucestershire procedure for the ILS to RW27 (Figure 6) is positioned in the Class G airspace above and around the Gloucestershire ATZ. The hold is orientated east-west and is based upon the GST NDB, which is located on the aerodrome. Thus, any aircraft transiting through the overhead of the airfield could potentially conflict laterally with any aircraft in the IF hold. The same hold is used for all instrument procedures at Gloucestershire Airport.

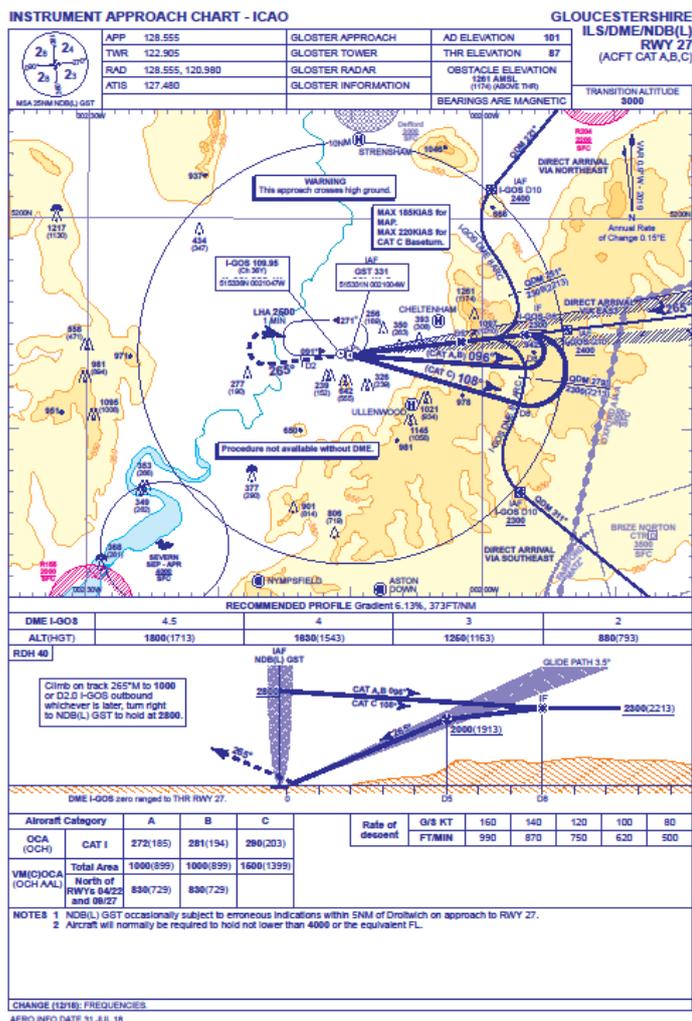


Figure 6 – Gloucestershire ILS to RW27 Procedure

The BE20 and AA5 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.²

Summary

An Airprox was reported when a BE20 and an AA5 flew into proximity in the Gloucestershire Airport overhead at 0911hrs on Saturday 21st August 2019. The BE20 pilot was operating under IFR in VMC and the AA5 pilot was operating under VFR in VMC, the BE20 pilot in receipt of a Procedural Service and the AA5 pilot in receipt of a Basic Service, both from Gloster Approach.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both aircraft, transcripts of the relevant RT frequencies, radar photographs/video recordings and a report from the appropriate ATC 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 considered the actions of the AA5 pilot, and members were quick to agree that changes in altitude to remain VMC are a typical feature of flying in Class G airspace. Notwithstanding, in this instance the pilot had requested permission from the Gloster controller to penetrate the Gloucester ATZ and fly through the overhead of the airport at 1800ft and, although there was no requirement for him to have informed the controller of his change in altitude while flying in Class G airspace, it would have been helpful if he had done so (**CF5**). Some members wondered if the AA5 pilot, being on the same frequency as the BE20 pilot, could have assimilated the presence of the BE20 in the instrument pattern and hence the possibility of there being a potential conflict between himself and the BE20 if he climbed; furthermore, members wondered whether the AA5 pilot had known of the presence of the Gloucester instrument pattern and, in particular, the holding pattern that is based on the NDB on the airfield. With these two aspects in mind the Board concluded that the AA5 pilot's climb through the instrument pattern to remain VMC had been a contributory factor in the Airprox (**CF4**).

Turning to the actions of the Gloucester controller, the Board was disappointed that no Airprox had been declared on the frequency in use at the time, leading to the controller being unaware of the Airprox until informed by the UKAB some 12 days later. The controller had, subsequently, submitted a report but this was not distributed to the UKAB. Controller members felt that, rather than just acknowledging the AA5 pilot's requested altitude of 1800ft, the Gloucester controller could have instructed the AA5 pilot to maintain altitude. Although the pilot would have been under no obligation to follow those instructions when outside the ATZ, it may have prompted the AA5 pilot to inform the controller of his climb when he had become unable to remain VMC at his initially reported altitude. Although they acknowledged that the reason the controller was unable to use the radar was due to his level of training, the Board discussed whether the lack of a suitably qualified controller [UKAB secretariat note: subsequent correspondence between Gloucestershire airport and the UKAB secretariat revealed that the controller was, in fact, qualified to use radar but that the radar was unserviceable at the time] was an issue given the airport's future expansion plans and increase in size and speed of the traffic using the airport. Members wondered whether this lack of radar capability had been fully mitigated in the airport's MAC risk assessment; without a radar picture to confirm the respective altitudes and positions of the 2 aircraft, the controller in this incident had had no way of detecting that the aircraft were not where he expected them to be and therefore could not have detected the conflict between them (**CF1**, **CF2**). That being said, as soon as the controller had received the call from the AA5 pilot that he was in the overhead at 4000ft, the Board commended him for immediately issuing Traffic Information to the BE20 pilot and reciprocal Traffic Information to the AA5 pilot. Members agreed that, although the Traffic Information had been issued as soon as the controller had become aware of the conflict, it had been, nevertheless, been late and was therefore a contributory factor (**CF3**).

The Board then considered the actions of the BE20 pilot and noted that, upon hearing the Gloucester controller querying the altitude of the AA5, he had become concerned by the proximity of the other aircraft (**CF6**). Shortly thereafter, the BE20's TCAS II had issued a TA (**CF7**) and the BE20 pilot had

² SERA.3205 Proximity.

visually acquired the AA5 in his 12 o'clock and had assessed that there was no need for him to take any avoiding action (**CF8**).

In assessing the risk of this encounter, the Board noted that, although the BE20 pilot made an assessment of the risk as 'Medium', the radar recording showed a separation of 2.1nm and 300ft at CPA and that this actually occurred as the BE20 passed behind the AA5. When the AA5 passed in front of the BE20 the lateral separation had, in fact, been closer to 4.5nm. Consequently, members felt that normal safety standards and parameters for flight in Class G airspace had pertained and that no risk of collision had existed. Consequently, the Board attributed Risk Category E to this Airprox.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2019252		
CF	Factor	Description	Amplification
	Ground Elements		
	• Situational Awareness and Action		
1	Contextual	• Situational Awareness and Sensory Events	Generic, late, no or incorrect Situational Awareness
2	Human Factors	• Conflict Detection - Detected Late	
3	Human Factors	• Traffic Management Information Provision	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
	• Situational Awareness of the Conflicting Aircraft and Action		
6	Human Factors	• Interpretation of Automation or Flight Deck Information	Pilot was concerned by the proximity of the other aircraft
	• Electronic Warning System Operation and Compliance		
7	Contextual	• ACAS/TCAS TA	TCAS TA / CWS indication
	• See and Avoid		
8	Human Factors	• Monitoring of Other Aircraft	Sighting report

Degree of Risk: E

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:

Situational Awareness of the Confliction and Action were assessed as **partially effective** because, although the controller was aware of the AA5 approaching the overhead of the airport, the AA5 pilot had not informed the controller that he had climbed to 4000ft.

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

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the AA5 pilot, having received clearance to transit the Gloucestershire airport overhead at 1800ft, then climbed to 4000ft without informing the controller.

Airprox Barrier Assessment: 2019252		Outside Controlled Airspace						
Barrier		Provision	Application	Effectiveness				
				Barrier Weighting				
				0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance	✓	✓					
	Manning & Equipment	✓	✓					
	Situational Awareness of the Conflication & Action	⚠	⚠					
	Electronic Warning System Operation and Compliance	⊘	⊘					
Flight Element	Regulations, Processes, Procedures and Compliance	✓	✓					
	Tactical Planning and Execution	✓	⚠					
	Situational Awareness of the Conflicting Aircraft & Action	✓	✓					
	Electronic Warning System Operation and Compliance	⚠	✓					
	See & Avoid	✓	✓					
Key:		<u>Full</u>	<u>Partial</u>	<u>None</u>	<u>Not Present/Not Assessable</u>	<u>Not Used</u>		
Provision	✓	⚠	✗	⊘				
Application	✓	⚠	✗	⊘				
Effectiveness								