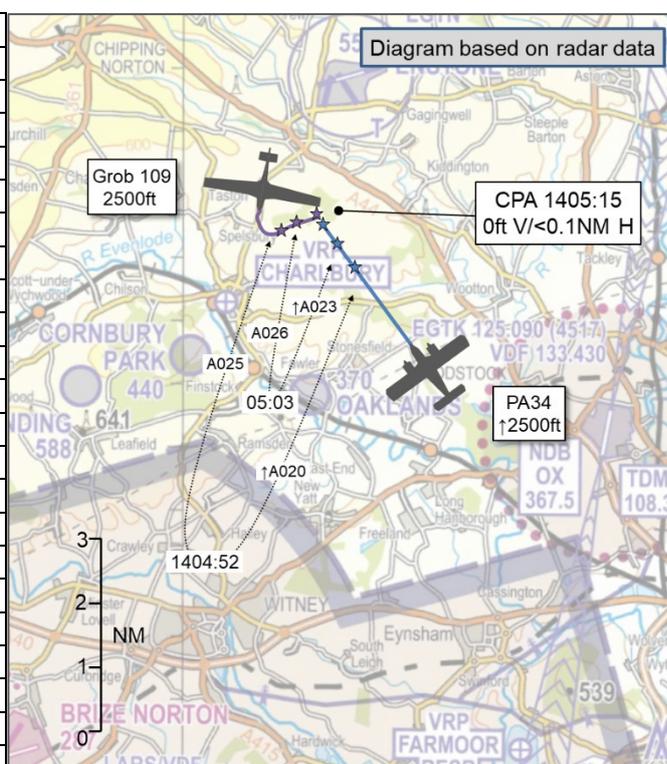


AIRPROX REPORT No 2020151

Date: 22 Oct 2020 Time: 1405Z Position: 5153N 00126W Location: 3.5NM NW Oxford

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA34	Grob109
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Basic ¹
Provider	Oxford	Brize Radar
Altitude/FL	2500ft	2500ft
Transponder	A, C, S	A, C, S
Reported		
Colours	Blue, White	White, Blue
Lighting	Strobes, Nav	Strobes, Landing
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	3000ft	1500ft
Altimeter	QNH (1008hPa)	NK
Heading	315°	186°
Speed	135kt	85kt
ACAS/TAS	TAS	Not fitted
Alert	TA	N/A
Separation		
Reported	0ft V/200m H	0ft V/200m H
Recorded	0ft V/0.1NM H	



THE PA34 PILOT reports that they had been following a standard VFR departure from Oxford and were in touch with ATC and keeping a good look-out. Oxford Radar mentioned 3 potential targets and they initially maintained 2000ft to allow the first aircraft to pass along their left-hand side at 2500ft. This aircraft was also talking to ATC, the two other targets were an aircraft at a similar level at a range of 2NM, heading SW and a Cherokee heading northwest at 3500ft on a similar track to them, but further north. This aircraft caused the pilot some distraction because as they monitored it, it proceeded to carry out a full stall directly above them and just outside the Oxford ATZ. Whilst watching it and deciding whether to turn away, the other aircraft turned towards them and was heading straight towards them on a northeast track. This aircraft was a motor glider and was also not speaking to Oxford. It passed left to right at the same level within 200m. The motor-glider pilot must have seen them because it turned to the left. Both aircraft alerted the TAS. They opined that they were surprised that two aircraft would be carrying out general handling in close proximity to the Oxford ATZ, when not talking to Oxford ATC.

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

THE GROB 109 PILOT reports that they were in an orbit of Charlbury VRP while establishing contact with Brize Radar to request a transit. Clearance given to set heading for transit via west of Farmoor VRP. While en-route they thought they were probably checking they had Odiham frequency and may have been either checking or actually pre-setting it. They were alerted to the presence of traffic on a reciprocal heading and 'similar height' by Brize Radar, but the call was very late. They looked up from logging something on their knee pad to see a twin ahead to the starboard, very close but not on collision course - there was relative movement in field of view. They made a diving turn to port to increase separation. They were also aware of higher single at same time – although this was less alarming. Brize Radar were clearly aware of the traffic and the pilot opined that at the time they thought that ATC might have warned them sooner, but thanked them for the heads up.

¹ The pilot reported Radar Control, but was receiving a Basic Service at the time of the Airprox.

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

THE OXFORD CONTROLLER reports that they were on duty as the radar controller at the time of this incident, providing OJT to a trainee with around 130hrs in APS. The Airprox was reported by the pilot. The PA34 departed Oxford RW19 VFR at 1401, routing roughly north-west on their own navigation, and requested a Traffic Service² from Oxford radar, initially climbing not above 2000ft. Shortly after service commenced, the trainee passed Traffic Information to [PA34 C/S] first on traffic routing above them from the west at 2500ft, also working Oxford radar. The pilot reported they were visual with this first aircraft, and after the two aircraft had passed, the pilot requested, and the trainee removed, the 2000ft altitude restriction. The PA34 climbed to around 3000ft. The trainee then passed Traffic Information to [PA34 C/S] on an aircraft manoeuvring 2-3NM to their northwest indicating 3500ft. The pilot responded that they were visual with two aircraft to their northwest, indicating they were also visual with a second aircraft, within 1-2NM of the first, indicating a similar level to the PA34. Avoiding advice was not requested. The trainee did not pass specific Traffic Information on this second aircraft to [PA34 C/S], but the instructor was satisfied that the pilot had sighted both aircraft – they did not recall any other aircraft indications in the immediate area. They did not monitor the encounter closely as the pilot had reported visual with both aircraft. The Airprox was reported at 1408Z.

THE BRIZE CONTROLLER reports that they were screening a UT controller in Zone when [Grob 109 C/S] called up in the vicinity of Charlbury. The pilot requested a Basic Service and Zone transit routing via Farmoor reservoir. The UT gave the pilot a squawk and applied a Basic Service. Once identified they passed the crossing clearance. They then called multiple contacts in the vicinity of the aircraft and the pilot responded along the lines of "that was awfully close, I was writing on my knee pad" (probably because the controller had just passed the crossing clearance). The aircraft was on a Basic Service but the controller called the contacts due to their close proximity under duty of care. The pilot did not declare an Airprox and there was no further mention of the occurrence.

Factual Background

The weather at Oxford was recorded as follows:

EGTK 221420Z 25012KT 9999 FEW019 SCT023 BKN026 13/09 Q1008=

Analysis and Investigation

CAA ATSI

The PA34 pilot contacted Oxford Radar at 1403:00 requesting a Basic Service. The Oxford Radar controller confirmed the Basic Service, the QNH and issued a transponder code which was all read back correctly (Figure 1).



Figure 1 – 1403:00

² UKAB note: Review of the RT transcript shows that a Basic Service was requested and agreed.

At 1403:36 the radar controller passed Traffic Information on the PA34 to an SR22 pilot who was receiving a Traffic Service to the west of Oxford tracking east (Figure 2). The Traffic Information was updated at 1403:55 and the SR22 pilot reported visual with the PA34 (Figure 3).

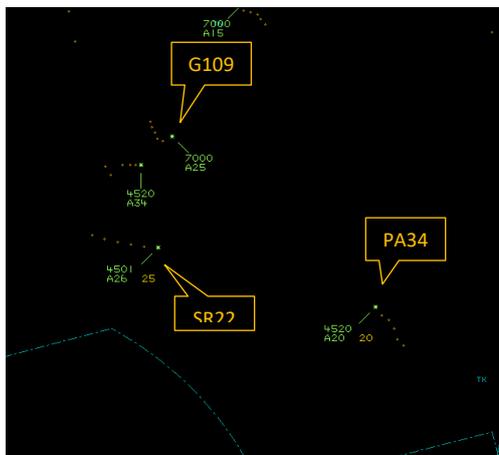


Figure 2 – 1403:36

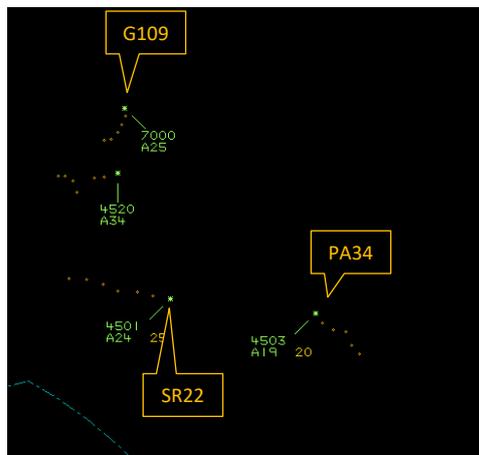


Figure 3 – 1403:55

The transponder code for the Grob 109 was seen to change to 3706 (Brize Norton) at 1404:03. At 1404:08 the Oxford controller passed reciprocal Traffic Information to the PA34 pilot on the SR22. The pilot reported visual with the aircraft and requested removal of a level restriction. The controller removed the level restriction at 1404:20 and then passed Traffic Information; *“traffic northwest 2 miles indicating 3400ft”*. The PA34 pilot acknowledged the Traffic Information and advised *“traffic sighted, two, two targets in our north west”* (Figure 4). The controller then reduced the Traffic Service to the SR22 as it approached the radar overhead and dealt with an aircraft leaving the frequency (1404:40 – Figure 5).

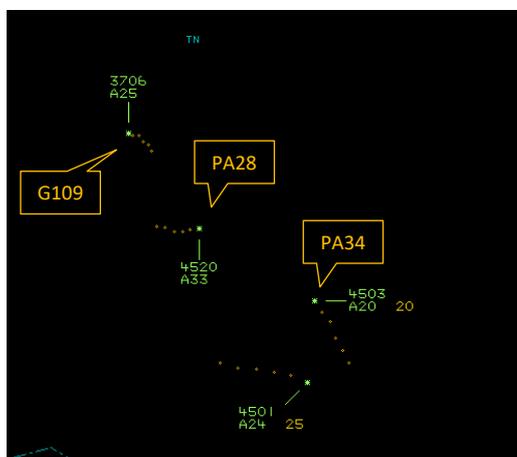


Figure 4 – 1404:20

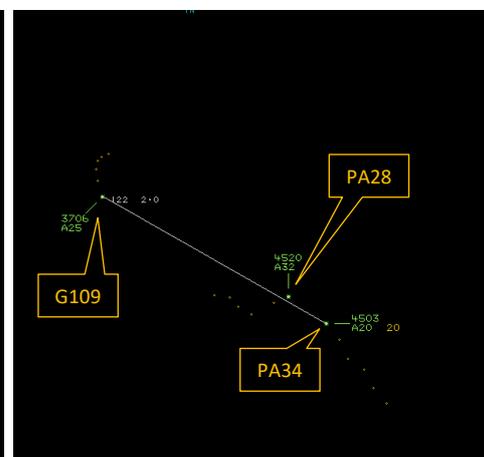


Figure 5 – 1404:40

There were no further transmissions and CPA occurred at 1405:15 with the aircraft separated by less than 100ft and 0.1NM (Figure 6). At 1408:10 the pilot of the PA34 called the Oxford controller advising that they wished to file an Airprox against the Grob 109.



Figure 6 – 1405:15 (CPA)

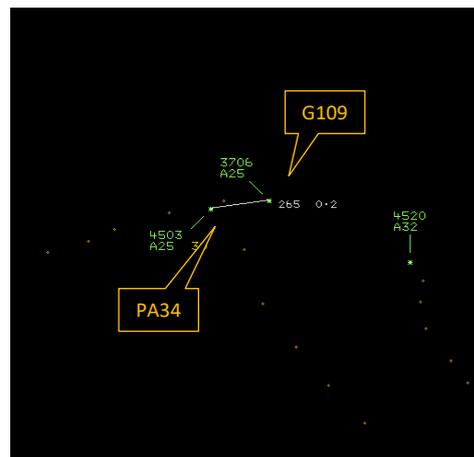


Figure 7 - 1405:19

The PA34 pilot in their written report, remembered receiving Traffic Information on the SR22 and being visual with it. They also reported receiving Traffic Information on an aircraft tracking south west at the same level, and on another aircraft heading northwest at 3400ft. The pilot also reported that the second aircraft was carrying out a full stall above them and *“this did cause me distraction as I monitored it proceeded to carry out a full stall directly above us”*. They then went on to confirm that the first aircraft was the Grob 109, and believed that the aircraft had seen them as it turned to the left. They reported receiving a TAS alert on both aircraft.

The Grob 109 pilot reported holding in the vicinity of Charlbury to establish communications with Brize Radar. They reported receiving late Traffic Information on opposite direction traffic, and on looking up saw the *“twin ahead to stbd [starboard] very close but not on collision course”*.

The Oxford controller was under training and it was the instructor who completed the report. Their report incorrectly stated that the PA34 was under a Traffic Service, (a Basic Service had been agreed), but that the trainee controller had passed Traffic Information to the PA34 pilot on the two aircraft to the northwest and that the PA34 pilot had reported visual with both. As such, they believed that there was no need for any further Traffic Information to be passed on the Grob 109.

In the subsequent unit investigation, it was questioned as to whether when the PA34 was passed the Traffic Information on the two aircraft to their north-west and they had replied *“traffic sighted, two, two targets in our north west”*, that the pilot was in fact referring to their TAS and not a visual sighting out of the cockpit window.

CAP774 states:

- 2.5 *Given that the provider of a Basic Service is not required to monitor the flight, pilots should not expect any form of traffic information from a controller/FISO. A pilot who considers that he requires a regular flow of specific traffic information shall request a Traffic Service.*
- 2.6 *However, where a controller/FISO has information that indicates that there is aerial activity in a particular location that may affect a flight, in so far as it is practical, they should provide traffic information in general terms to assist with the pilot's situational awareness. This will not normally be updated by the controller/FISO unless the situation has changed markedly, or the pilot requests an update.*
- 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.*

ATSI agree with the Oxford unit investigation report, that based on the pilot's response to the Traffic Information, and as the pilot was receiving a Basic Service, the controller had fulfilled their responsibilities, and was also justified in assuming that there was no requirement to update the Traffic Information any further, having apparently received a "visual" call from the pilot.

Military ATM

The Grob 109 pilot was conducting an orbit of Charlbury whilst establishing contact with Brize Radar to request a transit of the CTR. Once the clearance was given, the pilot reported that they set a heading for their transit via west of Farmoor VRP and noted that while on route they were probably checking they had the Odiham frequency and may have been checking or pre-setting the frequency. They reported that Traffic Information was passed by Brize Radar which caused them to look up from logging something on their knee pad to observe the reported aircraft to the starboard very close but not on a collision course. They had no alerting system fitted and the first sighting was reported as 0.3km which prompted a diving turn to port. Separation was reported as 200m horizontally. Although the pilot's report stated that they were under a Radar Control Service on review of the RT Transcript this was inaccurate.

The Brize Zone Instructor reported that the Grob 109 pilot called up in the vicinity of Charlbury requesting a Basic Service and passed their intended routing which required a CTR transit. They reported that a Basic Service was provided before the Grob 109 was identified and passed a crossing clearance. When reviewing the provided tape transcript, it was identified that while a Basic Service was requested the Brize UT Zone Controller had not formally agreed to provide one however, all their subsequent actions were as expected of a controller providing a Basic Service. They provided the Grob 109 with a crossing clearance and the Brize QNH prior to providing Traffic Information on the PA34 and the PA28 as a single transmission reporting multiple contacts south-east, one mile indicating similar level. The U/T was not controlling any other traffic apart from the Grob 109.

Figures 8-11 show the positions of the PA34 and the Grob 109 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 Norton, therefore, may not be entirely representative of the picture available to the Brize Norton controllers.

The Grob 109 had requested a Basic Service and a zone crossing clearance from Brize Zone and was issued a squawk by the Brize Norton controller. Twenty six seconds after the squawk was issued it could be seen on the radar screen. Separation between the Grob 109 and the PA34 was 3.3NM and 700ft (Figure 8).

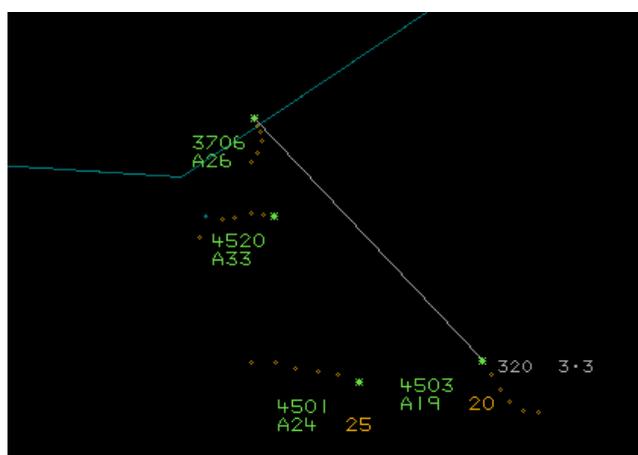


Figure 8:
Grob 109 squawk observed.

The Grob 109 pilot readback the Brize Norton CTR crossing clearance and was passed the Brize Norton QNH. Separation had decreased between the Grob 109 and the PA34 to 1.3NM and 500ft. One second after passing the Brize QNH the PA34 Mode C changed to indicate the PA34 was climbing.



Figure 9:
Grob 109 passed the Brize Norton QNH

Traffic Information was passed to the Grob 109 pilot on multiple tracks SE, 1NM similar level, 17sec after the Brize QNH was passed. Separation between the Grob 109 and the PA34 reduced to 0.3NM and 200ft.

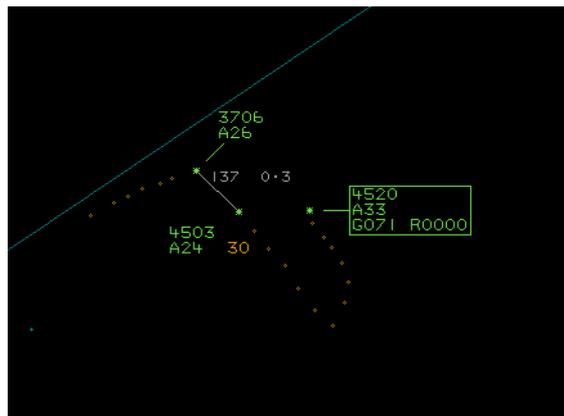


Figure 10: Grob 109 Passed Traffic Information

CPA occurred six seconds after the Traffic Information was passed between the Grob 109 and the PA34. Separation was measured at 0.1NM and 0ft.



Figure 11:
CPA between Grob 109 and PA34

Whilst the Grob 109 pilot was not formally provided with a Basic Service, it was evident from the controller's actions that they believed they were providing a Basic Service and carried out their actions accordingly. Although it was reported by the Grob 109 pilot that Traffic Information could have been passed earlier, it was not known what other tasks the controller was doing at the time so there was insufficient evidence to determine whether the controller would have been able to pass Traffic Information any earlier than it was passed. The pilot reported that they were distracted, and the Traffic Information provided by the Brize Norton controller prompted them to look out which subsequently allowed them to become visual and take appropriate avoiding action. The PA34 pilot reported that they were surprised that the other aircraft were not in contact with Oxford ATC, however, the PA28 was receiving a Basic Service from Oxford Radar and the Grob 109 was in contact with Brize Norton as they required a transit of the Brize CTR. Therefore, whilst being on different frequencies could have been an additional factor, the Grob 109 pilot was on the correct frequency for their intended routing.

Occurrence Investigation

Oxford ATC Investigation

The Airprox occurred during light-medium traffic levels. On departure the PA34 pilot requested a Basic Service and this was provided by the trainee controller. Of note the pilot was then issued with a discrete squawk, presumably in order to identify the aircraft although this wasn't required for aircraft operating under a Basic Service.

Traffic information was passed to an aircraft operating on a Traffic Service on the position of the PA34 and vice versa. Both pilots reported each other in sight in good time. Following this [PA34 C/S], requested "*no level restriction*" (as per local agreement VFR departures leaving Oxford are to fly not above altitude 2000ft until 5NM from the aerodrome or until the level restriction is removed by the Oxford radar controller). The level restriction was removed together with Traffic Information that there was traffic "*northwest, two miles, eastbound indicating three thousand, four hundred feet*", the pilot then reported, "*traffic sighted erm two, two targets in our northwest*". This could be considered misleading, the use of the word "targets" could be construed that the pilot was actually viewing said aircraft via a TCAS system as opposed to physically seeing the conflicting aircraft. Three minutes later [PA34 C/S] informed the controller of their intention to file an Airprox. Ultimately, it must be highlighted that the PA34 pilot was at all times operating under a Basic Service, at no point was any higher level of service requested or imposed by the controller. The aircraft was issued with a discrete squawk on departure but again "Identification of an aircraft in receipt of a Basic Service does not imply that an increased level of ATS is being provided or that any subsequent monitoring will take place" (CAP774). And that whilst under a Basic Service "pilots should not expect any form of Traffic Information from a controller/FISO" (CAP774).

UKAB Secretariat

The PA34 and Grob 109 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.³ If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right.⁴ If the incident geometry is considered as converging then the Grob 109 pilot was required to give way to the PA34.⁵

Summary

An Airprox was reported when a PA34 and a Grob 109 flew into proximity 3NM north-west of Oxford at 1405Z on Thursday 22nd October 2020. Both pilots were operating under VFR in VMC, the PA34 pilot

³ SERA.3205 Proximity.

⁴ SERA.3210 Right-of-way (c)(1) Approaching head-on.

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

in receipt of a Basic Service from Oxford and the Grob 109 pilot in receipt of a Basic Service from Brize Radar.

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 a combination of written contributions and dial-in/VTC comments.

The Board first looked at the actions of the PA34 pilot. They were only receiving a Basic Service from Oxford ATC, yet had still received Traffic Information on the SR22 prior to the Airprox and then on further traffic to the northwest of their position. The pilot replied that they were visual with two targets, although it was not known whether the pilot meant visual with two aircraft, or that they had two targets on their TAS. The pilot then reported becoming distracted by the PA28 which was manoeuvring above them and to their right (**CF4**) and so members wondered whether the pilot had not assimilated that there was in fact a second aircraft (**CF2**). The pilot received a TAS alert (**CF3**) which should have alerted them to the second aircraft. However, when the pilot looked ahead, they were surprised to see the Grob 109 directly in front of them (**CF5**). Noting the pilots comments about aircraft operating in the area without contacting Oxford ATC, members highlighted that the Grob 109 pilot had called Brize Radar for a service because they wanted a CTR crossing, a perfectly reasonable situation, and it was just unfortunate that in that area there are the two ATC units in close proximity.

Turning to the Grob 109 pilot, they had called Brize Radar in order to get a clearance to cross the CTR. Whilst awaiting the clearance they were orbiting in the Charlshford area. Once they had received their clearance members thought it likely that they were writing it on their knee-pad when the controller gave Traffic Information on the PA34 (**CF4**). The Grob pilot looked out and saw the PA34 just ahead (**CF1**). The pilot thought that the Traffic Information was received late, and without knowing whether the controller was engaged in other tasks the Board couldn't say whether they could have called it earlier or not. The Board again wished to reiterate the limitations of a Basic Service namely that Traffic Information would only be given if a controller perceived a definite threat of collision existed and that controllers are not required to continually monitor the aircraft. If the Grob 109 pilot had wanted Traffic Information, they should have requested a Traffic Service. Members noted that whilst in the left-hand orbit the right wing of the motor-glider would be high, probably blocking the view of the PA34, in this case the pilot was alone in the cockpit, but they noted that when writing down clearances it is always useful to get a passenger to keep a lookout when possible. As it happened, having been told about the traffic the pilot saw the PA34, albeit late (**CF5**), and the pilot managed to take avoiding action.

The Board briefly looked at the role ATC had to play and noted that in both cases the controllers were providing a Basic Service and as such were not required to provide Traffic Information, but did so anyway. Controlling members opined that once the PA34 pilot had reported visual, they would not have expected the Oxford controller to repeat the Traffic Information. The Board therefore thought that both controllers had discharged their duties diligently.

Finally, in assessing the risk of the Airprox, some members thought that with a separation of 0.1NM, that safety had been much reduced and an risk of collision had existed. However, others argued that because the PA34 pilot had been visual with the Grob 109 and the Grob 109 pilot had managed to take effective avoiding action, there had not been a risk of collision. After some discussion, but without needing to call a vote, members agreed that although safety had been degraded, there had been no risk of collision; Risk Category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2020151			
CF	Factor	Description	Amplification
Flight Elements			
x	• Situational Awareness of the Conflicting Aircraft and Action		
1	Contextual	• Situational Awareness and Sensory Events	The pilot had generic, late or no Situational Awareness
2	Human Factors	• Understanding/Comprehension	Pilot did not assimilate conflict information
x	• Electronic Warning System Operation and Compliance		
3	Contextual	• Other warning system operation	Warning from a system other than TCAS
x	• See and Avoid		
4	Human Factors	• Distraction - Job Related	Pilot looking elsewhere
5	Human Factors	• Monitoring of Other Aircraft	Late-sighting by one or both pilots

Degree of Risk: C.

Safety Barrier Assessment⁶

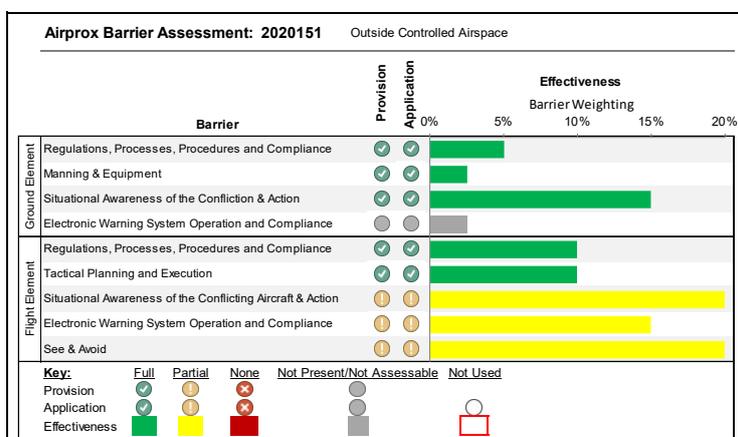
In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the Grob 109 pilot had late situational awareness of the PA34 and the PA34 pilot did not assimilate the conflict information on the Grob 109.

Electronic Warning System Operation and Compliance were assessed as **partially effective** because although the TAS in the PA34 alerted, the pilot did not assimilate the presence of the Grob 109, due to the distraction by the manoeuvring PA28.

See and Avoid were assessed as **partially effective** because the Grob 109 managed to take late avoiding action.



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