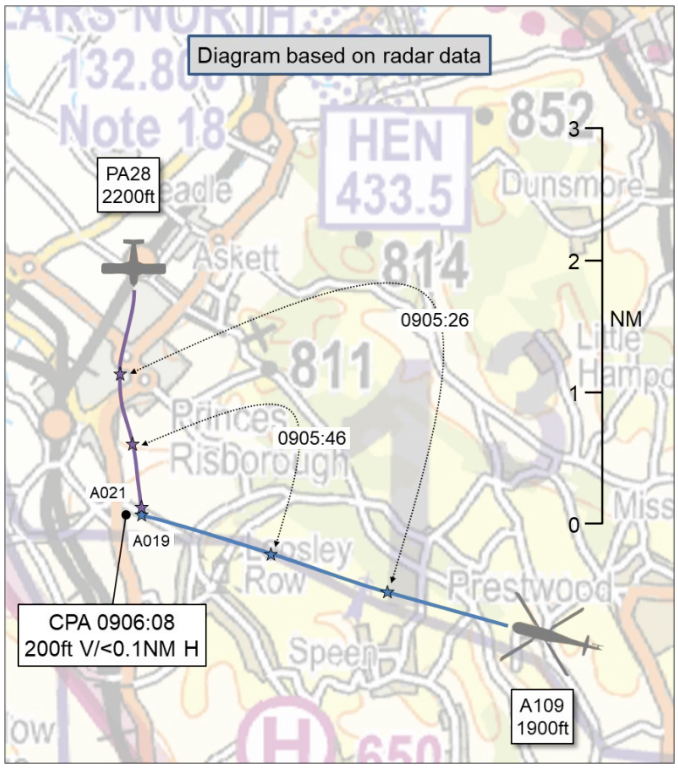
# AIRPROX REPORT No 2024154

Date: 08 Jul 2024 Time: 0906Z Position: 5142N 00050W Location: 1NM S Princes Risborough

## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

| Recorded | Aircraft 1 | Aircraft 2 |
|---|---|---|
| Aircraft | A109 | PA28 |
| Operator | Civ Comm | Civ FW |
| Airspace | London FIR | London FIR |
| Class | G | G |
| Rules | VFR | VFR |
| Service | Establishing contact | AGCS |
| Provider | Brize Zone | Wycombe Radio |
| Altitude/FL | 1900ft | 2100ft |
| Transponder | A, C, S | A, C |
| **Reported** | | |
| Colours | Blue | White |
| Lighting | Position, anti-col, landing, strobe | Nav, strobes, beacon |
| Conditions | VMC | VMC |
| Visibility | >10km | >10km |
| Altitude/FL | 1900ft | 2100ft |
| Altimeter | QNH (1015hPa) | QNH (1015hPa) |
| Heading | "*NW*" | 170° |
| Speed | 140kt | 90kt |
| ACAS/TAS | SkyEcho | Not fitted |
| Alert | None | N/A |
| **Separation at CPA** | | |
| Reported | 100ft V/0m H | 250ft V/100m H |
| Recorded | 200ft V/<0.1NM H | |




**THE A109 PILOT** reports that they had no TAS, but had [an EC device] synchronised to an iPad. From the position and closing rate in their window, it was a classic 'difficult spot' until the last second. They had been 'eyes-in' to change frequency and, as they looked up, the aircraft caught their eye. It was maybe less than 200m away and just slightly above, in the two o'clock position heading to their 8 o'clock. They had just enough time to shove the stick forwards to ensure separation. The [PA28] passed over the top of them.

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

**THE PA28 PILOT** reports that, prior to the Airprox, they were overhead Princes Risborough and had just contacted Wycombe Radio to receive airfield information to join the circuit. Shortly after passing south of Princes Risborough on a southerly heading towards the Golden Ball, a blue and white helicopter passed approximately 200-300ft below them. They didn't see the other aircraft until around 5-10sec before, by which point it was clear to them that it would pass below. The [A109] passed below and, they believe, a little behind. Although they didn't feel any danger at the time, had they started their descent earlier to circuit height there could have been a much higher risk of collision.

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

**THE BRIZE ZONE CONTROLLER** reports that [the pilot of the A109] contacted Brize Zone on 119.005MHz for a Basic Service outside [Brize zone], and a zone-crossing to a private landing site. The DF trace indicated that the aircraft was located to the east of Brize Norton and, by using the code callsign function, they were able to determine that [the A109] was in the vicinity of Princes Risborough. They asked the [A109 pilot] if they were looking to transit the Benson MATZ. [The pilot of the A109] responded with "*I will be transiting their northern stub, overhead the city of Oxford, then via Eynsham to the private site that is just...*". The pilot stopped transmitting at that point. [The Brize Zone controller]

instructed [the pilot of the A109] to free-call Benson Zone, initially 120.9MHz. There was no response from the pilot, so they then instructed them to free-call Benson Zone 120.9MHz again. "*120.9*" was then readback by the pilot. Approximately 30sec had passed, [and the pilot of the A109] contacted them again on the Brize Zone frequency stating that the pause in their transmission was due to an Airprox in the vicinity of Princes Risborough. They acknowledged this and again instructed the pilot to contact Benson Zone 120.9MHz. They knew that the pilot had intended to speak to Brize Zone again after transiting the Benson MATZ so they had intended to speak to the Brize Supervisor for advice and gain details from the pilot regarding the Airprox at a more convenient time for the pilot.

[In consideration of the air safety implications of this report, the Brize Zone controller opined that,] after using the code-callsign function to ascertain the position [of the A109] on the radar, they could have called traffic before requesting their routeing. This would have increased the pilot's situational awareness. Traffic Information would not have stopped the Airprox from happening in their opinion. However, Traffic Information would have helped the pilot get visual earlier or the pilot would have been able to descend which would have increased the separation of the two aircraft.

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

**THE WYCOMBE RADIO AGO** did not submit a report.

## Factual Background

The weather at Benson was recorded as follows:

```
METAR EGUB 080920Z 16008KT 9999 FEW026 BKN070 17/10 Q1015 TEMPO SCT020 RMK BLU TEMPO WHT
```

## Analysis and Investigation

### Military ATM

Utilising occurrence reports and information from the local investigations, outlined below are the key events that preceded the Airprox. Where available, they are supported by screenshots to indicate the positions of the relevant aircraft at each stage. The screenshot is taken from Unit Radar recordings and represents the radar presentation of the A109 and PA28 available to the Brize Norton Zone controller.

The significant size of the Brize Norton Zone area of responsibly results in controllers often operating with a considerable range scale selected, which was the controller's view prior to the pilot of the A109 making contact.

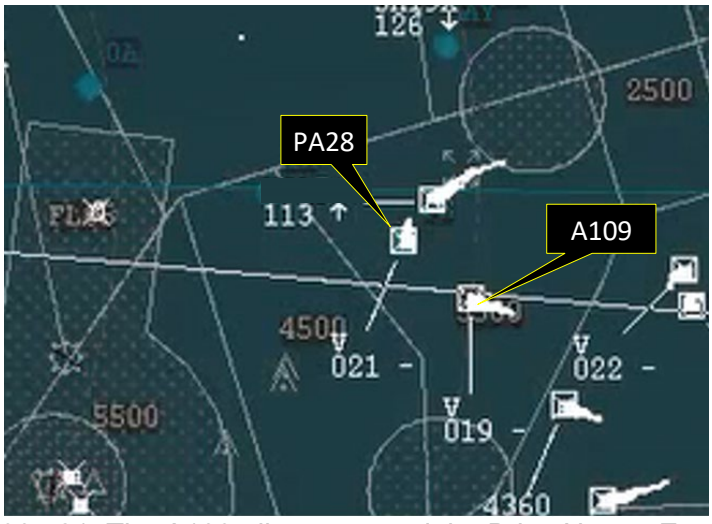



Figure 1 - 0905:21. The A109 pilot contacted the Brize Norton Zone controller.

Sequence of events: At 0905:21, the A109 pilot contacted the Brize Norton Zone controller requesting a "Basic outside and a zone cross for private landing site". At that point, the A109 was already within the vicinity of the PA28 with only approximately 200ft separation and a converging profile.

At 0905:34, through use of the DF trace and Mode S callsign conversion, the Brize Norton Zone controller was aware of the A109's position but had not provided any formal identification or Air Traffic Service.

At 0905:44, the Brize Norton Zone controller looked to confirm the A109's routeing "are you looking to transit Benson MATZ". The A109 pilot confirmed their intentions "I'll be transiting their northern stub, overhead the city of Oxford, hoping to route via Eynsham, to private site". To which the Brize Norton Zone controller responded at 0906:07 by instructing the A109 [pilot] to free-call Benson Zone given their routeing. CPA occurred at 0906:08 and was recorded [on the Brize radar] as <0.1NM and 300ft separation.

Local BM Investigation: A local investigation was conducted by Brize Norton following the event to identify the Air Traffic Services related causal/aggravating factors. The outcome of the investigation was a Loss of Safe Separation between two non-co-operating aircraft with an ATM-related causal factor of incorrect plan selection. The Brize Norton Zone controller prioritised the routeing request and requirement to be with Benson Zone given the proximity to the MATZ, rather than provide generic Traffic Information in line with the unidentified nature of the A109. Through investigation it was identified that the controller selected this course of action based on the assumption that the A109 pilot was already visual with the conflicting traffic given the nature of their proximity when the pilot of the A109 free-called.

2 Gp BM Analysis: The position of the free-call by the pilot of the A109 presented the Brize Norton Zone controller with competing priorities in terms of actions to take. The proximity to the Benson MATZ, which was active, and the requirement to contact Benson Zone was incorrectly prioritised by the Brize Norton Zone controller given the fact they were aware of the PA28's proximity. Their awareness was evident through the way that they rotated the labels of both the A109 and PA28 [on the radar display recording] whilst confirming the route. The lessons learnt from this event have been disseminated across the controlling community with a re-emphasis to confirm if aircrew are visual rather than assuming so.

**UKAB Secretariat**

An analysis of the NATS radar replay was undertaken and the A109 could be positively identified from Mode S data. The PA28 was identified by reference to the pilot's narrative report. CPA was determined to have occurred between the radar sweeps at 0906:06 and 0906:10 (Figures 2 and 3).

The A109 and PA28 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 converging then the A109 pilot was required to give way to the PA28.[2]

[1] (UK) SERA.3205 Proximity.
[2] (UK) SERA.3210 Right-of-way (c)(2) Converging.

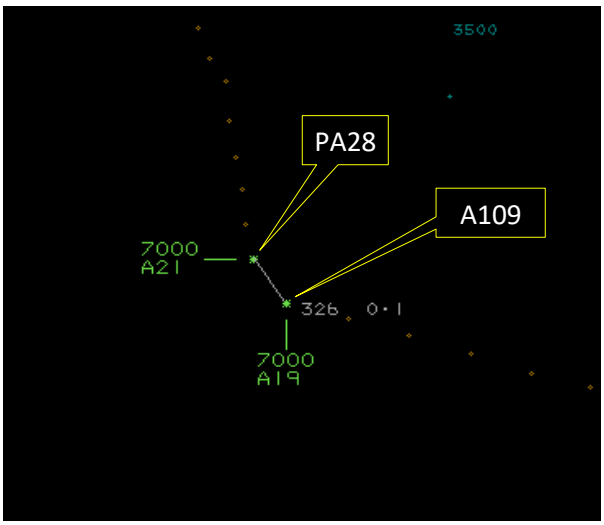



Figure 2 – 0906:06

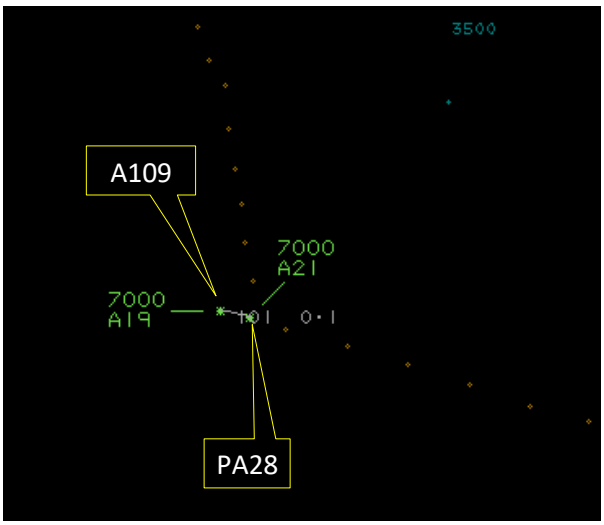



Figure 3 – 0906:10

**Summary**

An Airprox was reported when an A109 and a PA28 flew into proximity 1NM south of Princes Risborough at 0906Z on Monday 8th July 2024. Both pilots were operating under VFR in VMC, the A109 pilot in receipt of a Basic Service from Brize Zone and the PA28 pilot in receipt of an AGCS from Wycombe Radio.

## PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, a report from the air traffic controller involved and a report from the appropriate operating authority. 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 pilot of the A109. Members noted that they had contacted the Brize Zone controller and, as they had been passing details of their flight and intentions, the call had been truncated. Members noted that an ATS had not been established and no Traffic Information pertinent to their flight had been passed by the controller. Members agreed that the EC device fitted to the A109 would not have been expected to have detected the presence of the PA28 (**CF3**). Consequently, members agreed that the pilot of the A109 had not had situational awareness of the PA28 in the area (**CF2**) until it had been visually acquired. Members noted that the pilot of the A109 had taken avoiding action, although acknowledged that the nature of the action had been somewhat urgent. Members would return to this point later in the discussion. It was, however, agreed that the proximity of the PA28 had caused the A109 pilot concern (**CF4**).

Members turned their attention to the actions of the pilot of the PA28. It was noted that the PA28 had not been fitted with an additional EC device and members suggested that such a device may have aided the pilot of the PA28 with situational awareness of traffic in the vicinity. Notwithstanding, members noted that, shortly before CPA, the pilot of the PA28 had contacted Wycombe Radio for information to join the circuit. Consequently, members agreed that the pilot of the PA28 had not had situational awareness of the presence of the A109 (**CF2**) until it had been visually acquired. It was noted that the PA28 pilot had reported that they had had "*5 to 10 seconds*" from the moment of having sighted the A109 to have judged that it would have passed below them.

Members considered the actions of the Wycombe Radio AGO and agreed that they had not had responsibility to have monitored the flight of the PA28 and could not have influenced the situation for a better outcome. Members indicated that they had nothing further to add and next considered the actions of the Brize Zone controller. It was noted that both pilots had selected the transponder squawk code 7000. Consequently, members agreed that the STCA in use at the Brize unit would not have detected a conflict as the codes would have fallen outside the select frame (**CF1**). Members next noted that,

upon being contacted by the pilot of the A109, the Brize Zone controller had requested the A109 pilot's details and intentions. A member with particular knowledge of military radar operations explained that the Area of Responsibility (AoR) for the Brize Zone controller is considerable and that it may have taken several seconds for them to have located the A109 on their radar screen. From an analysis of the Brize radar recordings, members agreed that the Brize Zone controller had located the position of the A109 (and had been aware of the proximity of the PA28) before they had transmitted a request for more information on the A109 pilot's intended routeing. Acknowledging that the A109 had not yet been formally identified (validated and verified), members were in agreement that there had been an opportunity for the Brize Zone controller to have passed a caution, perhaps of the nature of "traffic believed to be you has traffic in your 2 o'clock". Members agreed that such a transmission may have been more pressing than to have sought confirmation of the A109 pilot's routeing intentions. However, one member pointed out that it may have been likely that the passage of Traffic Information on the PA28 to the pilot of the A109 would have occurred at the moment of CPA and thus would have rendered the information purposeless.

Concluding their discussion, members agreed that this Airprox encounter highlighted the challenges to pilots and controllers for operations in busy Class G airspace. It was also agreed that, perhaps, it had been unfortunate timing that there had not been a common frequency in use between the pilots. Members turned their attention to the determination of risk and recalled their earlier thoughts on the avoiding action required by each pilot. Members agreed that the pilot of the A109 had sighted the PA28 first and had taken action to descend beneath it. Consequently, once the A109 had been sighted by the pilot of the PA28, it had appeared to have been descending, and members agreed they had had sufficient time to have assimilated the geometry of the encounter and to have concluded that the A109 would indeed pass below them. Members were left to determine the 'urgency' of the avoiding action taken by the pilot of the A109. The pilot of the A109 described their avoiding action as 'they had just enough time to shove the stick forwards to ensure separation'. Some members felt that that represented a late sighting that had required emergency action. Other members felt that, although the situation had clearly required rapid assessment, the existing separation between the aircraft had been such that to have taken little or no avoiding action may not have been disastrous (albeit uncomfortably close). A vote was conducted and the latter view prevailed. Members therefore concluded that safety margins had been reduced but there had not been a risk of collision. The Board assigned Risk Category C to this event.

## PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

| | **2024154** | | | |
|---|---|---|---|---|
| CF | **Factor** | **Description** | **ECCAIRS Amplification** | **UKAB Amplification** |
| | **Ground Elements** | | | |
| | **• Electronic Warning System Operation and Compliance** | | | |
| 1 | Technical | • Conflict Alert System Failure | Conflict Alert System did not function as expected | The Conflict Alert system did not function or was not utilised in this situation |
| | **Flight Elements** | | | |
| | **• Situational Awareness of the Conflicting Aircraft and Action** | | | |
| 2 | Contextual | • Situational Awareness and Sensory Events | Events involving a flight crew's awareness and perception of situations | Pilot had no, late, inaccurate or only generic, Situational Awareness |
| | **• Electronic Warning System Operation and Compliance** | | | |
| 3 | Technical | • ACAS/TCAS System Failure | An event involving the system which provides information to determine aircraft position and is primarily independent of ground installations | Incompatible CWS equipment |
| | **• See and Avoid** | | | |
| 4 | Human Factors | • Perception of Visual Information | Events involving flight crew incorrectly perceiving a situation visually and then taking the wrong course of action or path of movement | Pilot was concerned by the proximity of the other aircraft |

Degree of Risk: C.

Safety Barrier Assessment[3]

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

**Ground Elements:**

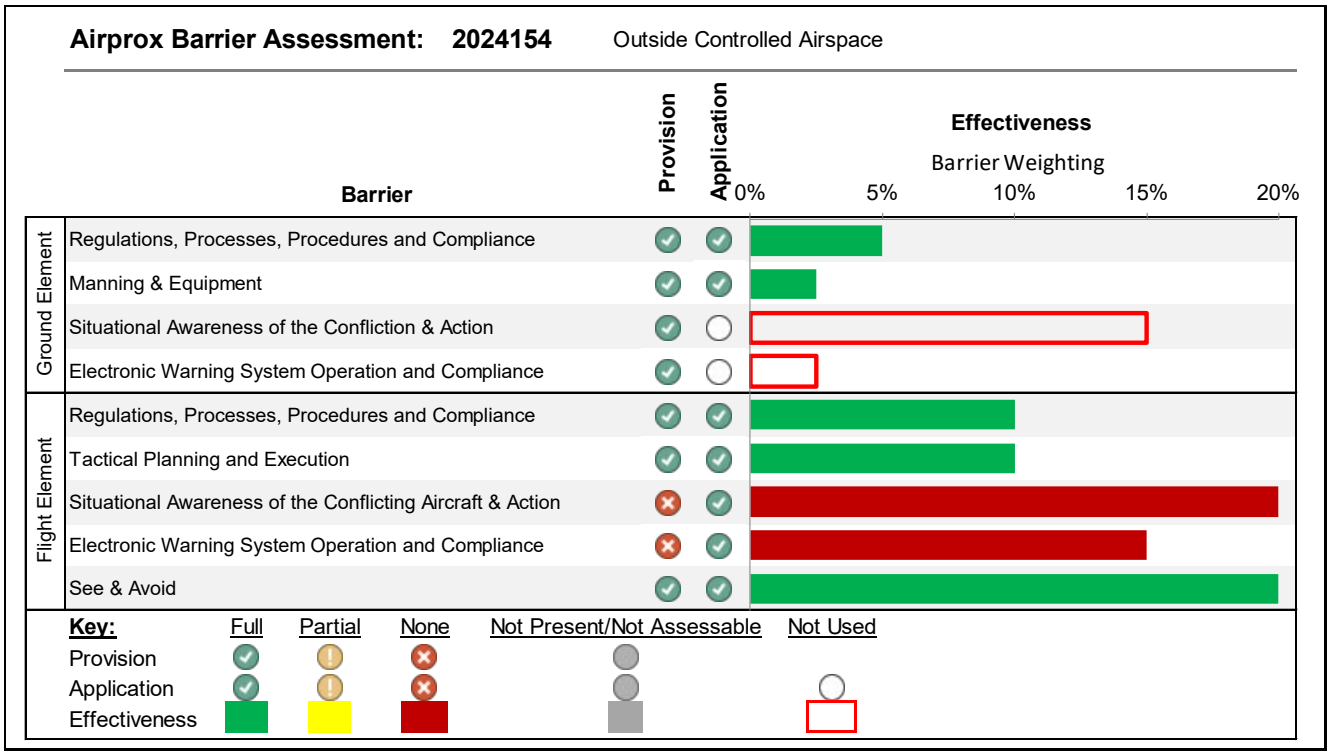
**Situational Awareness of the Confliction and Action** were assessed as **not used** because the Wycombe Radio AGO had not been required to have monitored the flight of the PA28.

**Electronic Warning System Operation and Compliance** were assessed as **not used** because the transponder codes selected by the pilots of the two aircraft were outside the select frame of the Brize Norton STCA.

**Flight Elements:**

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **ineffective** because neither pilot had situational awareness of the presence of the other aircraft until visually acquired.

**Electronic Warning System Operation and Compliance** were assessed as **ineffective** because the EC device fitted to the A109 would not have been expected to have detected the presence of the PA28.




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