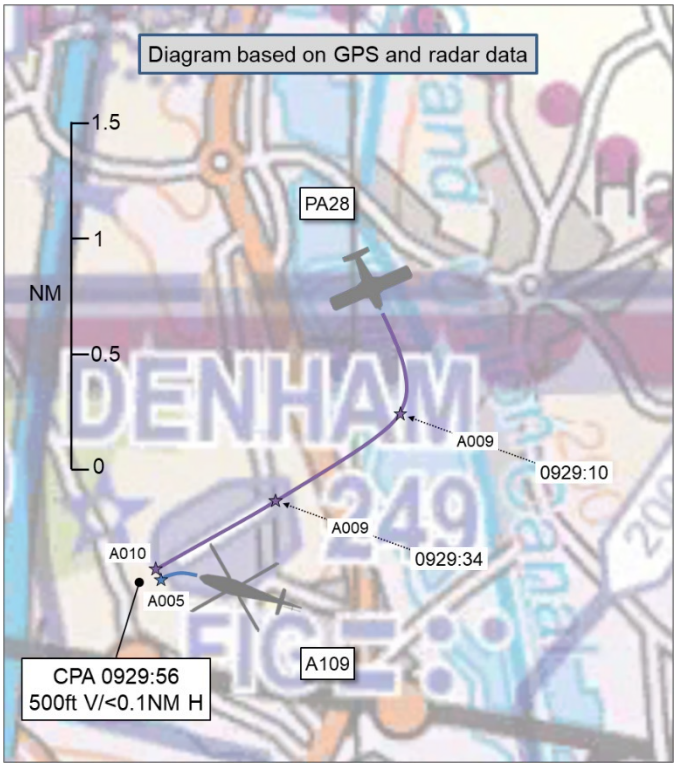
AIRPROX REPORT No 2024069

Date: 30 Apr 2024 Time: 0930Z Position: 5135N 00031W Location: Denham ATZ

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	A109	PA28
Operator	Civ Comm	Civ FW
Airspace	Denham ATZ	Denham ATZ
Class	D	D
Rules	VFR	VFR
Service	AGCS	Establishing RCS
Provider	Denham Radio	Heathrow SVFR
Altitude/FL	500ft	1000ft
Transponder	A, C, S	A, C, S
Reported		
Colours	Grey	White, blue, red
Lighting	Position, anti-col, strobe, landing	Landing, strobes, beacon
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	800ft	1000ft
Altimeter	QNH (1012hPa)	QNH (1012hPa)
Heading	240°	240°
Speed	80kt	95kt
ACAS/TAS	TAS	PilotAware
Alert	None	None
Separation at CPA		
Reported	100ft V/100m H	"*not seen*"
Recorded	500ft V/<0.1NM H	



THE A109 PILOT reports that they called Denham Radio for departure and were advised to take-off at their discretion with no circuit traffic to affect. After looking up the approach track to RW24, and with no traffic sighted, a standard departure was flown. On passing around 600ft, Denham Radio called to let them know that there was traffic directly above them on runway track that had just passed through the ATZ and [the pilot had] not been talking to Denham.

Looking directly up through the canopy, [the pilot of the A109] saw the bottom of a low-winged piston aircraft [the PA28]. They stopped their climb immediately, slowed slightly and initially made a gentle left turn. After a few seconds, the [pilot of the PA28] had overtaken them and they continued a gentle climb turning to the right past the tail of the [PA28].

Thanks to the quick call from Denham 'Tower' they saw the hazard in enough time to keep separation, however, they believe if the controller [sic] hadn't intervened then the risk of collision was extremely high.

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

THE PA28 PILOT reports that, prior to departure from Denham for their flight [southbound], they contacted Heathrow Radar on 125.625MHz to request a zone transit, VFR, routeing Denham-Burnham-Ascot-Thorpe and then to the Byfleet Bridge VRP where they would leave controlled airspace. They were given a squawk code and asked to contact Heathrow Radar again "when released from Denham". They switched back to Denham Radio and advised that they were ready for departure and that they would change frequency to Heathrow Radar immediately afterwards. At that point, they anticipated that they would be given a clearance to transit controlled airspace after contacting Heathrow Radar for the second time (as had happened when they had flown this route previously with an instructor). They then

departed from RW24 at Denham just after 0925 and, within 30sec of becoming airborne, they advised the radio operator that they would change frequency.

The Heathrow Radar frequency was occupied when they changed over so it was a few moments before they made their initial call in which they stated the squawk code that they had been given previously. At that point, they were approaching the position where they would usually make a right-turn to remain east of the A413 as part of the normal departure procedure for RW24. They were asked to squawk ident and, as they did so, they had gone past the position where they would normally turn. They therefore made this turn as they were yet to receive a clearance into controlled airspace. Their intentions were then to continue a right-hand circuit at 1000ft altitude during which time they had expected to receive clearance into controlled airspace or other instructions as necessary. In that way, they would still have been able to have flown directly from overhead the airfield to Burnham as per their requested routeing.

They didn't receive a further call from Heathrow Radar until they were late downwind when they were asked again to squawk ident. They did so again and then received clearance to transit controlled airspace on the route requested when they were on right-base. As they turned right to overfly the airfield, still at 1000ft, they did not see any fixed-wing or helicopter traffic manoeuvring on, or near, the grass or hard runways. They were not aware of the helicopter traffic climbing from the south side of the airfield as they passed over, nor of their proximity to it. After passing the stop-end of RW24, they were told by Heathrow Radar that they were under radar control and then proceeded with the zone transit.

[The pilot of the PA28] accepts that it was an error to have flown this circuit while awaiting clearance to transit controlled airspace without remaining on the Denham Radio frequency. Upon reflection, it's their opinion that a more appropriate course of action would have been to have continued northwards towards St. Giles VRP as per the standard departure procedure for RW24 while awaiting clearance, and perhaps discussing an amended clearance from a position north of Denham. They could also have advised Denham Radio before departure that they would have liked to have flown a circuit at 1000ft while awaiting clearance from Heathrow Radar. This would have reduced their workload during the climb-out and increased situational awareness for the radio operator and other pilots in the vicinity of Denham.

[The pilot of the PA28] is very thankful to the radio operator for advising the helicopter pilot that they were passing overhead and that a more serious outcome was avoided.

THE DENHAM AIR/GROUND RADIO OPERATOR reports that, at 0925, the [pilot of the] PA28 took off from Denham RW24 to route [southbound] through the zone via Burnham and Ascot. Immediately after take-off, [the pilot] requested a frequency change to Heathrow on 125.625MHz.

At 0929, [the pilot of the] A109 reported ready for departure. They passed the QNH (1012hPa) and RW24. [The pilot] requested a departure from the south-side and they passed the wind (170°/13kt).

As [the pilot of the A109] started their departure, [the Denham AGO] heard a piston-engine plane above the Tower. [The pilot of the A109] was in a climb over the boundary fence near the RW06 threshold climbing to 1000ft QNH. It was at that time they spotted [the PA28] at approximately 1000ft westbound over the RW06 threshold. They immediately passed Traffic Information to [the pilot of the A109] who took avoiding action to the left and stopped their climb. [The pilot of the A109] then reported visual with [the PA28] and turned onto north, below and behind. The pilot of [the A109] then reported that they would be filing an Airprox.

They surmise that [the pilot of the PA28] had carried out a circuit within the Denham ATZ due to a delay when working Heathrow Special.

The AGO perceived the severity of the incident as 'High'.

THE HEATHROW SVFR CONTROLLER reports that they were on duty as the Heathrow SVFR controller mentoring a trainee. [The pilot of the PA28] called to pre-note a zone transit request from the ground at Denham and the pilot was given a squawk of 7031 and told to call when airborne remaining

in the Denham ATZ.[1] Northolt took control of their airspace before [the pilot of the PA28] made contact again. Since the flight had then to be coordinated with Northolt, a zone clearance was not immediately available but one was issued as soon as coordination had been effected and when it was possible to have done so.

Pilots are responsible for their own separation whilst within the Local Flying Areas.

Factual Background

The entry for Denham in the AIP provides the following departure procedures (EGLD AD 2.22 Flight Procedures, Section 4 Departures):

a. After takeoff maintain runway heading, turn onto crosswind and climb to circuit altitude 1000 FT AMSL.
b. Extend crosswind leg towards the appropriate VRP.
c. Pilots in receipt of a clearance from Heathrow Radar or Northolt Approach may deviate in accordance with their clearance.

The weather at Northolt was recorded as follows:

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METAR EGWU 300920Z 18013KT 9999 FEW034 16/07 Q1012 NOSIG RMK BLU BLU
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Analysis and Investigation

NATS SAFETY INVESTIGATIONS

Summary

The pilot of [the PA28] was issued with squawk 7031 by the Heathrow SVFR controller-under-training, whilst on the ground at Denham. [The pilot of the PA28] departed Denham and, after being identified, was given a VFR zone crossing clearance. They subsequently flew through the climb-out of RW24 and into proximity of [the A109 pilot] who had just departed from Denham. As per detailed Denham procedure, 'Pilots of aircraft flying within the LFA are responsible for providing their own separation from other aircraft.'

Description and Investigation

Information available to the investigation included; CA4114 from the Heathrow Special VFR controller OJTI; radar and RT recordings; PA28 pilot's narrative report.

The pilot of [the PA28] called the London Radar frequency at 0920:23 on the ground at Denham and requested a VFR zone transit via Burnham, then Ascot, to land at [their destination]. The Heathrow SVFR controller-under-training (LL SVFR) issued the pilot with squawk 7031 and instructions to call back when released by Denham. The Northolt Radar controller telephoned the LL SVFR controller at 0923:46 to take control of the Northolt Radar Manoeuvring Area (RMA).

[The pilot of the PA28] was observed on NODE radar to depart from RW24 at Denham on squawk 7031 and commence a right-hand circuit. The pilot called-back on (LL SVFR) frequency at 0926:30. The LL SVFR controller contacted the Northolt Radar controller at 0926:42 and coordinated [the PA28 pilot] through the Northolt RMA, to remain on frequency with the LL SVFR controller. The LL SVFR controller issued the pilot of [the PA28] with QNH 1012hPa at 0926:50 and instructed the pilot to squawk ident and report their level. The pilot reported their altitude as 1000ft on QNH 1012hPa.

The LL SVFR controller cleared the pilot of [the PA28] to transit the zone as per their route request, not above altitude 1200ft VFR at 0928:40, which was read-back correctly by the pilot (Figure 1).

[1] A review of the RT transcript revealed that the Heathrow SVFR controller had not instructed the pilot of the PA28 to remain in the Denham ATZ.

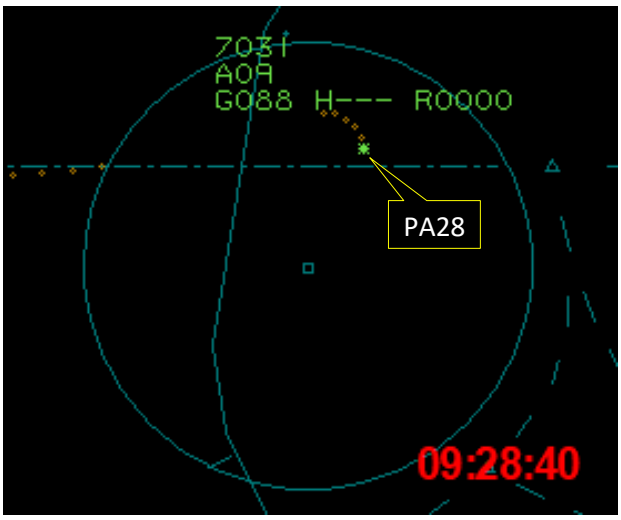


Figure 1 – 0928:40

Note: No Air Traffic Service was issued by, or agreed with, the LL SVFR controller to the pilot of [the PA28] at that time.

UK AIP EGLD AD 2.22 Flight Procedures 5 Local Flying Area (LFA) b. detailed:

Pilots of aircraft flying within the LFA are responsible for providing their own separation from other aircraft.

[The pilot of the] AW109 departed Denham displaying Mode A 7000 (VFR conspicuity) and was first displayed on the NODE multi-track radar at 0929:50. The Closest Point of Approach was recorded as 0.0NM and 500ft (Figure 2).

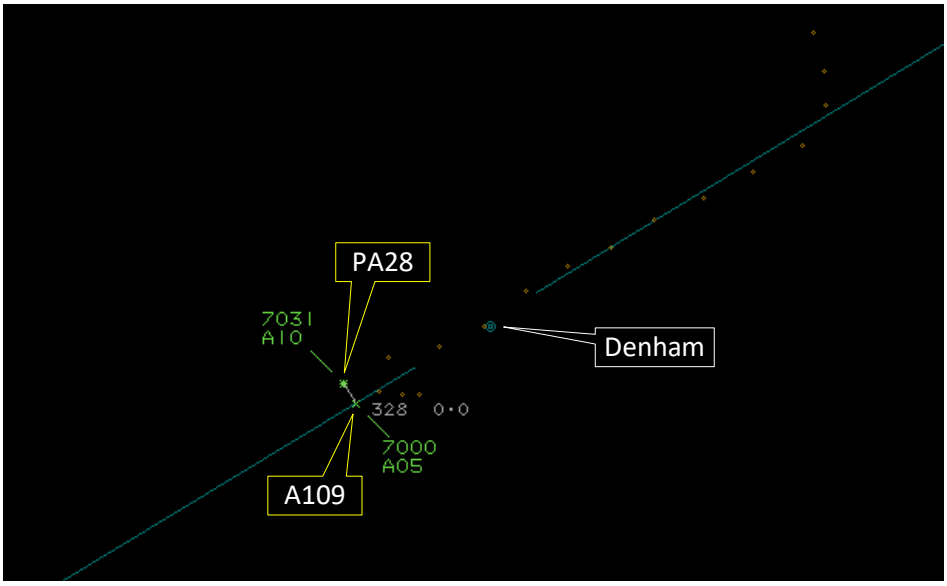


Figure 2 – CPA at 0929:56

The conflict was not observed by the LL SVFR sector team at the time of the event and they were not responsible for effecting any separation with the pending departure of [the A109]. The pilot of [the PA28] was subsequently issued a Radar Control Service at 0930:07.

UKAB Secretariat

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.[2] An aircraft operated on or in the vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in

[2] (UK) SERA.3205 Proximity.

operation.[3] The commander of an aircraft flying within the aerodrome traffic zone of an aerodrome must cause a continuous watch to be maintained on the appropriate radio frequency notified for communications at the aerodrome.[4]

Summary

An Airprox was reported when an A109 and a PA28 flew into proximity in the Denham ATZ at 0930Z on Tuesday 30th April 2024. Both pilots were operating under VFR in VMC. The A109 pilot had been in receipt of an AGCS from Denham Radio and the PA28 pilot had been establishing an RCS from Heathrow SVFR.

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 controller and from the AGO 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 PA28. Members noted that, whilst on the ground at Denham, they had contacted the Heathrow SVFR controller and had advised them of their intended zone crossing. They had then re-tuned their radio to the Denham Radio frequency to advise the Denham AGO of the same and had subsequently departed from RW24. Members agreed that it had been unfortunate that, having left the Denham Radio frequency and having re-tuned their radio to the Heathrow Radar frequency, the pilot of the PA28 had not had an opportunity to have transmitted their request for a clearance. Members were in agreement that the pilot of the PA28 had had to consider the unfolding situation carefully and to have adapted their plan accordingly. It was noted that the pilot of the PA28 had conducted a similar flight previously and members felt some sympathy that they had encountered a somewhat challenging situation, this time unaided by their instructor. Some members wondered whether the instructor had briefed the PA28 pilot adequately for such a scenario.

Members noted that, whilst they had waited for an opportunity to transmit their request for a zone-crossing clearance, the pilot of the PA28 had elected to enter the circuit pattern for RW24 at Denham. However, (and surmising that the PA28 had not been fitted with a dual-watch radio) members noted that they had not re-tuned their radio back to the Denham Radio frequency. Members agreed that the pilot of the PA28 had appeared to have focussed their attention on monitoring the Heathrow Radar frequency for a gap in the transmissions to such an extent that it had distracted them from the formulation of an alternative plan. Members were keen to point out that an aircraft in the circuit at Denham whose pilot had not been on the Denham Radio frequency had created a potentially dangerous situation. As such, members agreed that the pilot of the PA28 had not adapted their dynamic plan sufficiently to meet the needs of the situation (**CF4**) and had not executed their departure from Denham in accordance with the published procedure (**CF3**). It was further agreed that the pilot of the PA28 had not adequately communicated their intentions to the Denham AGO (**CF2**) and, consequently, had not adhered to the regulation to have maintained a 'continuous watch' whilst operating in the ATZ (**CF1**).

Notwithstanding, members wished to commend the pilot of the PA28 for their open and honest report and for having reflected on the incident in great depth. Members applauded the inclusion in their report of a list of the actions that they believe would have been more appropriate for the situation that they had encountered. Members agreed with their suggestions which would have provided situational awareness for the Denham AGO, the pilot of the A109 and for any other pilots tuned to the Denham frequency in the area.

In consideration of the EC equipment fitted to the PA28, members agreed that it would have been expected to have detected the presence of the A109 but the PA28 pilot reported that it had not alerted (**CF6**). Members agreed that the pilot of the PA28 had not had situational awareness of the presence

[3] (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.
[4] The Rules of the Air Regulations 2015 Schedule 1, Section 3, Paragraph 11, 6(a) Flight within aerodrome traffic zones.

of the A109 (**CF5**), had not sighted it (**CF7**) and, therefore, had not been aware that it had been climbing towards them from below.

Members next considered the actions of the Heathrow SVFR controller, and pondered the PA28 pilot's recall that they had been asked to contact Heathrow Radar "*when released from Denham*". Members agreed that the Heathrow SVFR controller would have known that the Denham AGO could not have issued an instruction or clearance that might have suggested that the PA28 pilot was 'released' in any capacity. Members were in agreement that it was reasonable for a pilot to have understood the phrase 'when released from Denham' to have meant 'when having left the Denham Radio frequency'. Notwithstanding, members noted that the Heathrow SVFR controller had subsequently passed a clearance for the pilot of the PA28 to enter the London CTR approximately 1min before CPA.

Members next turned their attention to the actions of the pilot of the A109. It was agreed that, without a common frequency in use between the pilots, and in the absence of any indication of proximate traffic from their TAS which would have been expected to have detected the PA28 (**CF6**), the pilot of the A109 had not had situational awareness of the presence of the PA28 at the moment that they had initiated their departure. Members noted that the pilot of the A109 had not sighted the PA28 which, at that moment, had been on the final leg for RW24 (although had not descended towards the runway). Some members suggested that the pilot of the A109 had not sighted the PA28 because it had, perhaps, not been in a position that they would have normally expected to have acquired conflicting traffic when looking for aircraft approaching RW24. Notwithstanding, the pilot of the A109 had received an alert from the Denham AGO on the position of the PA28 above them. It was therefore agreed by members that the pilot of the A109 had acquired late situational awareness of the PA28 (**CF5**). Members appreciated that the proximity of the PA28 had caused them some concern (**CF8**) and agreed that they had reacted quickly to have stopped their climb and to have positioned to have increased the separation between the aircraft.

Turning their attention to the actions of the Denham AGO, members agreed that they were to be commended for having alerted the pilot of the A109 to the relative position of the PA28, an intervention that may have prevented a far more serious outcome. Agreeing that there had been little else that the Denham AGO could have done to have lessened the severity of the incident, members summarised their thoughts. Members agreed that the pilot of the PA28 had not adapted their plan to meet the needs of the situation and had not relayed their intentions to the Denham AGO. Consequently, members agreed that safety margins had been eroded. However, it had been the quick reaction of the Denham AGO, and the last-minute avoiding action taken by the pilot of the A109 that had averted a risk of collision. As such, the Board assigned Risk Category C to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024069			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Flight Elements			
	• Regulations, Processes, Procedures and Compliance			
1	Human Factors	• Use of policy/Procedures	Events involving the use of the relevant policy or procedures by flight crew	Regulations and/or procedures not complied with
	• Tactical Planning and Execution			
2	Human Factors	• Accuracy of Communication	Events involving flight crew using inaccurate communication - wrong or incomplete information provided	Ineffective communication of intentions
3	Human Factors	• Action Performed Incorrectly	Events involving flight crew performing the selected action incorrectly	Incorrect or ineffective execution
4	Human Factors	• Insufficient Decision/Plan	Events involving flight crew not making a sufficiently detailed decision or plan to meet the needs of the situation	Inadequate plan adaption
	• Situational Awareness of the Conflicting Aircraft and Action			

5	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			
6	Human Factors	• Response to Warning System	An event involving the incorrect response of flight crew following the operation of an aircraft warning system	CWS misinterpreted, not optimally actioned or CWS alert expected but none reported
	• See and Avoid			
7	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[5]

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

Flight Elements:

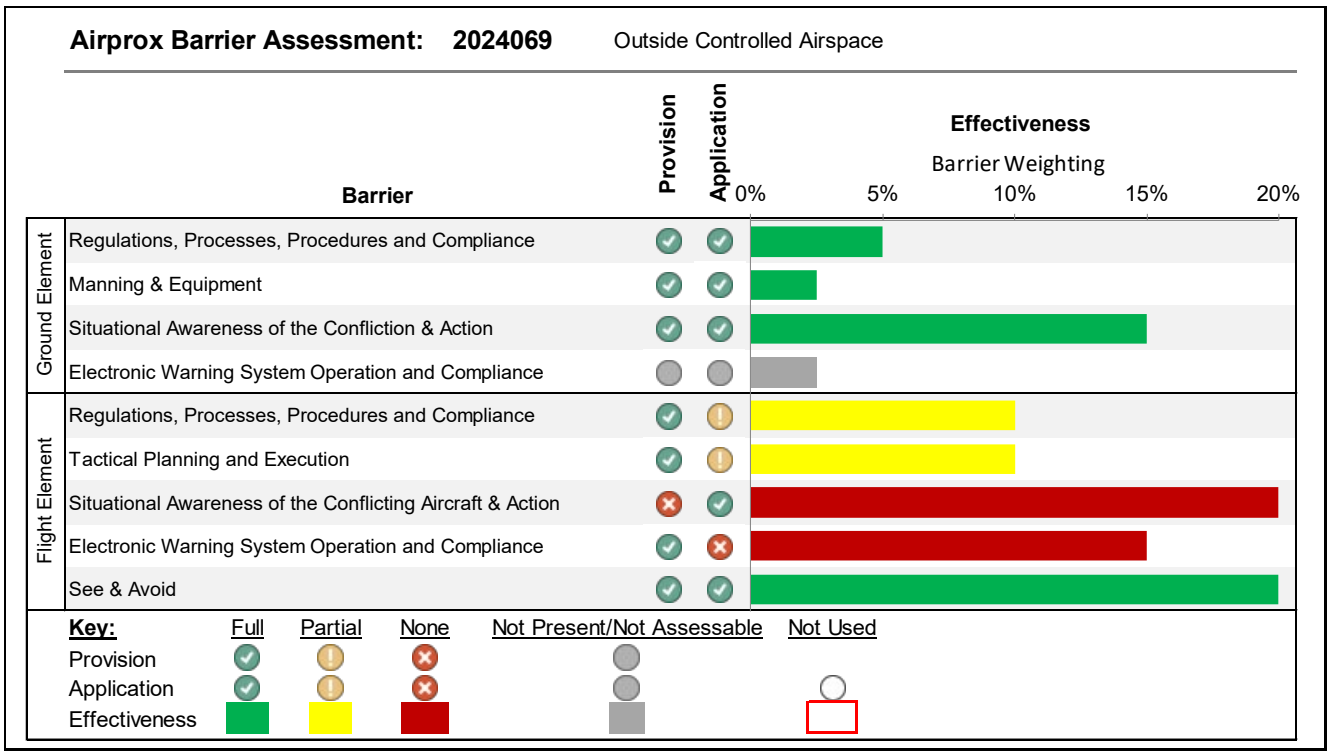
Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because the pilot of the PA28 had not complied with the departure procedure as provided in the entry for Denham in the AIP.

Tactical Planning and Execution was assessed as **partially effective** because the pilot of the PA28 had not adapted their plan for their departure from Denham and entry into the London CTR.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the pilot of the PA28 had not had situational awareness of the presence of the A109.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the EC equipment fitted to each aircraft would have been expected to have detected the presence of the other aircraft but no alert was reported by either pilot.

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


Airprox Barrier Assessment: 2024069
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 Confliction & 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:
Full
Partial
None
Not Present/Not Assessable
Not Used
Provision
Application
Effectiveness