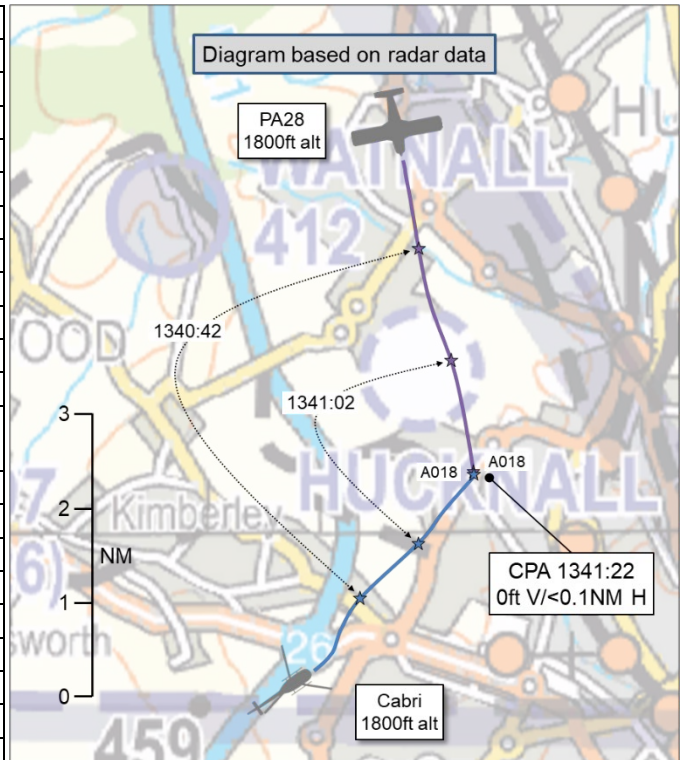


**AIRPROX REPORT No 2024231**

Date: 04 Sep 2024 Time: 1341Z Position: 5300N 00113W Location: 2.5NM NW Nottingham city

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	Cabri	PA28
Operator	Civ Helo	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Basic
Provider	East Mids Radar	East Mids Radar
Altitude/FL	1800ft	1800ft
Transponder	A, C, S	A, C, S+
<b>Reported</b>		
Colours	Grey	White, blue
Lighting	Landing, taxi, nav, strobes	Nav, HISL, landing
Conditions	VMC	VMC
Visibility	NR	>10km
Altitude/FL	1800ft	1747ft
Altimeter	NR	QNH
Heading	030°	170°
Speed	80kt	105kt
ACAS/TAS	Not fitted	TAS
Alert	N/A	None
<b>Separation at CPA</b>		
Reported	51ft V/51m H	0ft V/50m H
Recorded	0ft V/<0.1NM H	



**THE CABRI PILOT** reports that they were following their planned route and had requested a Basic Service and an ATZ transit from East Midlands Radar. To their knowledge, no Traffic Information was passed. An aircraft was spotted in their 11 o'clock at the same level, travelling left-to-right from their perspective. They weren't aware of the other pilot's calls and have a suspicion they were not on frequency. The aircraft didn't change path and they assumed that the pilot hadn't seen them. They took avoiding action by turning left sharply and dropping the collective. Without action, they believe there was a potential for a close-miss or collision. Although they don't consider the action as dire as an emergency, it was closer than they would have liked. They had about 2-3sec to react.

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

**THE PA28 PILOT** reports that they were on a Basic Service and conducting a trial lesson (Exercise 3 - air experience flight) which required changes in heading and height while demonstrating the basic functions of the controls. That phase had been completed. The radio was busy and the approach was occupied with IFR arrivals so they intended to orbit at Trowell VRP whilst awaiting a clearance to enter the CTR. Shortly after passing Hucknall they could hear various calls to other GA pilots including a helicopter in the vicinity. This is not unusual as transiting traffic is usually directed through the Long Eaton to Shepshed corridor so they were looking-out as usual and the [navigation system] was displaying the traffic alert screen set at 6NM (this has the appearance of a radar screen with symbology similar to a TCAS). There were no alerts from the traffic avoidance system installed in the aircraft, which would usually give an aural alert with the position of the conflicting traffic in the headset and displayed visually on the [navigation] screen in yellow with range and direction. The system relies on an ADS-B environment. They are aware of the limitations of a system based on ADS-B transmissions in the GA environment and therefore exercise increased vigilance approaching the entry points. On this occasion, they did not see the helicopter until it was close, just off the right of the nose, and it appeared to be

passing to the right. The entire encounter was over in 3 to 4sec. They could see it was a Cabri, either in grey or black, but they couldn't see the registration. They made a reflexive slight alteration of heading to the left, however, this was not necessary as the helicopter had passed by the right in a very short period of time. The flight continued to the orbit at Trowell VRP and then into the CTR. They do not recall specific radio transmissions regarding traffic on that flight.

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

**THE EAST MIDLANDS CONTROLLER** reports that, one week after the reported Airprox, East Midlands ATC was notified by UKAB<sup>1</sup> of a possible Airprox between [the Cabri] and [the PA28]. The Airprox occurred in the vicinity of Bulwell, with both pilots in receipt of a Basic Service only from East Midlands Radar.

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

## Factual Background

The weather at East Midlands Airport was recorded as follows:

METAR EGNX 041350Z 31005KT 280V010 9999 FEW049 14/07 Q1018

## Analysis and Investigation

### CAA ATSI

Traffic levels were assessed by the unit to have been moderate to high with the radar controller involved with vectoring IFR aircraft and the provision of a Traffic Service to two other aircraft. The controller was providing a Basic Service to these and other pilots, but they were not required to continuously monitor the aircraft and no Traffic Information was passed. ATSI noted the use of incorrect phraseology 'not cleared to enter controlled airspace', but this was not contributory to the Airprox.

### East Midlands Airport Unit Investigation

#### Timeline:

- 1317:25 Freecall received by RAD from the pilot of the Cabri to request a Basic Service and zone transit. RAD issued a squawk of 4554 and asked the Cabri pilot to standby.
- 1320:08 RAD requested the Cabri pilot to pass their message.  
The Cabri pilot passed their details and requested to route through the Shepshed to Long Eaton lanes.
- 1320:30 RAD: "[Cabri C/S] roger identified, Basic Service only, QNH 1018 report at Markfield, not cleared to enter controlled airspace".
- 1322:20 RAD rang TWR and co-ordinated a transit clearance for the Cabri pilot east of the M1. TWR requested they be transferred to 124.005MHz.
- 1322:45 CTR transit clearance was passed to the Cabri pilot which was read back correctly.
- 1325:30 RAD instructed the Cabri pilot to contact TWR. Read back correctly.
- 1329:55 The PA28 pilot called RAD leaving the CTR and requested a Basic Service. RAD issued a Basic Service. The PA28 pilot read back Basic Service.
- 1334:20 [Cabri C/S]: "East Midlands radar, [Cabri C/S]".  
RAD reply: "[Cabri C/S] you'll be leaving controlled airspace in a mile and a half, it'll be Basic Service as you leave".
- 1334:30 The Cabri pilot replied: "Basic Service outside of controlled airspace, helicopter [Cabri C/S]".

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<sup>1</sup> The pilot of the Cabri informed UKAB of the Airprox on 11<sup>th</sup> September, five days after the occurrence.

- 1335:50 RAD: "[Cabri C/S] that's you leaving controlled airspace now, Basic Service". The pilot of the Cabri read back Basic Service. ([Cabri C/S] was indicating A012, [PA28 C/S] indicated A022)
- 1339:00 RAD conducted an overtake/descent manoeuvre with [two inbound aircraft].
- 1339:30 [Cabri C/S] indicated A018, [PA28 C/S] indicated A018. They were on conflicting tracks towards Hucknall (Figure 1).



Figure 1 - 1339:30

- 1340:35 [Cabri C/S] indicated A019, [PA28 C/S] indicated A018 (Figure 2).



Figure 2 – 1340:35

- 1340:58 [Cabri C/S] indicated A019, [PA28 C/S] indicated A018.
- 1341:18 The two contacts merged less than a mile south of Hucknall, with both indicating A018.
- 1341:30 [Cabri C/S] Mode C indicated A016.

Findings: Both pilots were in receipt of a Basic Service at the time of the Airprox. EMA Radar was busy with other tasks at the time, and no Traffic Information was passed to either pilot. In accordance with the UK FIS, whilst operating under a Basic Service, ATC is not required to pass surveillance-based Traffic Information to pilots.

The ATCO concerned was shown the radar recording, and reported that they had no recollection of either aircraft passing as closely as they did to one another.

Initial investigation summary: [The Cabri] and [the PA28] merged with no horizontal or vertical separation discernible on the radar recordings. Both were on local EMA squawks with callsigns and

verified mode C displayed. No Traffic Information was passed by RAD. Neither [pilot] mentioned "Airprox".

[The pilot of the PA28] had requested, and was being provided with, a Basic Service. [The pilot of the Cabri] had requested a Basic Service, and had been placed under this service on three occasions which were all acknowledged.

[The PA28] was in the 11 o'clock position from [the Cabri]. [The Cabri] was in the 1 o'clock position from [the PA28].

At that time of day with FEW049 reported at EMA, [the pilot of the PA28] may have experienced glare from the sun, but pilots reports had not been received. The Cabri G2 is a small, sleek design with a particularly small frontal aspect which could have made visual sighting difficult. Similarly, the frontal aspect of a PA28 is small. Both pilots had routed over Hucknall disused airfield. If pilots reports had been received, the opportunity could have been taken to have asked if they were looking at the disused airfield at the time of the Airprox.

Prior to this conflict, RAD's workload could be assessed as moderate to high. DIR had been used very recently. RAD and LARS were bandboxed. As the conflict approached, workload was assessed as having reduced only slightly. Two aircraft were under a Traffic Service, and the RAD ATCO was performing a (well-judged) overtake/descent through manoeuvre between [two inbound aircraft]. Other aircraft were receiving Basic Services.

Conclusion: Airprox reported to EMA ATC by UKAB, but not directly at the time. The two aircraft did pass extremely closely to one another; however, the controller was busy at the time undertaking other tasks, and did not recall the aircraft becoming quite as close as they did. Under a Basic Service, ATC is not required to pass surveillance-based Traffic Information and, in this case, having not noticed the situation as they were busy undertaking other tasks, they did not pass any Traffic Information.

### UKAB Secretariat

An analysis of the NATS radar replay was undertaken and both aircraft could be positively identified from Mode S data (Figure 3). Both aircraft were depicted as flying at Flight Levels. A suitable correction was made to determine their altitudes. The diagram was constructed and the separation at CPA determined from the radar data.

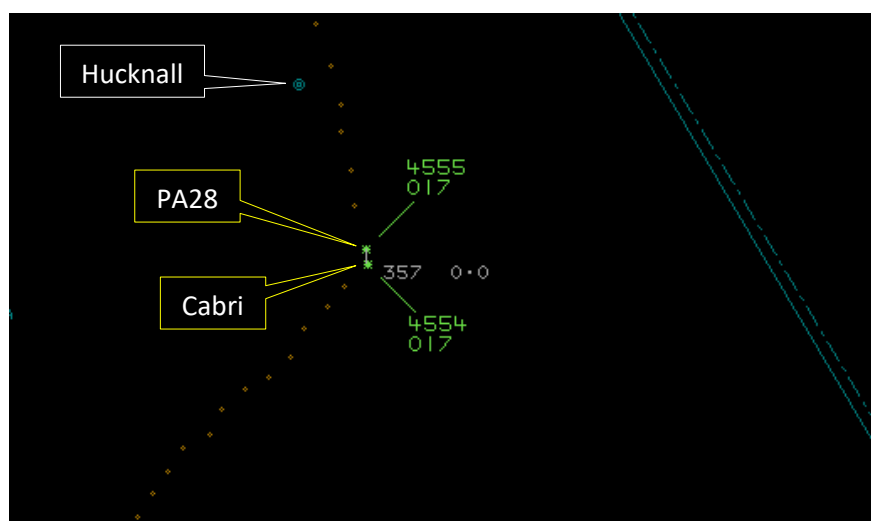


Figure 3 - CPA at 1341:22

The Cabri 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.<sup>2</sup> If the incident geometry is considered as converging then the PA28 pilot was required to give way to the Cabri.<sup>3</sup>

## Summary

An Airprox was reported when a Cabri and a PA28 flew into proximity 2.5NM north-west of Nottingham city at 1341Z on Wednesday 4<sup>th</sup> September 2024. Both pilots were operating under VFR in VMC and in receipt of a Basic Service from East Midlands Radar.

## **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 Cabri and noted that they had requested a Basic Service and a zone transit from the East Midlands controller. Members recalled the wording in CAP774 regarding a Basic Service that:

'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.'

In consideration of the congested airspace of their flight, members were keen to suggest that it would have been prudent for the pilot of the Cabri (and indeed the pilot of the PA28) to have been in receipt of a Traffic Service (**CF2**) particularly as East Midlands is a LARS provider.

Members noted that the Cabri had not been fitted with any form of additional EC device which, on this occasion, may have provided an alert to the presence of the PA28 aiding the Cabri pilot's situational awareness. Additionally, and although both pilots had been in receipt of a service from the East Midlands controller concurrently, members noted that the pilot of the Cabri reported that they had not heard any calls from the pilot of the PA28. Members therefore agreed that the pilot of the Cabri had not had situational awareness of the presence of the PA28 (**CF3**) until it had been visually acquired. In consideration of the avoiding action taken by the pilot of the Cabri, some members commented that having had '2 to 3sec to react' to have avoided a possible collision had indicated a far more urgent situation than the narrative report by the Cabri pilot had suggested. Members agreed that the PA28 had been visually acquired late (**CF5**).

Turning their attention to the actions of the pilot of the PA28, members noted that they had also been in receipt of a Basic Service from the East Midlands controller. Their previous thoughts on the most prudent choice of ATS were reiterated and members agreed that the pilot of the PA28 may have been better served if they had been in receipt of a Traffic Service (**CF2**). Members noted that the EC device fitted to the PA28 would not have been expected to have detected the presence of the Cabri (**CF4**). Although the pilot of the PA28 had recalled having heard some calls on the East Midlands frequency regarding a helicopter, members agreed that there had not been sufficient information available, or assimilated, and concluded that the pilot of the PA28 had effectively had no situational awareness of the presence of the Cabri (**CF3**). Members noted that, upon visual acquisition of the Cabri, the pilot of the PA28 had made a 'reflexive' alteration of heading in the seconds before it had passed and therefore agreed that they had sighted the Cabri late (**CF5**).

The Board next considered the actions of the East Midlands controller and noted that both pilots had requested a Basic Service and that that had been provided accordingly. It was agreed that they had not

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<sup>2</sup> (UK) SERA.3205 Proximity.

<sup>3</sup> (UK) SERA.3210 Right-of-way (c)(2) Converging.

been required to have monitored the flights of the PA28 or Cabri under the terms of a Basic Service (CF1). Nevertheless, some members suggested that the East Midlands controller had had situational awareness of both aircraft and that there may have been an opportunity to have passed Traffic Information to each pilot. However, it was agreed that they had not been required to have done so and that, in the moments leading up to CPA, their attention had been diverted to higher priority traffic.

Concluding their discussion, members were in agreement that neither pilot had had situational awareness of the presence of the other aircraft and that both pilots had visually acquired the other aircraft late. Members agreed that the proximity of the aircraft resulted in safety margins being much reduced below the norm, but noted that both pilots had taken avoiding action, albeit with just seconds to spare. Members were in agreement that there had been a risk of collision (CF6) and assigned Risk Category B to this event.

## **PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**

### Contributory Factors:

2024231				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
<b>Ground Elements</b>				
<b>• Situational Awareness and Action</b>				
1	Contextual	• ANS Flight Information Provision	Provision of ANS flight information	The ATCO/FISO was not required to monitor the flight under a Basic Service
<b>Flight Elements</b>				
<b>• Tactical Planning and Execution</b>				
2	Human Factors	• Communications by Flight Crew with ANS	An event related to the communications between the flight crew and the air navigation service.	Pilot did not request appropriate ATS service or communicate with appropriate provider
<b>• Situational Awareness of the Conflicting Aircraft and Action</b>				
3	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
<b>• Electronic Warning System Operation and Compliance</b>				
4	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
<b>• See and Avoid</b>				
5	Human Factors	• Identification/ Recognition	Events involving flight crew not fully identifying or recognising the reality of a situation	Late sighting by one or both pilots
<b>• Outcome Events</b>				
6	Contextual	• Near Airborne Collision with Aircraft	An event involving a near collision by an aircraft with an aircraft, balloon, dirigible or other piloted air vehicles	

Degree of Risk: B.

### Safety Barrier Assessment<sup>4</sup>

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

### **Ground Elements:**

<sup>4</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

**Situational Awareness of the Confliction and Action** were assessed as **not used** because the East Midlands Radar controller had not been required to have monitored either flight under the terms of a Basic Service.

**Flight Elements:**

**Tactical Planning and Execution** was assessed as **partially effective** because it may have prudent for both pilots to have been in receipt of a Traffic Service from the East Midlands Radar controller.

**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.

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

**See and Avoid** were assessed as **partially effective** because both pilots had visually acquired the other aircraft late.

