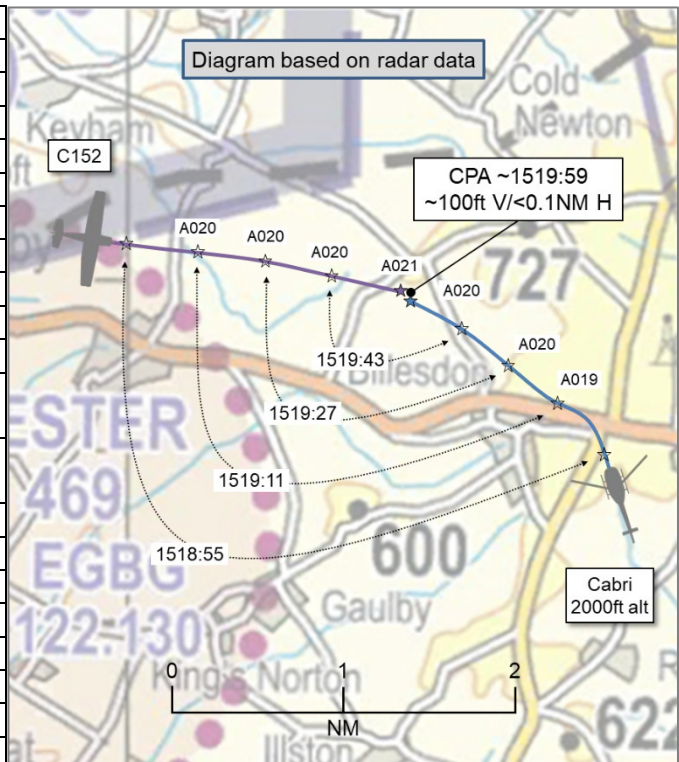


AIRPROX REPORT No 2022220

Date: 21 Sep 2022 Time: 1520Z Position: 5238N 00057W Location: 3.5NM WNW Leicester Airfield

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

| Recorded | Aircraft 1 | Aircraft 2 |
|--------------------------|----------------------------|----------------------------|
| Aircraft | Cabri G2 | C152 |
| Operator | Civ Helo | Civ FW |
| Airspace | London FIR | London FIR |
| Class | G | G |
| Rules | VFR | VFR |
| Service | AGCS | Listening Out |
| Provider | Leicester Radio | Leicester Radio |
| Altitude/FL | 2000ft | 2100ft |
| Transponder | A, C, S | A, C, S |
| Reported | | |
| Colours | Grey, Yellow, White | White |
| Lighting | Landing, Taxy, Nav, Strobe | Landing, Taxy, Nav, Beacon |
| Conditions | VMC | VMC |
| Visibility | >10km | >10km |
| Altitude/FL | 1700ft | 2000ft |
| Altimeter | QNH (1024hPa) | QNH (NK hPa) |
| Heading | 304° | 090° |
| Speed | 80kt | 90kt |
| ACAS/TAS | PilotAware | Not fitted |
| Alert | None | N/A |
| Separation at CPA | | |
| Reported | 0ft V/60m H | 100ft V/1NM H |
| Recorded | ~100ft V/<0.1NM H | |



THE CABRI G2 PILOT reports that they were a solo student on a navigation exercise. They tracked parallel to the Roman road until they reached the yellow road which they followed north to Billesdon crossroads. At 1619:00, they passed over Billesdon crossroads and were set up for their track-crawl on a track of 304° from the crossroads to Swithland reservoir. They ensured their route was clear of Leicester ATZ to avoid both fixed-wing circuits. Around the vicinity of Keyham, they were looking to their left (they could not remember if it was down at their map on the passenger seat, at their instruments, or out of the side window towards Leicester city) but, when they looked forward, a white, high wing, Cessna aeroplane was in front of the nose at the same level and about 100m away. It flashed past their right-hand side. When it was alongside them, it was about 60m away and they read [some of] its registration, then it instantly left their sight. They were stunned and shocked by it and remembered to 'Aviate, Navigate, Communicate'. They kept a vigilant watch as they climbed to their cruise height and ensured that they didn't lose their position on the track. They were unsure of the radio protocol after having an Airprox, so decided they would ask when on the ground. They continued the navigation exercise as they felt that a change would have overloaded them, and it gave them time to calm down and focus on flying.

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

THE C152 PILOT reports that they were instructing a student in uncontrolled airspace near to Leicester Airfield. The student was manipulating the controls and flying a heading of 090° at 2000ft QNH when they both saw a helicopter coming in the opposite direction. When they spotted the helicopter, it was at the 1 o'clock position and slightly lower than themselves at a range of 1NM. They then promptly took control and descended in a left turn because, if they followed the "turn right" rule, it would have put them at greater risk. The helicopter did not alter course. They were in uncontrolled airspace and it was a good lesson to teach to their student to always maintain an active lookout.

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

THE LEICESTER AIR/GROUND OPERATOR did not respond to UKAB requests to submit a report.

Factual Background

The weather at Wittering was recorded as follows:

METAR EGXT 211520Z AUTO 22007KT 9999 OVC055/// 20/07 Q1023

Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and both aircraft were detected and identified using Mode S data. As reported by the Cabri pilot, their aircraft was observed to turn and commence a track toward Swithland reservoir at around 2000ft altitude. Similarly, the C152 pilot was also seen to have been maintaining an altitude of around 2000ft and routing toward the east. Measured from the radar at 1519:59, the aircraft were separated by 0.1NM horizontally and 100ft vertically, this was the time of radar CPA (Figure 1). On the next radar sweep, at 1520:03 the aircraft had passed and the horizontal separation was once again measured as 0.1NM, whilst the vertical separation had increased to 200ft (Figure 2). Therefore, actual CPA had occurred between radar sweeps and the separation was determined to have been less than 0.1NM and approximately 100ft vertically.

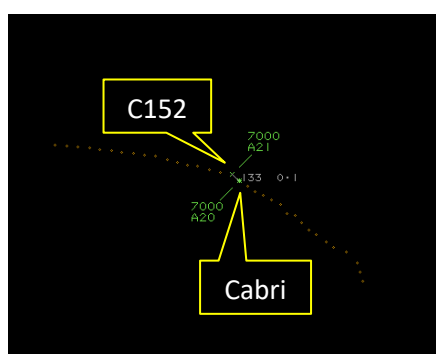


Figure 1 – Radar CPA

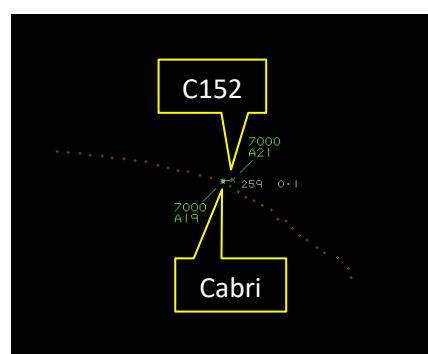


Figure 2 – 1520:03

The descending left turn described by the C152 pilot was not observed on the radar ahead of the Airprox however, a level, left turn of approximately 20° was recorded at or immediately after CPA, as seen in Figure 2.

The Cabri and C152 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 head-on or nearly so then both pilots were required to turn to the right.² If the incident geometry is considered as converging then the C152 pilot was required to give way to the Cabri.³ Nothing in (UK) SERA regulation shall relieve the pilot-in-command of an aircraft from the responsibility of taking such action, including collision avoidance manoeuvres based on resolution advisories provided by ACAS equipment, as will best avert collision.⁴

Summary

An Airprox was reported when a Cabri G2 and a C152 flew into proximity 3.5NM west-northwest of Leicester Airfield at 1520Z on Wednesday 21st September 2022. Both pilots were operating under VFR

¹ (UK) SERA.3205 Proximity.

² (UK) SERA.3210 Right-of-way (c)(1) Approaching head-on.

³ (UK) SERA.3210 Right-of-way (c)(2) Converging.

⁴ (UK) SERA.3201 General.

in VMC, the Cabri pilot in receipt of an AGCS from Leicester Radio and the C152 pilot not in receipt of an ATS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots and radar photographs/video recordings. 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 Cabri pilot, and a helicopter pilot member stated that there can be a lot of helicopter and other GA activity in that part of the country. Members discussed that, although the Cabri pilot had been in the vicinity of Leicester, there had been options available for a surveillance-based air traffic service – which should be considered – from providers such as East Midlands LARS, however, it was agreed that it had been reasonable for the Cabri pilot to have been in contact with Leicester Radio at the time. The Board was encouraged that the Cabri pilot, although a student, had been utilising EC equipment, however, although this equipment would have been expected to have alerted to the presence of the C152, no alert had been received (**CF2**). Having not received an EC alert, and as they had not had an avenue to get information regarding the presence of the C152 via the RT, members concluded that the Cabri pilot had not had any situational awareness regarding its presence (**CF1**). The Board agreed that, although the Cabri pilot had visually acquired the C152, this had been at a point when it had been too late for them to have taken any avoiding action which would have materially improved separation (**CF4**).

Next, members discussed the actions of the C152 pilot and agreed that, as they had not had any EC equipment available to them, and they did not report hearing the Cabri pilot on the Leicester Radio frequency, they would not have had any prior awareness of its presence (**CF1**). Members again discussed the availability of a surveillance-based ATS and whether obtaining one would have proven to have been more beneficial to the pilot, concluding that in this locality, Leicester Radio had been a reasonable choice, although there may have been benefit from making contact with them rather than just listening-out. The Board was encouraged that the C152 instructor had been effectively managing the flight and the lesson whilst maintaining an effective lookout, which had meant that, although it had been at a later than optimum time, they had become visual with the Cabri (**CF3**).

The Board then turned its attention to the ground element involved and expressed its disappointment that Leicester had declined the opportunity to contribute to the Airprox process by providing a report.

Finally, in assessing the risk of collision, the Board noted that the pilot of the Cabri had been carrying EC equipment which would have been expected to have issued an alert, however none had been issued. Members commented that the C152 pilot had become visual with the Cabri and had taken avoiding action, but that this had been at a later than optimum time and, although the Cabri pilot had seen the C152, it had been at a point too late to have allowed them to have taken avoiding action. Members agreed that, in this case, safety had not been assured and that there had been a risk of collision (**CF5**). Accordingly, the Board assigned a Risk Category B to this Airprox.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

| 2022220 | | | | |
|---|------------|--|---|---|
| CF | Factor | Description | ECCAIRS Amplification | UKAB Amplification |
| Flight Elements | | | | |
| • Situational Awareness of the Conflicting Aircraft and Action | | | | |
| 1 | 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 | | | | |

| | | | | |
|------------------|---------------|---|---|--|
| 2 | 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 | | | | |
| 3 | 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 |
| 4 | Human Factors | • Monitoring of Other Aircraft | Events involving flight crew not fully monitoring another aircraft | Non-sighting or effectively a non-sighting by one or both pilots |
| • Outcome Events | | | | |
| 5 | 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 Assessment⁵

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 **ineffective** because neither pilot had had any awareness of the presence of the other aircraft prior to sighting it.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because, although the EC equipment carried by the Cabri would have been expected to have alerted to the presence of the C152, no alert was reported by the pilot.

See and Avoid were assessed as **partially effective** because, although both pilots had become visual with the other aircraft, the pilot of the C152 had acquired the Cabri at a later than optimum point and, for the Cabri pilot, it had been at a point too late for them to have been able to take any effective avoiding action.

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: 2022220 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 | ■ | ■ | ■ | ■ | □ | | | |