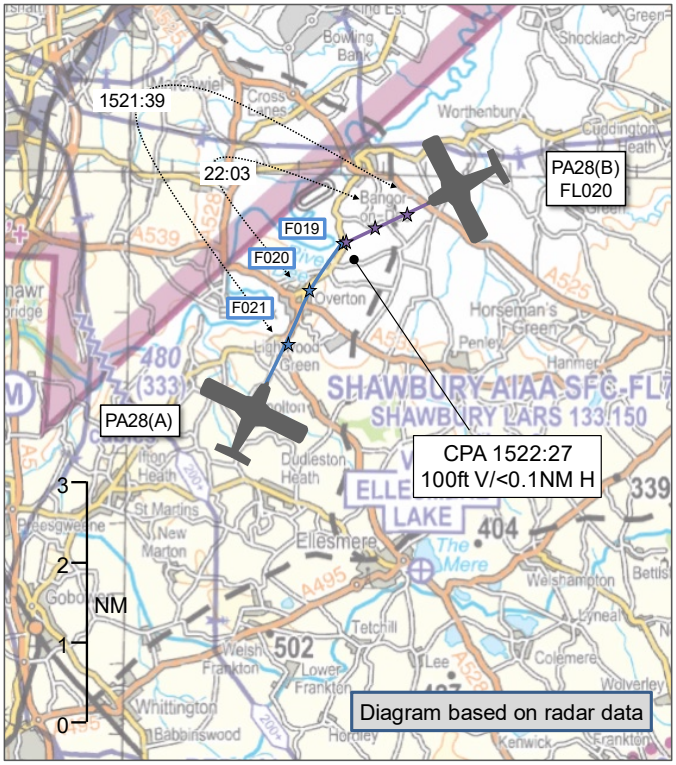
AIRPROX REPORT No 2024013

Date: 27 Jan 2024 Time: 1522Z Position: 5259N 00254W Location: 5NM SE Borras Quarry VRP

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28(A)	PA28(B)
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Traffic
Provider	Liverpool Radar	Hawarden
Altitude/FL	FL019	FL020
Transponder	A, C, S	A, C, S
Reported		
Colours	Red, White	White, Black, Brown
Lighting	Nav, Beacon	Strobes
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2000ft	2312ft
Altimeter	QNH	QNH (1027hPa)
Heading	020°	250°
Speed	110kt	80kt
ACAS/TAS	SkyEcho	Not fitted
Alert	None	N/A
Separation at CPA		
Reported	100ft V/<0.5NM H	Not Seen
Recorded	100ft V/<0.1NM H	



THE PA28(A) PILOT reports that they were conducting a straight-and-level exercise, with a student, at 2000ft and were keeping a lookout, whilst also concentrating on the student. They had just made contact with Liverpool Radar for a Basic Service after being with London Information for the exercise. Without any warning, the aircraft in question appeared out of nowhere, on what looked to be a converging path at a similar altitude. As this aircraft was on their right, and the other pilot didn't look to be taking any avoiding action, they took the decision to descend instead of the usual turn right as this was, they deemed, the safest form of action. In the descent they lost 500ft of altitude. The flight then continued as normal. After the flight, they looked back on ADS-B and the other aircraft appeared to be in a climb after conducting what may have been PFLs, which is why they believed that the other aircraft suddenly appeared and came from below them. The CWS in the aircraft had lost GPS signal at this stage so no alert was broadcasted. They believed the other pilot was in touch with Hawarden Radar, but they had chosen not to speak to Hawarden, as they were conducting a join at Liverpool.

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

THE PA28(B) PILOT reports that at the date and time in question they were undertaking a training flight with a student, Ex 9, medium level turns. They were in receipt of a Traffic Service from Hawarden Radar, as is their usual practice when undertaking training flights. Hawarden ATC called a number of aircraft to them throughout the flight, but they did not become visual with all of the contacts. The first they knew about the Airprox was when the [company] Head of Training advised that they had received a report of an Airprox involving [PA28(B) C/S], which had occurred whilst they were the Pilot in Command. Information supplied re: the aircraft heading, speed and altitude, have been supplied from the SkyDemon log.

THE LIVERPOOL CONTROLLER reports that they had subsequently been made aware of an Airprox report filed by the pilot of PA28(A) with another possible PA28, 20NM south of Liverpool airport. They

noted that they had not been able to view the Veristore [recording] of the incident. However, they recalled a pilot called for re-join from the south and, whilst gaining the flight information to write on the strip, and find the position of the aircraft, the pilot asked them to 'stand by'. They recalled that when the pilot re-called, they noticed there was an aircraft in its vicinity, but behind.

THE HAWARDEN CONTROLLER reports that this was a retrospective report filled at the request of the UKAB. An occurrence report was not filed previously as no mention of the incident was made at the time. PA28(B) pilot was being provided with a Traffic Service by Hawarden Radar, in the interest of providing an unbiased account they had not had sight of radar or RTF replays and, owing to the time elapsed, they had nothing further to add.

Factual Background

The weather at Hawarden was recorded as follows:

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METAR EGNR 271520Z 14008KT 9999 SCT024 09/04 Q1027=
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Analysis and Investigation

Occurrence Investigation

Liverpool Investigation

Portions of RT Transcript from Liverpool:

1521:51 PA28(A): Liverpool Radar [PA28(A) C/S], I've got information November, QNH 1027, 4 miles north west of Ellesmere Lake, 2300ft, request Basic Service.

1521:58 RAD: [PA28(A) C/S] Liverpool Radar roger, squawk 5050, you're Basic Service, QNH 1027.

1522:04 PA28(A): Squawk 5050, Basic Service, QNH 1027, [PA28(A) C/S].

1522:18 RAD: [PA28(A) C/S] can you squawk ident for me please, just confirm your level for me?

1522:23 PA28(A): Standby.

1522:33 another aircraft called inbound and was given airfield details.

1522:46 PA28(A): Er, say again sorry, [PA28(A) C/S].

1522:48 RAD: [PA28(A) C/S] just confirm for me your level, QNH 1027?

1522:51 PA28(A): Er, 2000ft 1027, [PA28(A) C/S].

1522:53 – 1524:44 the controller dealt with other inbound aircraft.

1525:13 PA28(A): [PA28(A) C/S] request rejoin Tarvin Roundabout.

1525:16 RAD: [PA28(A) C/S] roger, and join, report Tarvin, not above altitude 1500ft, VFR, QNH 1027.

1525:23 PA28(A): Tarvin Roundabout not above 1500ft VFR, QNH 1027, [PA28(A) C/S].

[PA28(A) C/S] flight continued into the CTR without incident, and with no mention of an Airprox.

[PA28(A) C/S] called on frequency requesting a Basic Service during quite a busy period. The aircraft was not identified, but there was a 0431, Hawarden squawk, which appeared to cross right-to-left, 200ft above, very shortly after [PA28(A) C/S] called on frequency. The [PA28(A) C/S] pilot did not report anything on the RT during or after the event.

Hawarden Investigation

Sequence of events

[PA28(B) C/S] contacted Hawarden Radar and requested a Traffic Service. The ATCO issued a 0431 squawk and identified the aircraft. A Traffic Service was given. The ATCO observed 2 contacts south of [PA28(B) C/S] and passed Traffic Information Both unknown aircraft were wearing 7000 squawks. The ATCO updated the Traffic Information to the pilot in clock code and the pilot reported visual with the aircraft. Due to the pilot reporting visual with the other aircraft, there were no more updates on the Traffic Information given. [PA28(B) C/S] and the contact both indicated 2.4A on the radar replay, and the contacts merged.

RT Transcript from Hawarden:

> 1520:44 “[PA28(B) C/S], there is traffic to the south west of you now by about five miles northbound, indicating errr correction there is two contacts, one is three thousand three hundred feet climbing the other is two thousand six hundred feet.
>
> “Copied, [PA28(B) C/S], thank you”.
>
> 1521:38 “[PA28(B) C/S], previously mentioned traffic, contact number one is in your left 11 o’clock about two, two and a half miles now, left-to-right, two thousand four hundred feet”.
>
> “Visual with him, thanks, [PA28(B) C/S]”
>
> 1523:01 “[PA28(B) C/S] that first contact you were visual with has now passed; the second contact is no longer a factor”.

The ATCO passed Traffic Information to [PA28(B) C/S] on the unknown traffic correctly. The pilot reported visual with this traffic. Due to the pilot reporting visual with the unknown aircraft, there was no more Traffic Information required. The ATCO’s actions as the APS were correct throughout and they did not contribute to the Airprox.

If the unknown aircraft that [PA28(B) C/S] had an Airprox with had elected to contact Hawarden Radar for a service, then a service could have been provided which would have resulted in Traffic Information being passed to this pilot. If Traffic Information had been provided to both pilots there is a high chance that the Airprox would not have occurred.

UKAB Secretariat

An analysis of the NATS radar replay showed both aircraft, which were identifiable from their Mode S data. PA28(A) was indicating FL021 and initially displaying a 7000 squawk, which changed to 5050 (Liverpool conspicuity) at 1522:11. PA28(B) was displaying a 0431 squawk (Hawarden) and indicated FL020 throughout, see Figure 1. The other traffic called by Harwarden can also be seen on the screenshot, squawking 7000 (converted to V on the radar picture) and indicating FL028.

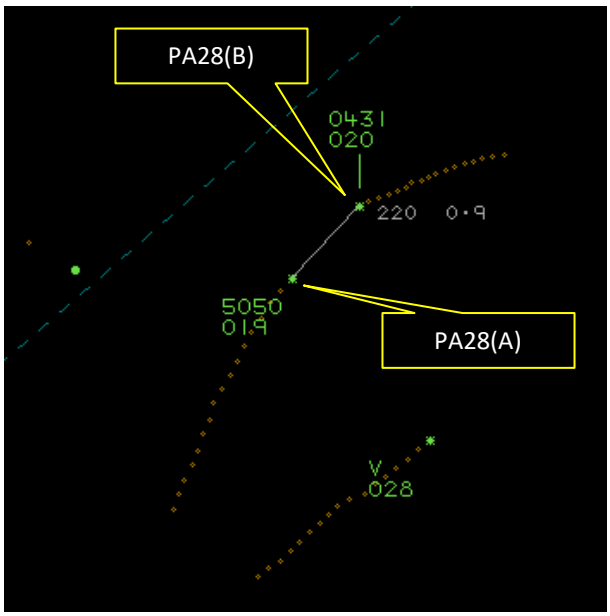

Figure 1 - 1522:12

The two PA28 aircraft continued to close, until CPA at 1522:27 (Figure 2), when radar separation indicated 100ft and <0.1NM.

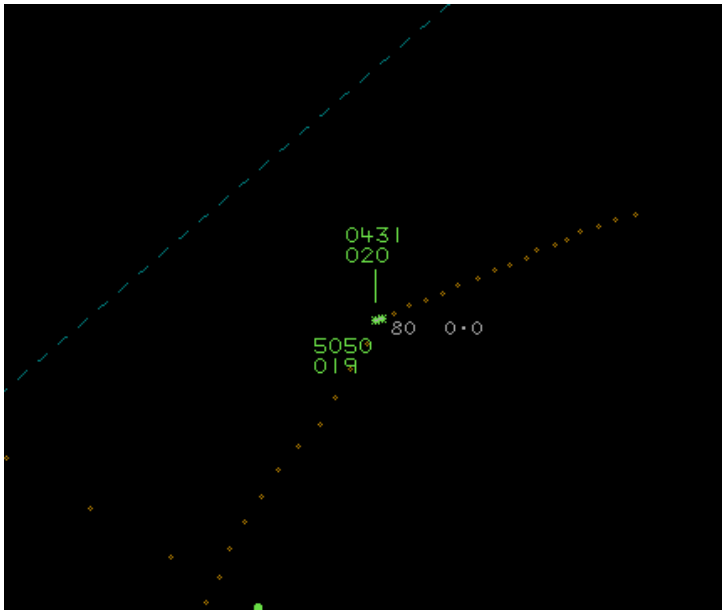

Figure 2 – CPA, 1522:27

The PA28(A) and PA28(B) 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 PA28(A) pilot was required to give way to the PA28(B).[3]

[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.

Summary

An Airprox was reported when PA28(A) and PA28(B) flew into proximity 5NM southwest Borras Quarry VRP at 1522Z on Saturday 27th January 2024. Both pilots were operating under VFR in VMC, the PA28(A) pilot in receipt of a Basic Service from Liverpool Radar and the PA28(B) pilot in receipt of a Traffic Service from Hawarden.

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.

The Board first looked at the actions of the PA28(A) pilot. They reported that they had been conducting a training flight with a student. Members with flying instruction experience thought that the pilot might have been better served requesting a Traffic Service for the flight, noting that, prior to calling Liverpool, the pilot had been on the London Information frequency and therefore would have been receiving a Basic Service from a FISO who would not have been using surveillance equipment. They noted that PA28(B) pilot had received Traffic Information on the other aircraft some time before the Airprox and thought that the PA28(A) pilot would likely have received the same information had they been receiving a service from Hawarden. As it happened, they had called Liverpool for a recovery with a Basic Service just moments prior to the Airprox and, under the terms of a Basic Service, the Liverpool controller had not been required to identify or monitor the aircraft. The PA28(A) had been fitted with a CWS, but the pilot had noted that it had lost GPS lock, which some members reported having experienced themselves, and they noted that in such circumstances often the only option was to recycle the equipment to get it to connect properly. As a consequence, the CWS had not provided an alert to the pilot, even though under normal circumstances one would have been expected. The Board agreed that, without a surveillance-based ATS, or any warning from the CWS, the PA28(A) pilot had received no prior situational awareness about the other aircraft (**CF2**). The pilot had subsequently spotted the other PA28 late (**CF3**) and had taken avoiding action.

Turning to the actions of the pilot of PA28(B), members noted that, although a training aircraft, this aircraft had not been fitted with any form of CWS. However, in mitigation, this pilot had been receiving a Traffic Service from Hawarden and had received Traffic Information on PA28(A). Members then discussed why, if the pilot had been visual with the other aircraft as stated on the frequency, they had continued on track and ended up within 0.1NM and 100ft from it. They noted that the pilot had not remembered that incident clearly and discussed whether this had been because they had been unconcerned by the proximity, or whether they had not actually been visual with this aircraft. They noted that when the controller had first called the traffic, they had provided information on two aircraft, the PA28(A) and another one to the south and above. When the Traffic Information had been updated by the controller, the PA28(A) had been in their 11 o'clock and slightly above, so members thought that it was entirely possible that the PA28(B) pilot had become visual with the other aircraft. However, because the pilot had called visual, the controller had not then updated the Traffic Information as the two aircraft had continued towards each other. The Board therefore agreed that the situational awareness of PA28(B) pilot had been inaccurate, in that they had probably been visual with the incorrect aircraft (**CF2**), and that this had been a non-sighting of the PA28(A) (**CF4**).

The role of the ATC controllers was then discussed. The PA28(A) pilot had called Liverpool ATC just moments before the Airprox and had been given a generic squawk and a Basic Service, the controller had asked the pilot to squawk ident, presumably so that they could identify the aircraft on the radar, but the pilot had told the controller to standby and another pilot had called, so the controller's attention had been taken elsewhere. The timing had been unfortunate, because it was entirely possible that if this had happened a few moments earlier and the controller had seen the two aircraft in proximity, they may have given Traffic Information, but under the terms of a Basic Service, the controller had not been required to monitor the aircraft on the radar (**CF1**). For their part, the Hawarden controller had been providing a Traffic Service to the PA28(B) pilot and had passed Traffic Information on PA28(A) and

other aircraft, having updated this information and been told that the pilot had been visual, members agreed that the controller had discharged their duties as expected.

Finally, when determining the risk of the Airprox the Board considered the reports from both pilots and the air traffic controllers, together with the radar screenshots. They noted that the PA28(A) pilot became visual, albeit late, but managed to take avoiding action, and it had been likely that the PA28(B) pilot had not been visual with PA28(A). Some members thought that the avoiding action by the PA28(A) pilot had removed any risk of collision, but after a discussion the Board agreed that the late nature of the avoiding action, with one pilot probably not visual at all, meant that safety had not been assured: Risk Category B.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024013			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Situational Awareness and Action			
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
	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
	• 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 Assessment[4]

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 the PA28(A) pilot had received no situational awareness that PA28(B) had been in the vicinity.

Electronic Warning System Operation and Compliance were assessed as **not present** because the CWS in PA28(A) had not been connected to the GPS at the time of the Airprox, therefore it had not been able to function correctly.

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

See and Avoid were assessed as **partially effective** because PA28(A) pilot had seen the other aircraft late, and it was likely that PA28(B) pilot had identified the incorrect aircraft and had not seen PA28(A).