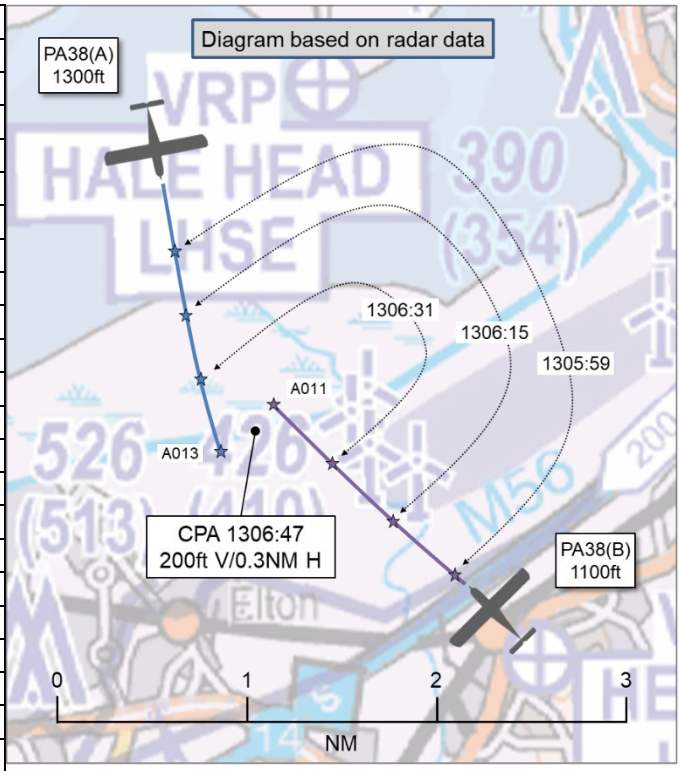
# AIRPROX REPORT No 2023218

Date: 13 Sep 2023 Time: 1307Z Position: 5318N 00248W Location: 3NM SSE Liverpool

## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

| Recorded | Aircraft 1 | Aircraft 2 |
|---|---|---|
| Aircraft | PA38(A) | PA38(B) |
| Operator | Civ FW | Civ FW |
| Airspace | Liverpool CTR | Liverpool CTR |
| Class | D | D |
| Rules | VFR | VFR |
| Service | ACS | ACS |
| Provider | Liverpool Tower | Liverpool Tower |
| Altitude/FL | 1300ft | 1100ft |
| Transponder | A, C, S | A, C, S |
| **Reported** | | |
| Colours | White, orange | White, red |
| Lighting | Strobes, nav | Nav |
| Conditions | VMC | VMC |
| Visibility | >10km | >10km |
| Altitude/FL | 1300ft | 1300ft |
| Altimeter | QNH (1022hPa) | NK |
| Heading | 150° | NK |
| Speed | 90kt | 90kt |
| ACAS/TAS | SkyEcho | SkyEcho |
| Alert | TA | None |
| **Separation at CPA** | | |
| Reported | 100ft V/300m H | 200ft V/2NM H |
| Recorded | 200ft V/0.3NM H | |




**THE PA38(A) PILOT** reports that, on departure with a student from RW09, they turned right to track to the standard outbound VRP at Taporely Roundabout. They were advised by ATC that there was a similar type aircraft inbound from the reciprocal direction at a similar altitude. [Both the pilot and student] began looking. They spotted the aircraft nose-on with a small profile. They advised ATC that they could see an aircraft in their 11 o'clock, similar altitude, possibly slightly lower, and asked if that was the correct traffic. They got an answer in the affirmative. They then assessed that the other traffic (that they ascertained had been [PA38(B)] by listening out to the ATC conversation) was not changing aspect much but was increasing in size. At one point they got a TA warning from their [EC device], so they took over the controls and climbed slightly to be more visible to the other aircraft. They turned more to the right and started to rock their wings to increase visibility as the other pilot did not seem to notice the closing aspect. They passed by [PA38(B)] and continued with their flight, but advised the company operational team about the Airprox and noted the time.

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

**THE PA38(B) PILOT** reports that they were rejoining to Liverpool from Helsby Hill and were made aware of an aircraft departing from Liverpool Airport. They started their lookout and found the aircraft (after the pilot of the other aircraft had been visual with them first). As they saw the aircraft pulling away from them towards [the other pilot's] right, they did the same to ensure they were clear. They deem the other aircraft to have been a safe distance away and no further action was necessary due to the distance between them.

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

**THE LIVERPOOL CONTROLLER** reports that [the pilot of PA38(A)] departed southbound RW27 [they recall] for Tarporley Roundabout VFR. Inbound, routing towards Helsby Hill VFR, was [the pilot of PA38(B)].

Both pilots were given Traffic Information on each other. [The pilot of PA38(A)] reported that [the PA38(B)] was in sight. Once both aircraft were clear of each other, they transferred [the pilot of PA38(A)] to Radar. [The pilot of PA38(B)] landed safely.

[The Liverpool controller] later received a telephone call saying [the pilot of PA38(A)] wanted to file an Airprox.

## Factual Background

The weather at Liverpool was recorded as follows:

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METAR EGGP 131320Z 17006KT 130V230 9999 FEW035 18/10 Q1022
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## Analysis and Investigation

### Liverpool Airport Unit Investigation

On 13/09/23 Liverpool ATC was notified by the [CFI of the flying school involved] via email that one of their pilots had experienced an Airprox. Recordings were saved. The Unit Competence Officer debriefed the tower ATCO (whose frequency both pilots were on at the time) and completed the Provisional Inability process. Both aircraft were then clear of each other and flying away from each other.

Investigation Findings: Liverpool Airport was on RW09, Hawarden was on RW22. Hawarden had inbound traffic for RW22 squawking 0435 utilising the Radar Manoeuvring Area (RMA). Inbound VFR Liverpool traffic from the south was therefore routed inbound from Tarporley Roundabout towards Helsby Hill for RW09. This routing is in direct confliction with any departing VFR traffic routing southbound to leave via Tarporley, however it does keep the traffic away from the RMA and Hawarden traffic.

Liverpool Radar had [the pilot of PA38(B)] inbound from Tarporley roundabout to Helsby Hill, to avoid the Hawarden RMA. At the same time Liverpool Tower had [the pilot of PA38(A)] departing to the south towards Tarporley Roundabout. Traffic was passed both ways by the Tower controller. The departing [pilot of PA38(A)] said they were visual with the inbound [PA38(B)]. However, at no point did the inbound [pilot of PA38(B)] say that they were visual with the departing [PA38(A)]. The two aircraft merged at similar altitudes.

Root Cause of the Event: Due to the nature of the airspace, and having to share part of the southern airspace with Hawarden, when the RMA has been given to Hawarden, any inbound or departing VFR traffic from/to the south is forced to have the same routing and, therefore, be in direct confliction with one another.

Although traffic was passed once both ways by the Tower controller, due to the two aircraft being in direct confliction with one another, it may have been prudent for the Tower controller to have continued to pass Traffic Information until both were visual with each other or plan for a slightly different routing as it is ATC forcing the two aircraft to be in direct confliction with one another.

Investigators Recommendations: There has been suggestion of having inbound VFR traffic climb to not above 2000ft and departing traffic not above 1500ft to enable a small bit of separation. However, if there is cloud below 2000ft then this inevitably wouldn't work as both aircraft would be flying lower down. The Letter of Agreement with Hawarden should be reviewed/amended to improve the procedures to prevent the situation from occurring.

Conclusion: This incident was discussed as part of a review of the Hawarden Letter of Agreement with Liverpool, and a new LoA became effective 01/12/23. A subsequent safety survey will encompass VFR routings and, as part of this, there will be a review of the VFR inbound/outbound levels.

As a result of a further Airprox on 16/01/2024, [Airprox 2024007], in a similar set of circumstances, Liverpool ATC Safety Directive 01-2024 was issued on 26/01/24 to immediately prohibit the use of the Hawarden RMA for instrument training traffic. Liverpool ATC and Hawarden ATC are working collaboratively to create procedures that will allow the re-introduction of Hawarden instrument training traffic, but the SD remains in force until those procedures are developed/agreed.

**UKAB Secretariat**

An analysis of the NATS radar replay was undertaken and both aircraft could be positively identified from Mode S data. The aircraft were depicted on the radar replay as flying at Flight Levels. A suitable conversion factor was used to determine their altitudes. The diagram was constructed and the separation at CPA determined from the radar data.

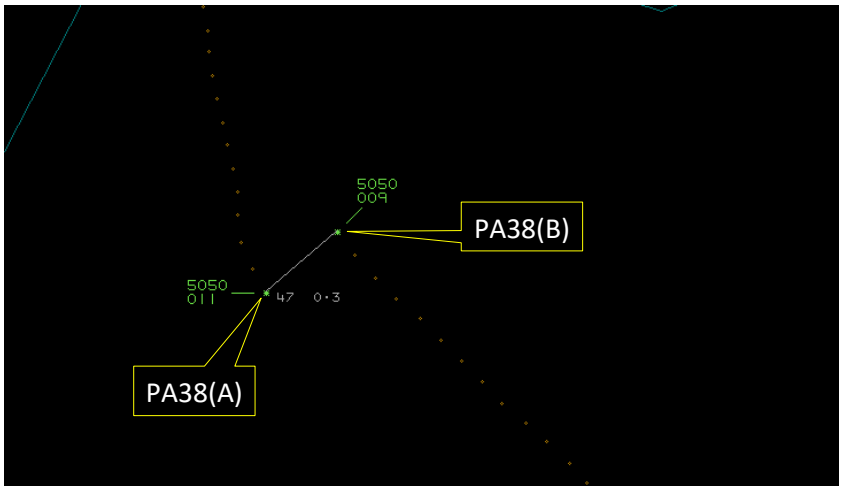



Figure 1 – CPA at 1306:47

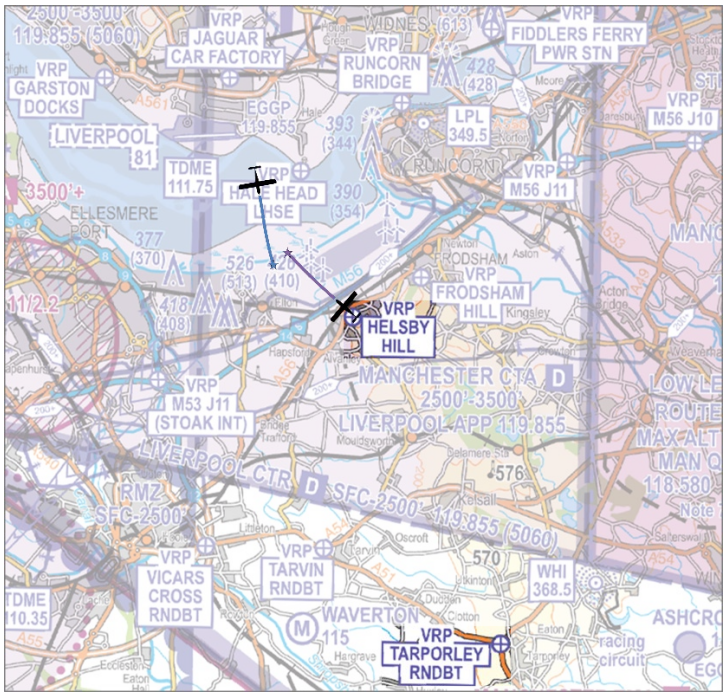



Figure 2 – Visual Reporting Points

The PA38(A) and PA38(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]

**Summary**

An Airprox was reported when PA38(A) and PA38(B) flew into proximity 3NM south-southeast of Liverpool Airport at 1307Z on Wednesday 13th September 2023. Both pilots were operating under VFR in VMC, in receipt of an ACS from Liverpool Tower.

## 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 discussed the actions of the pilot of the PA38(A). Members noted that they had been passed information on traffic that had been on a broadly reciprocal track and at a similar level. It was agreed that the timeliness of the information had been sufficient to prompt a thorough visual scan of the area and for the pilot of the PA38(A) to have visually acquired the PA38(B) in time to have assessed the safest course of action. It was also noted that the EC device fitted to the PA38(A) had detected the presence of the PA38(B). Members noted that the pilot of the PA38(A) had become concerned by the closing aspect of the PA38(B) and had perceived that they had not been sighted. Members commended their subsequent action to increase their visibility and increase the separation between the aircraft.

Turning their attention to the pilot of the PA38(B), members noted that they had been passed Traffic Information on the PA38(A) and had commenced a visual scan to acquire it. Members noted that the EC device fitted to the PA38(B) had been of a similar type to that fitted to the PA38(A) and would therefore have assumed that an alert would have been provided. However, it was noted that an alert to the presence of the PA38(A) had not been reported. Nevertheless, members noted that the PA38(A) had been visually acquired, albeit after the pilot of the PA38(A) had already initiated a manoeuvre to increase separation.

Members next turned their attention to the Liverpool controller and commended the passing of Traffic Information to each pilot on the other aircraft in a timely manner. In consideration of the routeing of the two aircraft, members pondered the contemporaneous Letter of Agreement (LoA) between Liverpool and Hawarden. Members noted that this incident was discussed as part of a review of the LoA, and a new LoA has since been brought into effect. Members were heartened that Liverpool ATC and Hawarden ATC continue to work collaboratively to further enhance flight safety in their areas of responsibility.

Concluding their discussion, members summarised their thoughts. It was agreed that both pilots had been provided timely and sufficient Traffic Information to have visually acquired the other aircraft in plenty of time to have considered the safest course of action. It was also agreed that action had been taken by each pilot to further increase separation. It was therefore concluded that no risk of collision had existed. The Board assigned Risk Category E to this event.

Members agreed on the following contributory factors:

**CF1.** With the RMA having been ceded to Hawarden, the procedure for the routeing of PA38(A) and PA38(B) had potentially brought the aircraft into proximity.

**CF2.** The EC device fitted to the PA38(A) had alerted to the presence of the PA38(B).

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

**CF3.** The EC device fitted to the PA38(B) had not been reported as alerting to the presence of the PA38(A), although such an alert would have been expected.

**CF4.** The pilot of PA38(A) had been concerned by the proximity of PA38(B).

## PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

| | 2023218 | | | |
|---|---|---|---|---|
| CF | **Factor** | **Description** | **ECCAIRS Amplification** | **UKAB Amplification** |
| | **Ground Elements** | | | |
| | **• Regulations, Processes, Procedures and Compliance** | | | |
| 1 | Organisational | • Aeronautical Information Services | An event involving the provision of Aeronautical Information | The Ground entity's regulations or procedures were inadequate |
| | **Flight Elements** | | | |
| | **• Electronic Warning System Operation and Compliance** | | | |
| 2 | Contextual | • Other warning system operation | An event involving a genuine warning from an airborne system other than TCAS. | |
| 3 | 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** | | | |
| 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: E.

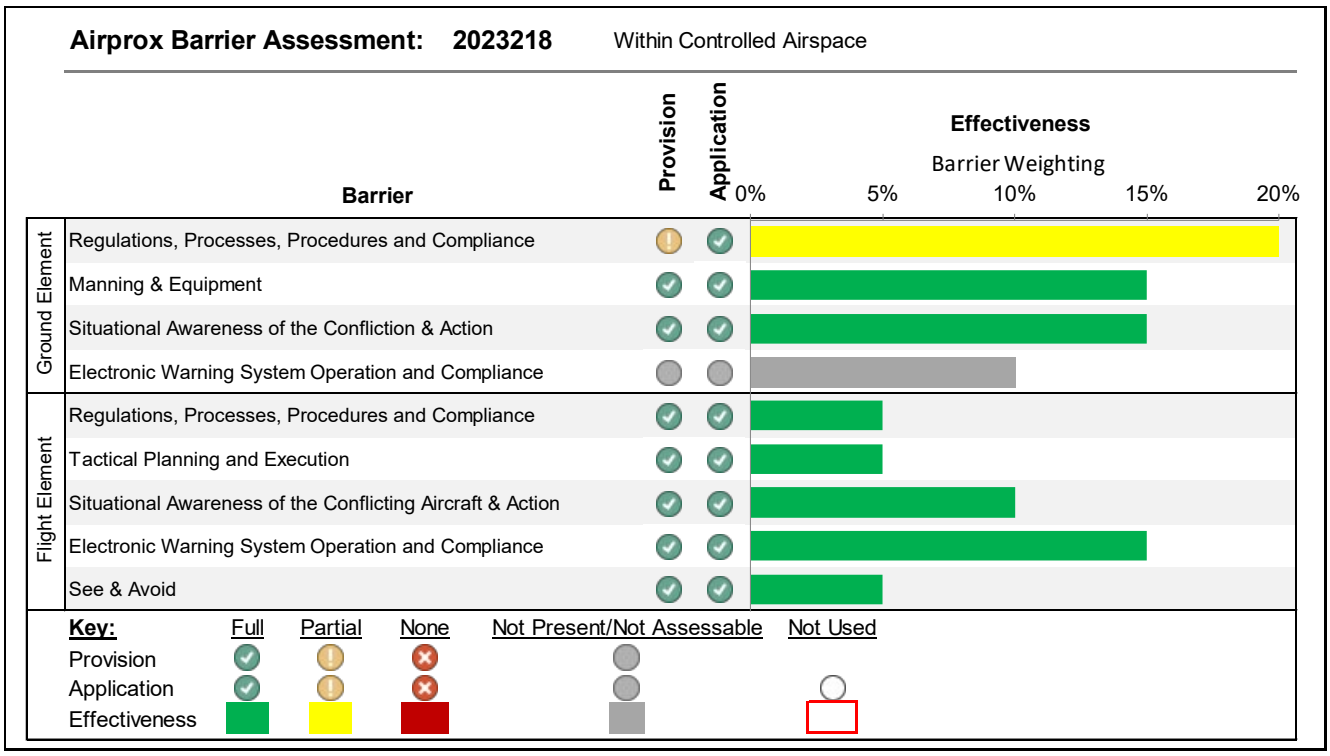
Safety Barrier Assessment[3]

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

### Ground Elements:

**Regulations, Processes, Procedures and Compliance** were assessed as **partially effective** because, with the RMA having been ceded to Hawarden, the routeing of PA38(A) and PA38(B) had potentially brought the aircraft into proximity.

[3] 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: 2023218
Within 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