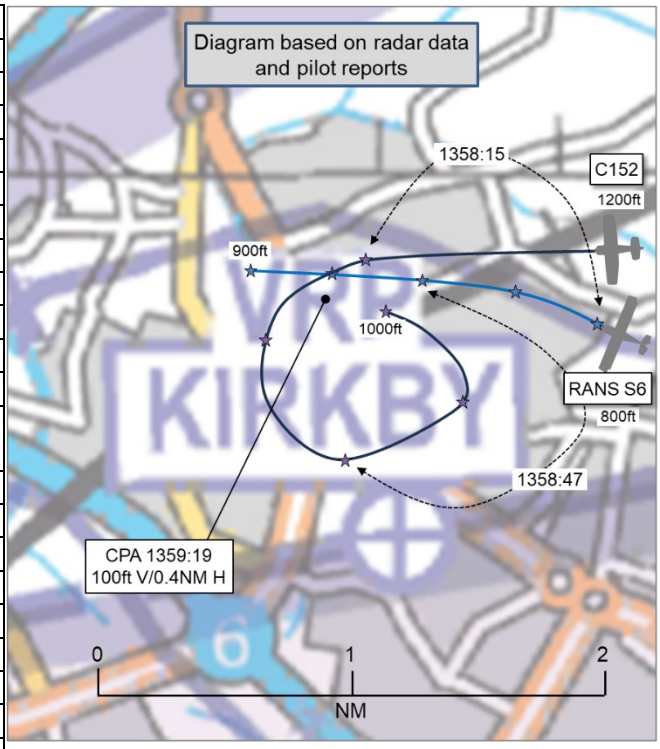
AIRPROX REPORT No 2023258

Date: 25 Nov 2023 Time: 1359Z Position: 5329N 00253W Location: 1NM north of KIRKBY VRP

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	RANS S6	C152
Operator	Civ FW	Civ Comm
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	Basic
Provider	N/A	Liverpool Radar
Altitude/FL	900ft	1000ft
Transponder	A, C, S	A, C, S
Reported		
Colours	Blue	White/Red
Lighting	None	Beacon, navigation, landing
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1000ft	1320ft AGL
Altimeter	QNH (1021hPa)	QNH (1026hPa)
Heading	270°	'Orbiting'
Speed	70kt	80kt
ACAS/TAS	SkyEcho	SkyEcho
Alert	Information	Information
Separation at CPA		
Reported	0ft V/<0.1NM H	500ft V/>1NM H
Recorded	100ft V/0.4NM H	



THE RANS S6 PILOT reports that they had been flying from [departure airfield] to [destination airfield] north of Liverpool. After travelling up the Manchester low-level corridor with the appropriate listening squawk and turning left towards [their destination], they had squawked conspicuity again. The pilot had then noticed an aircraft [the C152] coming from the direction of Wigan on an intercept course, velocity and descent from approximately 700ft above them so had then turned left to[wards] the south a little in order to try and stop the aircraft conflicting. The C152 had then seemed to turn left even more, continuing to intercept despite the RANS S6 pilot's attempt to deconflict. They called out on SafetyCom, "Cessna north of Kirkby - Airprox - please turn right quickly". No response or course change [had been observed]. The RANS S6 pilot had then descended quickly to 600ft but had then turned right to around 270° as they had been pushed right against the border of Liverpool's control zone. The C152 had then made a tight 'fly-by' circle very close in front of them, circling clockwise from the rear at a bank which appeared to be 60° in extremely close proximity – estimated at only 500ft away horizontally – and then came straight across their track [they recall] headed out to the north away from them. Both the RANS S6 pilot and their P2 had been extremely worried and had only rated the risk of collision as 'Medium' in hindsight. They note that they would have rated it as 'High' at the time without knowing that the C152 pilot must have known exactly what they were doing. After landing at [destination airfield] they observed the C152 on SkyDemon continuing to do some tight circles above Crosby town at 1000ft.

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

THE C152 PILOT reports that at the time they had been carrying out surveys of school rooves for the Department of Education. They had departed […] at 1340 and routed to Westhoughton and then on towards Kirkby for the first survey site. It had been whilst on that track west that they had first spotted the RANS S6. They had been ahead and about 1-2NM south at about 500ft AGL. The C152 pilot reports that they had maintained about 1500ft and had slowly overtaken them. The C152 pilot had been in

contact with Liverpool radar under a Basic Service. As they had started to survey the first site at Kirkby, they had tried to maintain visual [contact] as they had orbited and watched them continue to go past the C152 to the west. On checking their [electronic conspicuity equipment] they could not see a target from them and also did not recall hearing them talk to Liverpool. On completion of the first survey site and about to go to the next at […] about 2NM to the north, the C152 pilot had seen the RANS S6 again at low level tracking westbound. The C152 pilot had taken a photograph of them and then passed behind. Unless the RANS S6 had come close to the C152 whilst they had been on an orbit in a blind spot, they had not seen that there had been any risk of collision. The picture had been taken with a 200mm lens, so they had been at least a mile away and about 500ft lower.

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

THE LIVERPOOL RADAR SAFETY MANAGER reports that on 14th December 2023 they had been notified that an Airprox had been submitted, relating to a flight on 25th November 2023. Nothing appeared in the reporting system or the ATC logbook relating to the event. The time of the Airprox was stated as 1257. The tapes were reviewed and there had been no evidence of an Airprox taking place 1NM NE of Kirkby at that time (as there are no radar returns in the Kirkby area at that time). One hour later, however, the reporting aircraft had been visible on the radar screen in the vicinity of Kirkby but outside Liverpool CAS. An intermittent 7000 squawk appeared and disappeared from the screen a few times, in a similar area. It is therefore assumed that this had been when the Airprox had taken place: 1357 rather than 1257. The ATCO who had been plugged-in as Liverpool Radar at the time of the event had been on leave at the time of writing, so the Safety Manager had submitted this on behalf of the ATCO.

Additional input from the radar ATCO once back from leave and absence: Whilst they had absolutely no recollection of the VFR survey aircraft and the conflicting intermittent 7000 squawk, they did, however, remember part of the training session. The session stood out because it had been a particularly busy winter VFR Saturday. Also, they remembered the main training point to come away from the session had been the importance of being positive with coordination to adjacent units when dealing with IFR inbound traffic. At the exact time of the reported incident (1357) the trainee had been dealing with a light-aircraft pilot who had free-called to the south of Liverpool requesting an SRA approach. As Liverpool had been operating on RW09, this had required the trainee to identify the aircraft and to reposition it through the airspace controlled by Hawarden with the appropriate level of positive control and coordination. This had taken a great deal of the trainee's and the ATCO's attention. Obviously, the ATCO is fully aware of 'duty of care' when calling conflicting traffic to Basic Services, and has always done so of relevant, non-participating traffic. However, on this occasion, the ATCO thought it easy to see why both themself and the trainee had been focused on other situations.

Factual Background

The weather at Liverpool was recorded as follows:

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METAR EGGP 251320Z VRB02KT 9999 FEW035 SCT038 05/00 Q1021=
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Analysis and Investigation

Liverpool ATSU

At 1350, the C152 [pilot] had joined the Liverpool frequency having departed from […] and had wished to carry out a survey in and around the Liverpool CTR. The C152 [pilot] had been initially operating to the north of the CTR so had been given a Basic Service by Liverpool Radar. For the following 30min, the C152 had operated a few miles north of the CTR boundary, orbiting at times and gradually advancing in a westerly direction, carrying out their survey at various sites. During this time, an intermittent 7000 squawk had also been operating in the same area. It had been flying slowly and had made similar progress to the C152 in a westerly direction. The two aircraft Mode C returns had shown similar altitudes; between 800ft and 1600ft, both varying at times. It had been assumed that this was the Airprox traffic, which had not spoken to Liverpool, and had then flown in a north-westerly direction away from the Liverpool CTR. The C152 pilot did not mention the other

traffic or an Airprox over the Radar frequency and then, at 1425, the C152 pilot had asked Liverpool Radar for entry into the CTR to operate close to the M62, remaining north of the motorway. They had continued with their survey without mentioning an Airprox before then having returned to [destination airfield].

Investigation Findings: The C152 pilot had been on a Basic Service outside CAS and another intermittent contact had been operating in a similar area and had not been speaking to Liverpool. The traffic situation had been busy and the trainee controller had been working a number of other aircraft at the time.

USMO: A 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.

Traffic Information for a Basic Service:[1]

> Given that the provider of a Basic Service is not required to monitor the flight, pilots should not expect any form of traffic information from a controller/FISO. A pilot who considers that they require a regular flow of specific Traffic Information shall request a Traffic Service. However, where a controller/FISO has information that indicates that there is aerial activity in a particular location that may affect a flight, in so far as it is practical, they should provide traffic information in general terms to assist with the pilot's situational awareness. This will not normally be updated by the controller/FISO unless the situation has changed markedly, or the pilot requests an update. Traffic Information in general terms could include warnings of aerial activity in a particular location, such as: 1) Intense gliding activity over Smallville; 2) multiple aircraft known to be operating 15 miles north of Smallville; 3) PA28 estimating CPT at 25, altitude 2000ft; 4) fast jet reported routeing from Smallville to Midtown below altitude 500ft; 5) helicopter conducting power line inspection 5NM north of Smallville below altitude 500ft. A controller with access to surveillance-derived information shall avoid the routine provision of Traffic Information on specific aircraft but may use that information to provide a more detailed warning to the pilot. If a controller/FISO considers that a definite risk of collision exists, a warning shall be issued to the pilot. Whether Traffic Information has been provided or not, the pilot remains responsible for collision avoidance without assistance from the controller.

The RT had been busy at the time of the incident. The incident had taken place outside controlled airspace between the C152 pilot on a Basic Service and the RANS S6 pilot not reported to be on the Liverpool Radar frequency.

UKAB Secretariat

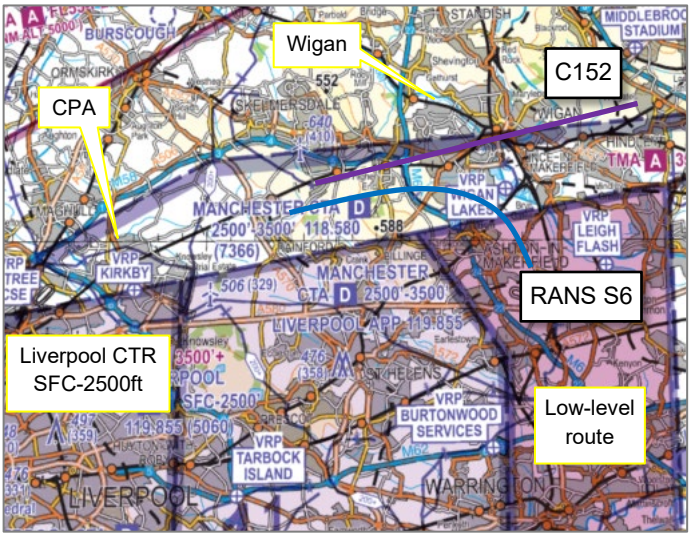

Figure 1: respective flight paths toward the relevant area

[1] CAP774

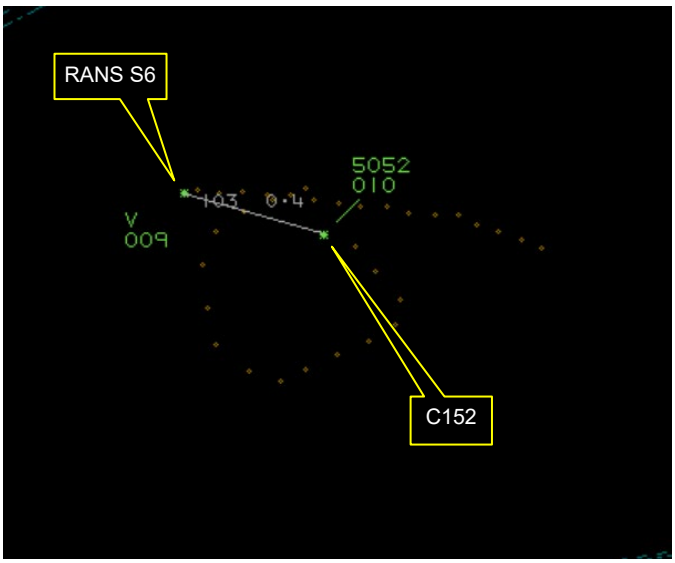

Figure 2: CPA 1359:19 100ft V/0.4NM H

The RANS S6 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.[2] If the incident geometry is considered as converging then the C152 pilot was required to give way to the RANS S6.[3]

Summary

An Airprox was reported when a RANS S6 and a C152 flew into proximity 1NM north of Kirkby VRP at 1359Z on Saturday 25th November 2023. Both pilots were operating under VFR in VMC, the RANS S6 pilot not in receipt of an Air Traffic Service and the C152 pilot in receipt of a Basic Service from Liverpool 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 RANS S6 pilot. Noting that they had been flying under VFR without an Air Traffic Service and, having departed the Manchester Low-Level Route, had turned left towards their destination and seen the C152 to their right and slightly higher. Although constrained by airspace restrictions to the south, the RANS S6 pilot had manoeuvred to increase separation with the C152 and had been concerned by the actions of the C152 pilot. They had reinforced their manoeuvre with radio calls on the SafetyCom frequency which, unfortunately, the C152 pilot had not been monitoring. Members accepted that, having been unaware that the C152 pilot had been visual with their aircraft and whose manoeuvres had been pre-planned, avoidance action had been prudent.

In reviewing the actions of the C152 pilot, members noted the nature of their flight and the utilisation of a Basic Service, recognising the limitations in that and opining that a LARS from Warton would in all likelihood not have been available at the weekend, and accepted that they had done much of what could have been done in this case. Members did feel that the nature of the task would have suggested that a co-pilot or assistant for additional lookout would have been valuable. In this case, the C152 pilot had gained visual contact with the RANS S6 and maintained the commitment to their task, confident that they had had adequate separation from the RANS S6. Members did note with some disappointment that, although the C152 pilot had recalled an Information alert from their EC equipment, they reported

[2] (UK) SERA.3205 Proximity.
[3] (UK) SERA.3210 Right-of-way (c)(2) Converging.

not having seen a target presented, agreeing that although the equipment carried by the C152 and the RANS S6 had been compatible it had been ineffective on this occasion.

Members discussed the role played by the Liverpool controller, accepting that as the incident had not been reported on RT at the time, and the nature of the service provided coupled with the level of tasking that the controller had been under at the time, there had been little more they could have done in this case.

Concluding their discussion, it was agreed that, although the RANS S6 pilot had been concerned by the actions and proximity of the C152, the C152 pilot had gained good visual contact and had ensured a Basic Service with Liverpool to aid where necessary, there had been adequate horizontal separation between the aircraft and agreed that no risk of collision had existed. As such, the Board assigned Risk Category E to this event and agreed on the following contributory factors:

CF1. The Liverpool controller had not been required to monitor the flight of the C152 under a Basic Service.

CF2. The Liverpool conflict alerting system was not utilised in this situation.

CF3. Both the RANS S6 and C152 pilots had ben utilising compatible conspicuity equipment which had raised Information alerts for both pilots.

CF4. The RANS S6 pilot had been concerned by the proximity of the C152.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2023258			
Factor	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
Ground Elements			
• Situational Awareness and Action			
Contextual	• ANS Flight Information Provision	Provision of ANS flight information	The ATCO/FISO was not required to monitor the flight under a Basic Service
• Electronic Warning System Operation and Compliance			
Technical	• Conflict Alert System Failure	Conflict Alert System did not function as expected	The Conflict Alert system did not function or was not utilised in this situation
Flight Elements			
• Electronic Warning System Operation and Compliance			
Contextual	• Other warning system operation	An event involving a genuine warning from an airborne system other than TCAS.	
• See and Avoid			
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[4]

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

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

Ground Elements:

Situational Awareness of the Confliction and Action were assessed as **not used** because the Liverpool Radar controller was not required to monitor the flight under a Basic Service.

Electronic Warning System Operation and Compliance were assessed as **not used** because the conflict alert system was not utilised in this situation.