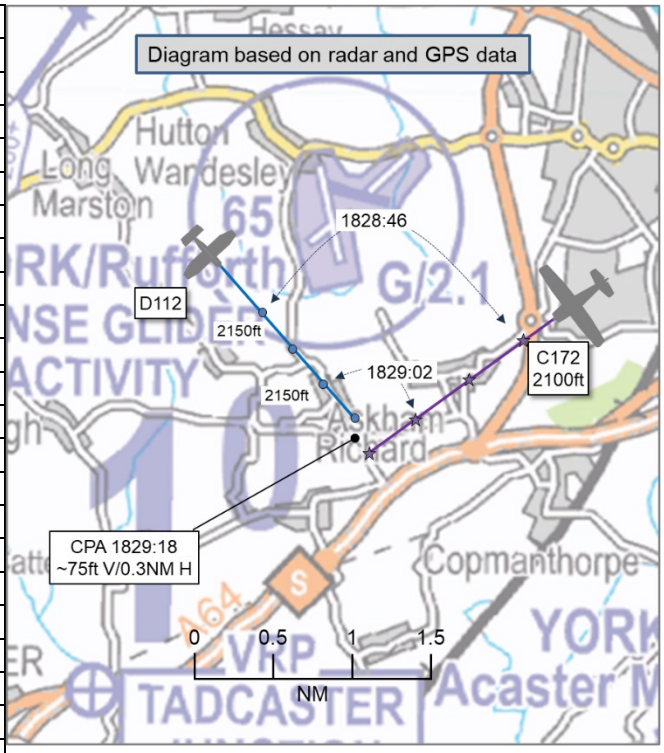
AIRPROX REPORT No 2024236

Date: 16 Sep 2024 Time: 1829Z Position: 5355N 00110W Location: 2NM south of Rufforth

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	D112	C172
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Listening Out	Basic
Provider	Leeds Radar	Leeds Radar
Altitude/FL	~2175ft	2100ft
Transponder	Not fitted	A, C, S
Reported		
Colours	Cream	White and Blue
Lighting	None	Nav, beacon
Conditions	VMC	VMC
Visibility	>10km	NR
Altitude/FL	1800ft	2000ft
Altimeter	QNH (1031hPa)	QNH (1031hPa)
Heading	~135°	234°
Speed	~76kt	90kt
ACAS/TAS	SkyEcho	Not fitted
Alert	None	N/A
Separation at CPA		
Reported	50ft V/100m H	300ft V/200m H
Recorded	~75ft V/0.3NM H	



THE D112 PILOT reports that they were monitoring [the] Leeds Radar [frequency] as they flew southbound to the west of York, descending slowly, [when] an aircraft (the C172) reported to be at 2500ft over York [had] requested to join Leeds/Bradford Airport. The D112 pilot had paid extra attention to their left to lookout for the aircraft as they had been at around 2000ft. Roughly a minute or two later, the aircraft suddenly appeared around 300ft in front of them and around 50ft above, moving from their left-to-right (east-to-west) and neither the pilot nor their passenger (who is also a pilot) saw the aircraft until it was directly ahead. By this point they believe they had been at roughly 1800ft. A slight stick forward input was made mainly out of surprise, however, this had no effect on the outcome due to the delayed sighting. Judging by the position of the other aircraft, its pilot had not seen them, nor had the D112 pilot seen [the C172]. Having reviewed the flight radar playback, it would appear there had been around 25ft difference in altitude between them, however, the track of the Cessna seemed to be inaccurate and jerky so they were unable to tell how close they had been from that. The D112 pilot reports having used [EC equipment] and was not in contact with Leeds Radar, but was monitoring the frequency.

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

THE C172 PILOT reports a clear day with no cloud, the sun had just set below the horizon. They had the beacon and navigation lights on. They flew over York and then back towards Leeds/Bradford listening to LBA Radar and had been squawking 2677. Shortly before the [reported] Airprox, they spoke to LBA radar to get a Basic Service to land back at LBA. They saw the other aircraft flying slightly behind and below them (they estimate approximately 300ft below) so they put full power on to increase the horizontal separation. The other aircraft then flew behind and below with no issues. The C172 pilot then flew back and landed at LBA.

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

THE LEEDS RADAR CONTROLLER reports that they had been asked by UKAB to file an MOR for the Airprox described. They have no recollection of the incident.

THE LEEDS/BRADFORD SAFETY SUPERVISOR reports that the radar was reviewed and that [the C172 pilot] had been working Leeds Radar (134.580MHz) at the time of the incident. It had been in an area of known radar clutter with no other SSR returns observed. No report was made by the pilot of the C172 at the time. The C172 pilot had requested a Basic Service and therefore would not have been expecting any Traffic Information unless they [LBA Radar] had considered that a real risk of collision existed. The radar ATCO did not stipulate a Basic Service on the R/T, however, they did identify, validate and verify the squawk.

Factual Background

The weather at Leeds/Bradford was recorded as follows:

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METAR EGNM 161820Z 09003KT CAVOK 14/08 Q1031=
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Analysis and Investigation

CAA ATSI

Whilst the Leeds controller had never actually stipulated the type of service being provided to the pilot of the C172, it was akin to a Basic Service. The unit reported a lot of radar clutter in the area, but the D112 was not observed. The pilot of the D112 had been monitoring the Leeds frequency and had been aware of the presence of the C172 but did not request an ATS from Leeds.

UKAB Secretariat

The C172 was tracked via radar and identified through Mode S data. The D112 was tracked via primary radar and ADS-B tracking tools with their altitude derived from associated GPS data. The diagram at page 1 is constructed by combining these data sources.

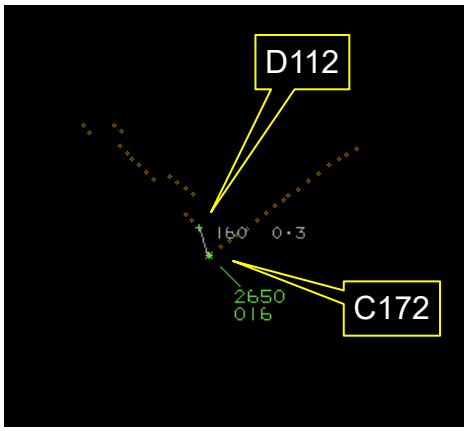


Figure 1: 1829:18 CPA ~75ft V/0.3NM H

Figure 2: 1829:20 ADS-B tracking source

The D112 and C172 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 converging then the C172 pilot was required to give way to the D112.[2]

Summary

An Airprox was reported when a D112 and a C172 flew into proximity 2NM south of Rufforth at 1829Z on Monday 16th September 2024. The D112 pilot was operating under VFR in VMC listening out on the Leeds Radar frequency and the C172 pilot was operating under VFR in VMC in receipt of a Basic Service from Leeds 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 firstly discussed the actions of the D112 pilot, noting that they had been operating under VFR in good VMC, had elected to monitor the Leeds Radar frequency and had heard the pilot of an aircraft call overhead York heading towards Leeds/Bradford airport. The Board agreed that this had given the D112 pilot generic situational awareness (**CF2**) of the presence of the C172 and had allowed them to focus their lookout to their left-hand side. However, members further agreed that the D112 pilot had only visually acquired the C172 as it had appeared at their 12 o'clock (**CF4**) and that had allowed time only for a slight control input, which the pilot determined had had no effect on the separation between themselves and the C172. The Board noted that they had equipped with an EC unit common to much of the fixed-wing GA user base but had, unfortunately, received no alert from the C172 (**CF3**). Although in this case the D112 pilot's monitoring of the Leeds Radar frequency had borne fruit, members wished to stress that, where possible, taking a proactive Air Traffic Service (such as a Traffic Service) can generate a higher level of traffic awareness and recommend that pilots do so.

In considering the actions of the C172 pilot, members noted that they had utilised a Basic Service from Leeds Radar but had received no indication of other traffic in their area and, as the C172 pilot had carried no EC equipment, they had not had any situational awareness of the presence of the D112 (**CF2**). The D112 pilot described having visually acquired the C172 only as it had been behind and below them, which the Board members deemed to have been effectively a non-sighting (**CF4**).

The Board then reviewed the contribution from the Leeds Radar controller. Members recognised that the D112 pilot had been Listening Out on the Leeds Radar frequency and that the C172 pilot had been under a Basic Service. Members highlighted that, although useful in raising some situational awareness, there is no requirement for the controller to monitor a flight under a Basic Service (**CF1**), and the Listening Out option relies largely on others actively engaging on that frequency. Members again stressed that a Traffic Service provides a more positive line of communication and awareness to both pilot and controller and should be considered in areas of higher levels of activity.

Concluding their discussion, members agreed that neither pilot had visually acquired the other aircraft sufficiently ahead of CPA to make any material adjustment to their flight path but, fortuitously, there had been sufficient separation between the aircraft to negate any risk of collision. Members agreed that safety margins had been degraded and assigned Risk Category C to this event.

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

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024236			
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
	• Electronic Warning System Operation and Compliance			
3	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
	• See and Avoid			
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

Degree of Risk: C.

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:

Situational Awareness of the Confliction and Action were assessed as **not used** because the Leeds Radar controller was not required to monitor the C172's flight under the terms of a Basic Service.

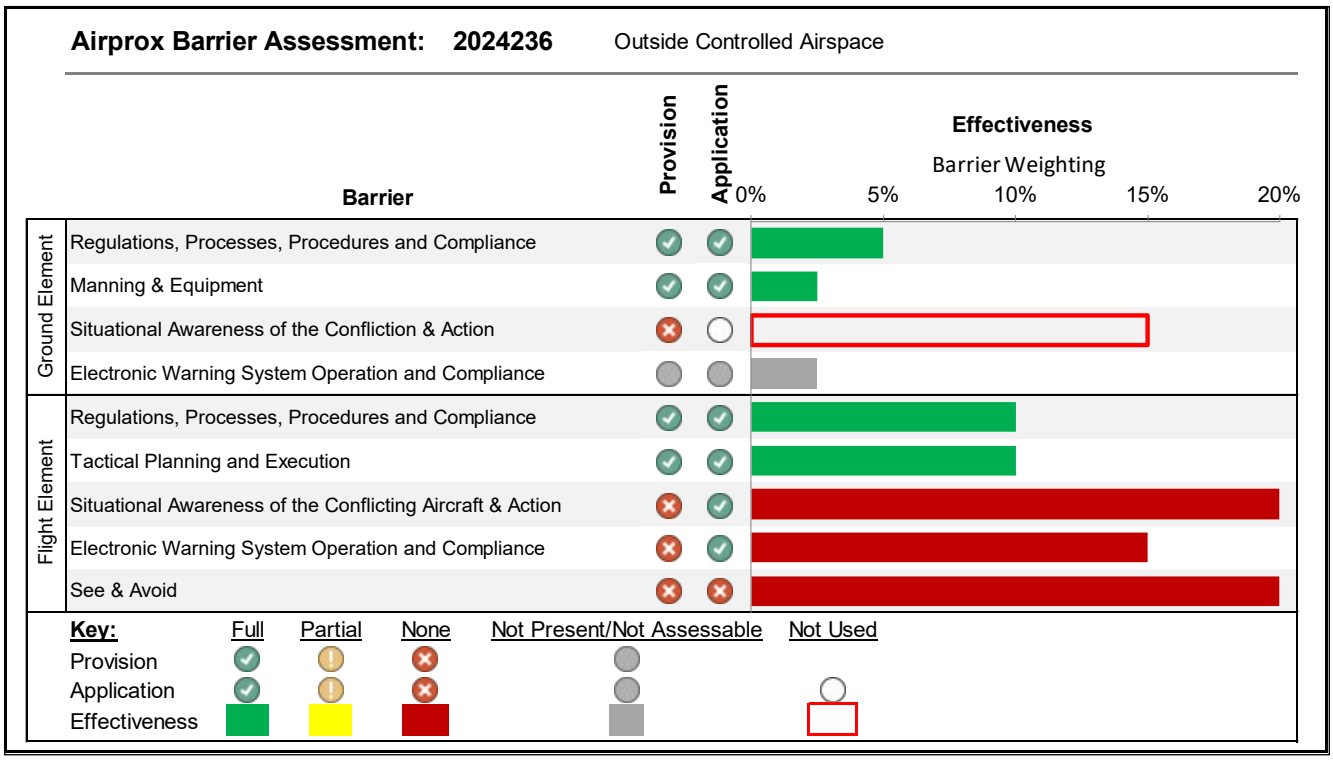
Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the C172 pilot did not have any situational awareness of the presence of the D112, and the D112 pilot had only generic situational awareness of the presence of the C172.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the equipment carried by the D112 was unable to register any electronic emissions from the C172.

See and Avoid were assessed as **ineffective** because neither pilot sighted the other aircraft in sufficient time to materially increase the spearation at CPA.

[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: 2024236
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