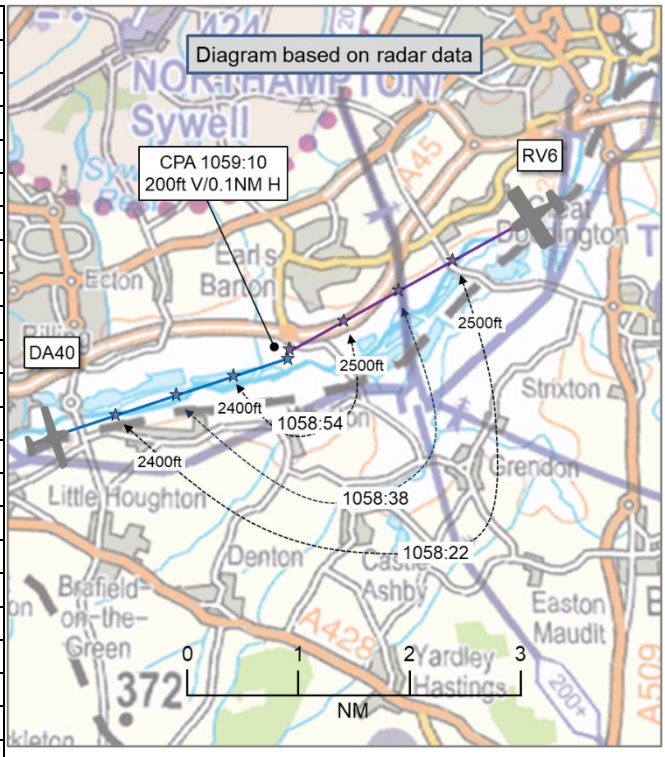
AIRPROX REPORT No 2024098

Date: 24 May 2024 Time: 1059Z Position: 5215N 00045W Location: 3NM SSE of Sywell

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	DA40	RV6
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	IFR	VFR
Service	Procedural	Listening Out
Provider	Cranfield	Birmingham Appr.
Altitude/FL	2600ft	2400ft
Transponder	A, C, S+	A, C, S
Reported		
Colours	White	Red, white, grey
Lighting	Landing	Landing
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2500ft	2000ft
Altimeter	QNH (1018hPa)	QNH
Heading	NK	~240°M
Speed	100kt	130kt
ACAS/TAS	TAS	PilotAware
Alert	TA	Information
Separation at CPA		
Reported	200ft V/0NM H	Not seen
Recorded	200ft V/0.1NM H	



THE DA40 PILOT reports that, on rejoining from a single-engine IFR flight, shortly before commencing an RNP approach, and at a busy time during the flight, the TAS gave an alert "traffic, 12 o'clock, 1 mile, same altitude". After looking for the traffic for a few seconds and then spotting it, the pilot had decided that the best course of action was to initiate a climb and managed to gain about 200ft before the aircraft had flown just underneath them. The DA40 pilot notes that they were under a Procedural Service, at 2500ft as cleared, on track DTY-ADSON. The event happened at 1059, 7NM west-northwest of ADSON (they recall that their track had been about 100°). [The pilot opined that] had they not taken immediate avoiding actions, it is likely a collision would have happened. They note that they had been looking out of course, but the combination of the particular phase of flight (busy), as well as slowing to approach speed and having a slightly higher nose attitude, led to them seeing [the RV6] at the last moment. The DA40 pilot reported it to ATC just after it happened. They discussed the event on the ground and the controller said after checking the FlightRadar24 track that it might have been an RV6. The DA40 pilot reports that the aircraft that they had seen could fit the type. It was white with red markings on the wings.

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

THE RV6 PILOT reports that they were pilot-in-command for this flight and had been notified of the Airprox by the owner of the aircraft, who had received an email from RAC. The pilot notes that they and the owner had flown the RV6 together regularly for 15 years and take it in turns to fly each sector, so [the owner] was in the right-hand seat for the relevant leg. They had both checked the weather and NOTAMs independently and the aircraft had been fully serviceable. During flight they use SkyDemon and [electronic conspicuity equipment] and also each have a kneepad PLOG and monitor the flight together using appropriate charts. For this flight they had flown mostly at 2000ft QNH as there was a layer of cloud above. Visibility was good. They had used LARS with Basic Service on the day. The reporting pilot believed that after Wittering they had been on a listening squawk with Birmingham and

were intending to call Brize Radar over Northampton. To avoid flying overhead Sywell they had made a detour left and were aware of aircraft in the vicinity. They had switched the landing lights on for conspicuity as they had aircraft ahead of them showing on [electronic conspicuity equipment]. Both pilots were busy looking out so did not contact Sywell. The owner was also monitoring [electronic conspicuity equipment] and both pilots remember that around this time they had a red circle apparently showing an aircraft about 400ft below and behind them. This stayed with them for some minutes and they wondered if it might have been a spurious return. The pilot had made an S bend turn to the left to see if any aircraft had been visible behind them and perhaps lose the contact, but nothing was seen. They don't know, but maybe this was the other aircraft mentioned in the Airprox. The pilot did make visual contact with a few aircraft enroute but not in close proximity and the flight continued to [their destination] as planned.

THE CRANFIELD CONTROLLER reports that the DA40 pilot had reported an Airprox on frequency at 1059, describing a light-aircraft with red wingtips that had caused them to change levels in order to avoid. There had been no aircraft on frequency at the time that would indicate they were in conflict with the DA40 or considered to be [pertinent] Traffic Information.

CRANFIELD SATCO reports that FPS and recordings suggested no aircraft on frequency which should have been in conflict. Consultation of [ADS-B tracking system] suggested the aircraft had been an RV6 which had not been on Cranfield's frequency.

Factual Background

The weather at Cranfield was recorded as follows:

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METAR EGTC 241050Z 25009KT 200V280 9999 SCT028 14/08 Q1018=
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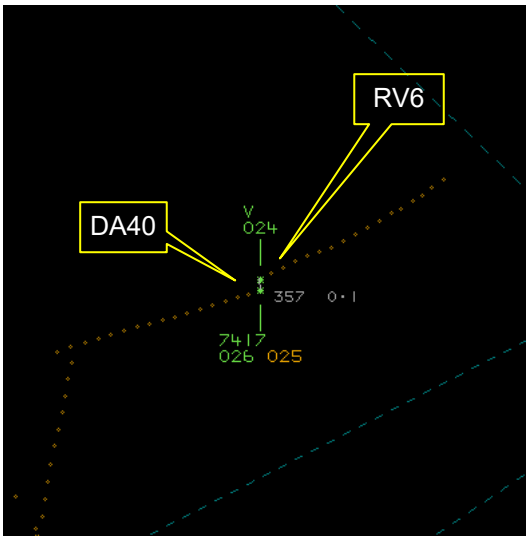
Analysis and Investigation

UKAB Secretariat



CPA 1059:10 200ft V/0.1NM H

The DA40 and RV6 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]

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

Summary

An Airprox was reported when a DA40 and an RV6 flew into proximity 3NM south-southeast of Sywell at 1059Z on Friday 24th May 2024. The DA40 pilot was operating under IFR in VMC and in receipt of a Procedural Service from Cranfield. The RV6 pilot was operating under VFR in VMC and was Listening Out on the Birmingham Approach frequency.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings and reports from the air traffic controllers involved. 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 DA40 pilot. Noting the nature of their flight, members acknowledged the use of a Procedural Service from Cranfield whilst conducting IFR flight training as the highest level of ATS available from that unit, but wondered whether other options had been available, such as a Traffic Service from East Midlands on a second radio. The Board was pleased to see the carriage and use of an active TAS by the DA40 pilot, noting that the situational awareness they had gained from it through a Traffic Alert (**CF3**), although late (**CF2**), had enabled a late visual acquisition of the oncoming RV6 (**CF5**).

Turning to the actions of the RV6 pilot, members noted that the pilot had been unaware of the Airprox or of the proximity of the DA40 (**CF6**). They recognised the nature of the flight and the diligence in their pre-flight preparations and use of aircraft lighting to improve visual conspicuity, but questioned the choice of Air Traffic Service, noting their stated choice of listening out on the Birmingham Approach frequency and, in a similar comment to that for the DA40 pilot, members had felt that a surveillance-based service from East Midlands might have been more beneficial, or a courtesy call to Sywell as they had passed might have alerted others to their presence. Members praised the carriage of electronic conspicuity equipment noting that they had reported an Information alert but recognised that this had likely been linked to the spurious return discussed in their filed report (**CF4**). The Board concluded that this, together with a lack of an active Air Traffic Service, had led to a lack of situational awareness of the presence of the DA40 (**CF2**).

In considering the actions of the Cranfield controller, members recognised the lack of surveillance equipment at the unit and the limitations this imposed on their ability to provide a service, meaning they had not had any situational awareness of the presence of other aircraft in the area (**CF1**). In discussing options going forward, members wondered whether Cranfield could, whilst awaiting completion of an active radar sensor, make use of FIDs (Flight Information Displays) to improve their area situational awareness in such cases.

Concluding their discussion, members summarised their thoughts. It was agreed that a lack of an active Air Traffic Service had contributed to reduced opportunity for situational awareness that had in turn been partially overcome through the use of electronic conspicuity equipment enabling the DA40 pilot to achieve a late sighting of the oncoming RV6. The pilot of the RV6 had been unaware of the proximity of the DA40 and had not gained visual contact at any point, leading members to agree that safety margins had been reduced below the norm and that, although the DA40 pilot had executed a late avoidance manoeuvre, there had been a risk of collision (**CF7**). As such, the Board assigned Risk Category B to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024098			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Situational Awareness and Action			
1	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, no or inaccurate Situational Awareness
	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	Contextual	• Other warning system operation	An event involving a genuine warning from an airborne system other than TCAS.	
4	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			
5	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
6	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			
7	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[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:

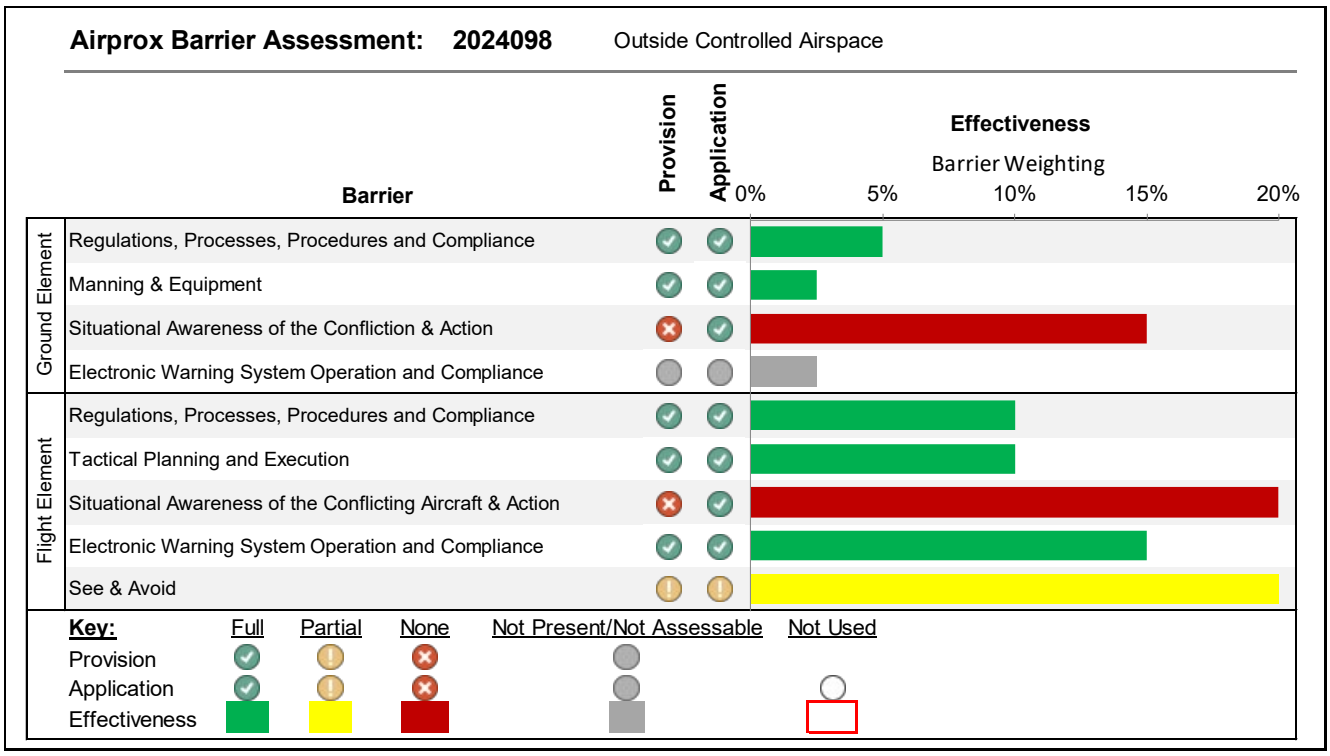
Situational Awareness of the Confliction and Action were assessed as **ineffective** because the Cranfield controller had no situational awareness of the presence of the RV6.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the RV6 pilot had no situational awareness of the DA40 and the DA40 pilot achieved only late situational awareness of the RV6.

See and Avoid were assessed as **partially effective** because the DA40 pilot achieved only a late sighting of the RV6 and the RV6 pilot did not achieve visual contact with the DA40.

[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: 2024098
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