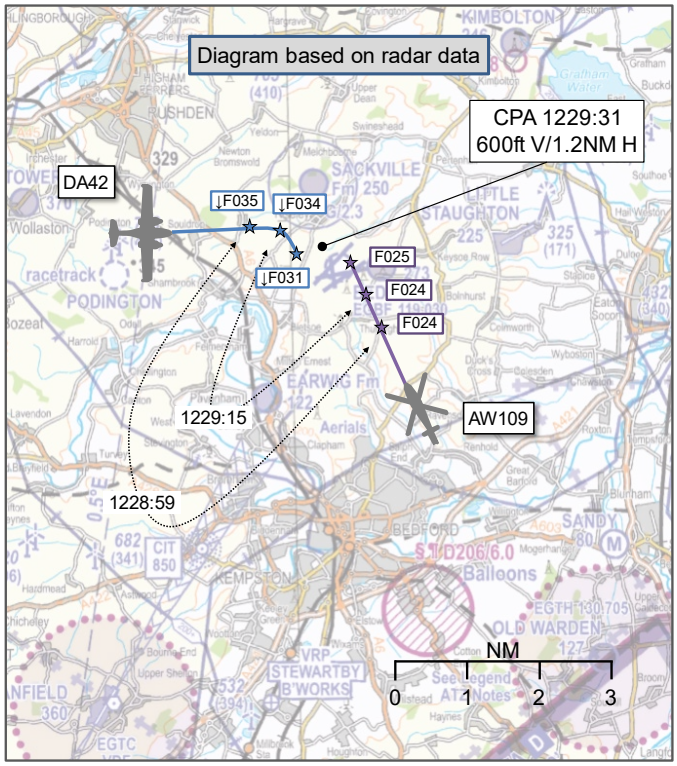
AIRPROX REPORT No 2024010

Date: 23 Jan 2024 Time: 1230Z Position: 5214N 00029W Location: 1NM S Bedford

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	DA42	AW109
Operator	Civ FW	Civ Helo
Airspace	London FIR	London FIR
Class	G	G
Rules	IFR	VFR
Service	Procedural	Traffic
Provider	Cranfield	Luton INT
Altitude/FL	FL032	FL024
Transponder	A, C, S	A, C, S
Reported		
Colours	White	NK
Lighting	'All on'	NK
Conditions	IMC	NK
Visibility	<5km	NR
Altitude/FL	3200ft	NK
Altimeter	QNH (1015hPa)	NK
Heading	160°	NK
Speed	125kt	NK
ACAS/TAS	TAS	TAS
Alert	Information	Information
Separation at CPA		
Reported	800ft V/0m H	NK
Recorded	600ft V/1.2NM H	



THE DA42 PILOT reports that they were conducting an RNP approach to RW21 at Cranfield. The cloudbase was broken at 700ft and the tops of the cloud were around 5000ft. They were IMC for the whole time. The last clearance from ATC was to maintain altitude 3500ft until ADSON and then cleared for the approach. After passing ADSON, they were descending to the platform altitude 2500ft. On passing 3200ft, they spotted an aircraft on their MFD map around 3NM ahead, 800ft below. The instructor took control from the student to level out. The conflicting aircraft seemed to pass directly below them, 800ft below from southeast to northwest. They then reported the aircraft to Cranfield Approach and asked to reposition for another attempt at the RNP.

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

THE AW109 PILOT chose not to submit a report.

THE CRANFIELD CONTROLLER reports that the DA42 passed ADSON at 1229Z conducting an RNP approach to RW21 at 3500ft. At 1230Z, the pilot reported traffic 800ft below, and asked if they were aware of any traffic. There was no other traffic on frequency at the time and no known traffic in the vicinity of that position to affect. The DA42 pilot opted to return to ADSON to attempt the IAP again. They latterly reported that they would be filing an Airprox.

THE LUTON INT CONTROLLER reports that they were the Luton Radar controller and were providing the AW109 with a Traffic Service outside CAS. They passed Traffic Information to the pilot on other aircraft operating in the area. The Airprox was not reported on frequency.

Factual Background

The weather at Luton was recorded as follows:

METAR EGGW 231220Z AUTO 20013G23KT 3000 DZ OVC004 08/08 Q1016

Analysis and Investigation

NATS Investigation

At 1216:31 the pilot of [the AW109] contacted the Luton INT (GW INT) frequency to request a VFR zone transit through the Luton CTR and a Traffic Service. The pilot then requested a south-to-north routeing via the eastern side of the Luton CTR.

The GW INT controller informed the pilot that the visibility at Luton was 3300m in slight drizzle and the cloud ceiling was overcast at 400ft. The pilot of [AW109 C/S] confirmed that the weather conditions to the east of the Luton CTR were satisfactory for VFR flight, and a transit clearance was issued (SSR 4670).

After the zone transit was complete, the [AW109] pilot was issued with a Traffic Service outside controlled airspace as they vacated the CTR at 1223:38. The pilot reported they intended to climb to altitude 2500ft.

[DA42 C/S] was performing manoeuvres in the vicinity of Bedford and displaying Mode C altitude of 3500ft. [DA42 C/S] was operating under SSR code 7417 (Cranfield Airport - IFR Conspicuity Purposes).

Figure 1 - Approximate tracks in relation to 1:500k VFR chart.

At 1227:44, the GW INT controller provided Traffic Information to the pilot of [the AW109], "*traffic just in your left eleven o'clock range of about seven miles indicating three thousand four hundred feet manoeuvring, I'll keep you updated*." The pilot of [the AW109] responded that they were maintaining 2500ft.

Further Traffic Information was provided at 1228:47, "*now in your half past ten, range about 5 miles three thousand four hundred feet indicated your left-to-right tracking eastbound*." The pilot responded, "*I've got him on TAS* [sic] *but not yet sighted but looking*." (see Figure 2).

Figure 2

The Mode-S displayed Selected Flight Level (SFL) for [DA42 C/S] changed from 3500ft to 2500ft at 1229:11 and the DA42 commenced descent.

Further Traffic Information was provided at 1229:30, "*that previously mentioned traffic is now passing down your left-hand side by about a mile and a half three thousand feet*" which was acknowledged by the [AW109] pilot. This information was passed coincident with the closest point of approach established on NODE multi track radar (see Figure 3).

Figure 3

The closest Point of Approach occurred at 1229:31 and was recorded on Multi-Track Radar as 1.2NM and 600ft. Immediately after the closest point of approach, the Mode C of [the DA42] changed to display climb to 3200ft when [the AW109 C/S] was maintaining altitude 2400ft.

At 1230:10, the GW INT informed the pilot of [the AW109] that the traffic was now "*well behind you*" and that they would now be receiving a Basic Service only. At 1233:15 the pilot of [the AW109] reported leaving the GW INT frequency with the intention to contact East Midlands. No report of an Airprox was provided on the RT.

Safety Investigations was informed on the 1st February 2024 that the pilot of one of the aircraft involved in this incident had reported it as an Airprox.

The pilot of [AW109 C/S], in receipt of a Traffic Service from the Luton Approach controller, received three separate instances of Traffic Information describing the positioning of [the DA42] which was manoeuvring in the vicinity of Bedford at altitude 3500ft. The pilot of [AW109 C/S] reported they did not have visual with the aircraft but could see their position on TCAS.

Just prior to the third report of Traffic Information, the pilot of [the DA42] had turned right onto a southerly track and descended to 3000ft to the west of [the AW109] that was maintaining 2400ft. Immediately after the closest point of approach, [the DA42] was observed to climb to 3200ft.

Closest Point of Approach occurred at 1229:31 and was recorded on Multi-Track Radar as 1.2NM and 600ft.

Cranfield Investigation

The RT recordings and FPS indicated that no other aircraft were on frequency at the time of the occurrence.

An analysis of the ADS-B system currently under trial indicated that the AW109 could be seen in the area.

UKAB Secretariat

The DA42 and AW109 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 DA42 pilot was required to give way to the AW109.[3]

Summary

An Airprox was reported when a DA42 and an AW109 flew into proximity 1NM south of Bedford at 1230Z on Tuesday 23rd January 2024. The DA42 pilot was operating under IFR in IMC, and in receipt of a Procedural Service from Cranfield. The AW109 pilot stated that they were operating under VFR although the flight conditions were not known; the pilot was in receipt of a Traffic Service from Luton Radar.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the DA42 pilot, radar photographs, 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 below, with the numbers referring to the Contributory Factors table displayed in Part C.

The Board first discussed the actions of the DA42 pilot. They noted that the pilot had been operating within cloud and had been receiving a Procedural Service from Cranfield. Therefore, when their TAS had indicated that there had been traffic beneath, at a level to which they had been about to descend, they had become concerned by its proximity. In fact, the AW109 had been at least a mile to the east of their position, but the Cranfield controller had not been able to give the DA42 pilot any information on the AW109 because they had been operating without surveillance equipment. Therefore, the DA42 pilot had taken the sensible precaution of climbing and re-positioning for their approach.

The Board was disappointed that the AW109 pilot had chosen not to participate in the Airprox process. However, much of the relevant detail had been gleaned from the ATC recordings. Therefore, members were able to say with certainty that the AW109 pilot had received information about the DA42 via Traffic Information from ATC, and had also received information from their TAS.

The Board then briefly looked at the role of ATC. Members noted that there had been little more that the Cranfield controller could have done in the circumstances; they had not had any situational awareness on the position of the AW109 and so could not have provided any Traffic Information to the

[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.

DA42 pilot. Members noted that Cranfield was trialling a flight information display and thought that, despite its limitations in displaying only ADS-B-equipped aircraft, this should improve ATC situational awareness for the future. For their part, the Luton controller had provided Traffic Information to the AW109 pilot on 3 occasions so, again, the Board thought that they had discharged their duties under the terms of a Traffic service and provided sufficient information to the AW109 pilot.

When determining the risk, members quickly agreed that normal safely parameters and standards had pertained and accordingly assigned risk category E; additionally, they agreed on the following contributory factors:

CF1. The Cranfield controller, operating without any surveillance equipment, had not received any situational awareness about the position of the AW109.

CF2. The DA42 pilot had been concerned by the proximity of the aircraft as shown on their TAS.

CF3. Both pilots had received information from their TAS equipment.

CF4. The aircraft had been obscured from one another because the DA42 had been in cloud.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024010			
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	Human Factors	• Unnecessary Action	Events involving flight crew performing an action that was not required	Pilot was concerned by the proximity of the other aircraft
	• 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.	
	• See and Avoid			
4	Contextual	• Visual Impairment	Events involving impairment due to an inability to see properly	One or both aircraft were obscured from the other

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:

Ground Elements:

Situational Awareness of the Confliction and Action were assessed as **ineffective** because the Cranfield controller had not had any situational awareness about the AW109.

Flight Elements:

[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 **not used** because the DA42 had been in cloud.