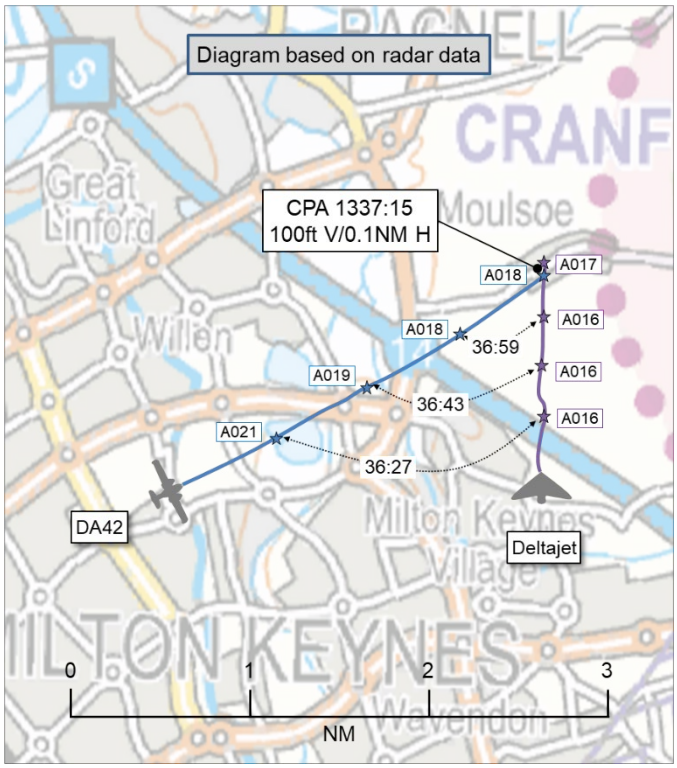
AIRPROX REPORT No 2024134

Date: 21 Jun 2024 Time: 1337Z Position: 5204N 00041W Location: 2.5NM W of Cranfield

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	DA42	Deltajet
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	None
Provider	Cranfield APP	N/A
Altitude/FL	1800ft	1700ft
Transponder	A, C, S	A, C, S
Reported		
Colours	White	Orange
Lighting	"All ON"	none
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1600ft	1000ft-2000ft
Altimeter	QNH (1011hPa)	QFE
Heading	090°	NK
Speed	115kt	60kt
ACAS/TAS	SkyEcho and TAS	Not fitted
Alert	None	N/A
Separation at CPA		
Reported	100ft V/1NM H	NK V/NK H
Recorded	100ft V/0.1NM H	



THE DA42 PILOT reports that, on rejoin from a lesson on the DA42, as they were entering the ATZ joining crosswind for RW21. Upon entering the ATZ still descending towards circuit altitude (they were at about 1600ft QNH), the trainee saw traffic on the left-hand side of the aircraft. They had not been warned by ATC of traffic below them coming in the opposite direction and, although they were looking out for the join, they were therefore not expecting to come across unknown traffic in the ATZ. The traffic was a paraglider with a motor (paramotor?), with a red delta wing. It was within the ATZ boundaries [they believed], flying in the opposite direction, probably about 100ft to 200ft below them. It was close enough that they could see the pilot in their seat and could tell they were wearing a lightly coloured t-shirt. The Airprox was reported to ATC at 1337Z and they continued their join to the circuit. They had [carry-on EC equipment] and a TAS onboard, the TAS never gave them an alert, and because they were entering the ATZ and they were about to demonstrate an asymmetric [(single engine failure)] they had turned off their iPad. They were the pilot flying and were actively teaching at this point.

The pilot further described that they were in a shallow descent towards circuit altitude, and took avoiding action by stopping the descent as it was too late to do anything else and, being sat on the right, they were struggling to see [the paramotor] with the engines on the wings. They reported the Airprox to ATC immediately.

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

THE DELTAJET PILOT reports that they did not see another aircraft in close proximity to them; they were unaware of an incident prior to the notice being filed. Their planned route initially took them through a clearing in the middle of Milton Keynes. As they approached from the south, their chosen route seemed more built-up than they had envisaged, so they began to leave their route, favouring a new track around the east side of the town. Once on the southern edge of Milton Keynes they decided that they were not happy with their land-out options and turned northeast to skirt the eastern side of Milton

Keynes before continuing in a northerly direction to intersect their planned route. They remained outside Cranfield's ATZ at all times. It was a lively day for a flexwing aircraft with blustery winds at their chosen height and quite a bit of thermic activity.

THE CRANFIELD APPROACH CONTROLLER reports that the [DA42 pilot] reported an Airprox on frequency. The other aircraft was described as a delta wing, motorised paraglider. There were no other known aircraft on frequency matching the description of the aircraft in confliction with [the DA42].

[The DA42] was joining crosswind to position left-hand downwind for RW21, from the vicinity of Newport Pagnell, latterly reporting that they encountered the other aircraft on the western edge of the ATZ.

Factual Background

The weather at Cranfield was recorded as follows:

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METAR EGTC 211320Z 24011KT 200V260 9999 FEW048 22/10 Q1011
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Analysis and Investigation

Cranfield ATC

The Senior Air Traffic Control Officer (SATCO) was in the Visual Control Room (VCR) at the time the Airprox was declared. The SATCO consulted the Flight Progress Strip (FPS) on the stripboard at the time and the ADS-B display under test in the VCR. There were no aircraft on frequency at the time which corresponded with the position report and description of the subject aircraft as described by the crew of [the DA42]. Subsequent consultation of FlightRadar24 indicated that it was likely a paraglider-type aircraft which was not in receipt of a service from Cranfield and was not visible from the VCR.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and both aircraft were identified throughout using Mode S data. The DA42 was seen maintaining an east-northeast heading, in a slow descent toward the CPA, and the Deltajet was heading north. The CPA occurred at 1337:15 with the Deltajet passing the 12 o'clock of the DA42 at a distance of 0.1NM and 100ft vertical separation (Figure 1).

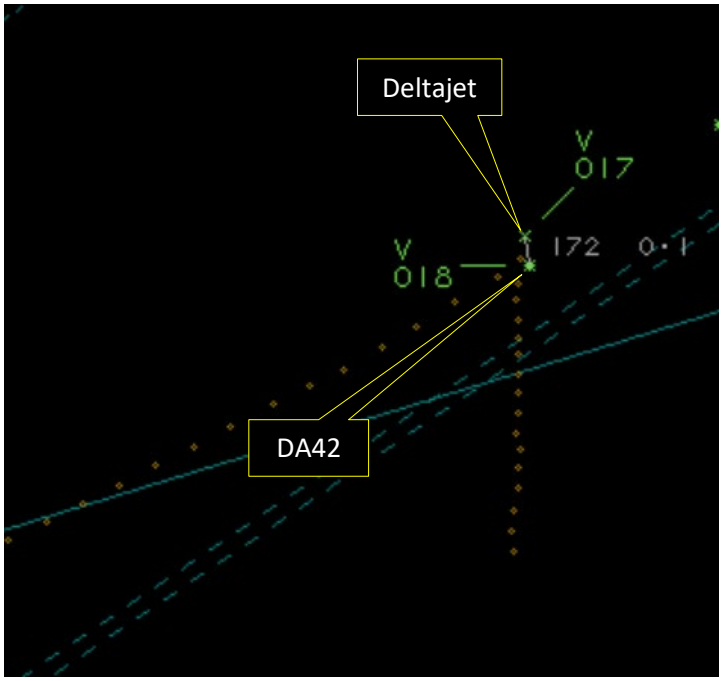

Figure 1- Time 1337:15 CPA separation 0.1NM and 100ft

The DA42 and Deltajet 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 DA42 pilot was required to give way to the Deltajet.[2] If the incident geometry is considered as overtaking then the Deltajet pilot had right of way and the DA42 pilot was required to keep out of the way of the other aircraft by altering course to the right.[3]

Summary

An Airprox was reported when a DA42 and a Deltajet microlight flew into proximity at 2.5NM west of Cranfield at 1337Z on Friday 21st June 2024. Both pilots were operating under VFR in VMC, the DA42 pilot in receipt of a Basic Service from Cranfield Approach and the Deltajet pilot not in receipt of an ATS.

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 DA42 pilot and noted that the pilot had had TAS fitted to their aircraft and had also made use of a portable EC device, but that the DA42's TAS had not detected the Deltajet (**CF4**). Members debated whether the pilot had made optimal use of their EC equipment when they had turned off their tablet, effectively losing their ability to display proximate traffic detected by their EC receiver. Some members were confused by this action but acknowledged that this may not have had a direct impact in this instance, or that maybe there had not been a suitable place for the tablet to have been situated during the approach phase of the flight. Members agreed that the DA42 pilot had not had any situational awareness of the Deltajet, as there had not been any EC information and no information had been passed by the Cranfield controller (**CF3**). The Board agreed that, as the DA42 student had not seen the Deltajet until it had passed underneath them onto their left-hand side, the DA42 pilot had had an effective non-sighting of the Deltajet (**CF5**).

Turning their attention to the actions of the Deltajet pilot, the Board discussed the rerouting that the pilot had made, and whether they had prepared sufficiently to have considered the potential of conflicting traffic when passing close to an active airfield. Members were impressed that the Deltajet had been fitted with a transponder, but thought that it was unfortunate that the pilot had not had any additional EC equipment. The Board wondered why the pilot had not spoken with Cranfield ATC to inform them of their position and listen to the local traffic, and agreed that they could have done so (**CF2**). Members further agreed that had the pilot had additional EC equipment and an ATS from Cranfield that this would have improved their situational awareness, whereas in the event they had not had any situational awareness of the presence of the DA42 (**CF3**). Furthermore, the Board noted that the Deltajet pilot had not only been unaware of the DA42, but had remained unsighted on them, noting that the DA42 had been behind the Deltajet and overtaking from the left-handside.

The Board then looked at the actions of the Cranfield Approach controller and agreed that the controller had not been required to monitor to DA42's flight under the terms of a Basic Service (**CF1**) and that, without the benefit of surveillance-derived information, the controller had been unlikely to have been of help with the unknown Deltajet traffic.

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

Concluding their discussions, the Board turned to the determination of risk and agreed that the separation between the DA42 and the Deltajet had been such that safety had been much reduced and that there had been a risk of collision (**CF6**). As such, the Board assigned Risk Category B to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024134			
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			
	• Tactical Planning and Execution			
2	Human Factors	• Communications by Flight Crew with ANS	An event related to the communications between the flight crew and the air navigation service.	Pilot did not request appropriate ATS service or communicate with appropriate provider
	• Situational Awareness of the Conflicting Aircraft and Action			
3	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			
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	• 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			
6	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[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 **not used** because the Cranfield Approach controller was not required to monitor the DA42's flight under the terms of a Basic Service.

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the Deltajet pilot could have requested an ATS from Cranfield on passing its ATZ.

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

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither the DA42 pilot nor the Deltajet pilot had any situational awareness of the presence of the other's aircraft.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the DA42's TAS had not detected the presence of the Deltajet and the DA42 pilot had turned off the screen for monitoring traffic detected by their additional EC device.

See and Avoid were assessed as **ineffective** because the DA42 pilot only saw the Deltajet after CPA, and the Deltajet pilot had not seen the DA42.