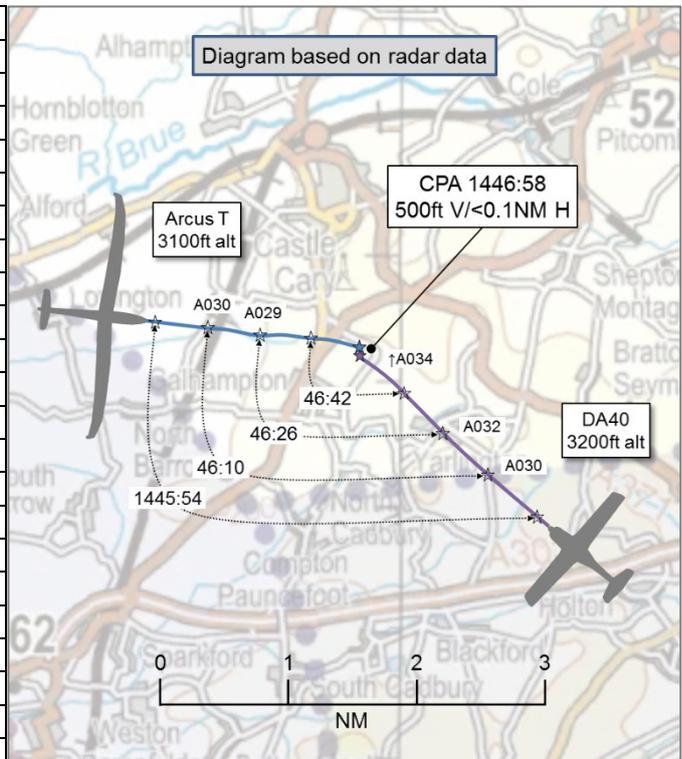


**AIRPROX REPORT No 2020076**

Date: 22 Jul 2020 Time: 1447Z Position: 5104N 00230W Location: 6NM NE Yeovilton

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	Arcus T	DA40
Operator	Civ Gld	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Basic
Provider	Yeovilton LARS	Yeovilton LARS
Altitude/FL	2900ft	3400ft
Transponder	A, C, S	A, C, S
<b>Reported</b>		
Colours	White/red	White
Lighting	NR	NR
Conditions	VMC	VMC
Visibility	NR	>10Km
Altitude/FL	3200ft	NR
Altimeter	QNH (1025hPa)	NR
Heading	NR	NR
Speed	70kt	NR
ACAS/TAS	PowerFLARM	TAS
Alert	None	Unknown
<b>Separation</b>		
Reported	NR V/0m H	Not Seen
Recorded	500ft V/<0.1NM H	



**THE ARCUS T GLIDER PILOT** reports that they were on the return leg of a cross-country flight on an easterly track back to their destination airfield. Their routing appeared that it would take them close to the Yeovilton airfield overhead. They were gliding between thermals in a gentle descent and the frequency was quite busy; no Traffic Information was received. The handling pilot in the rear cockpit was only aware of the traffic as a rapidly moving silhouette against the bright sky as it passed overhead on a reciprocal track. The traffic was obscured by the front cockpit until overhead. Immediately after sighting the traffic, the handling pilot commenced a right turn and a rear view of the aircraft was seen by both pilots. It was believed to be a low-wing single-engine propeller light-aircraft.

The pilot assessed the risk of collision as ‘High’.

**THE DA40 PILOT** reports that the flight was a progress test that included a GH component; this included upper air work and a PFL. At no point did they see a glider or other aircraft come within an unsafe distance of their position. It was only after being briefed by their safety officer that they became aware that an Airprox had been filed.

**THE YEOVILTON LARS CONTROLLER** reports that the incident in question took place during a period of high traffic levels and high controller workload, with multiple Basic Service aircraft on frequency. No Airprox was called on frequency, but the aircraft involved were operating VFR to the NE of Yeovilton. Upon being informed of a potential Airprox having been submitted by a civilian pilot, they immediately secured a tape transcript of the incident as well as a radar replay.

The controller perceived the severity of the incident as ‘Low’.

**THE YEOVILTON RADAR SUPERVISOR** reports that, although they don't remember any specific Airprox incident, they do recall that the unit and the radar controller on the LARS frequency were very busy with multiple aircraft on their frequency and a significant amount of non-squawking traffic (believed

to be gliders) operating in the vicinity of the MATZ. They recall the weather that day as being good with the vast majority of aircraft operating under VFR.

## Factual Background

The weather at Yeovilton was recorded as follows:

METAR EGDY 221450Z 20011KT 9999 FEW040 22/10 Q1022 NOSIG RMK BLU BLU=

## Analysis and Investigation

### UKAB Secretariat

Yeovilton ATC provided screenshots of their radar display and a transcript of the radio frequency in use at the time. For the purposes of incident investigation, the NATS radar replay was used as this provided a dynamic picture of the event.

The Arcus glider pilot had agreed a Basic Service with the Yeovilton Radar controller and had been on the frequency during their entire overflight of the Yeovilton MATZ. Analysis of the NATS radar replay revealed that, on reaching the lateral MATZ boundary (the Mode C indicated that they were above the MATZ), the Arcus pilot turned onto an east-south-easterly heading and towards the DA40 (see Figure 1). Coincident with the glider pilot's turn, the DA40 pilot called Yeovilton Radar and requested a Basic Service, which was agreed and a squawk issued by the Yeovilton controller. The DA40's squawk was seen to change to that issued by the controller at 1445:30 (Figure 2); the aircraft are separated by 1.5NM and 300ft at this time.

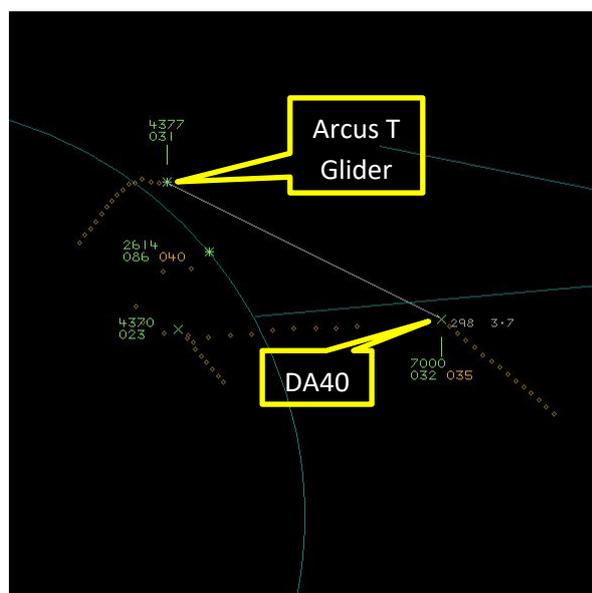


Figure 1 – 1445:50

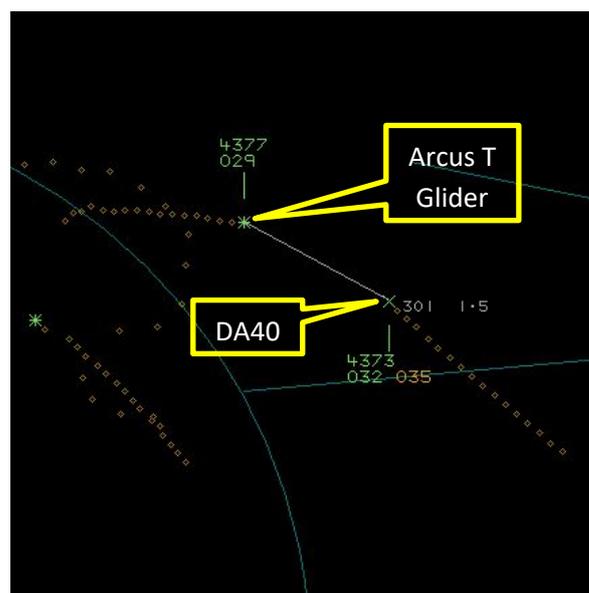


Figure 2 – 1445:30

Analysis of the tape transcript shows that, after this exchange with the DA40 pilot, the Yeovilton controller was busy with a number of other aircraft; it is likely that this high workload led to the controller not noticing the proximity of the 2 Airprox aircraft, albeit both pilots were under a Basic Service. CPA occurred at 1446:58 and was measured at <0.1NM lateral and 500ft vertical separation (see Figure 3).

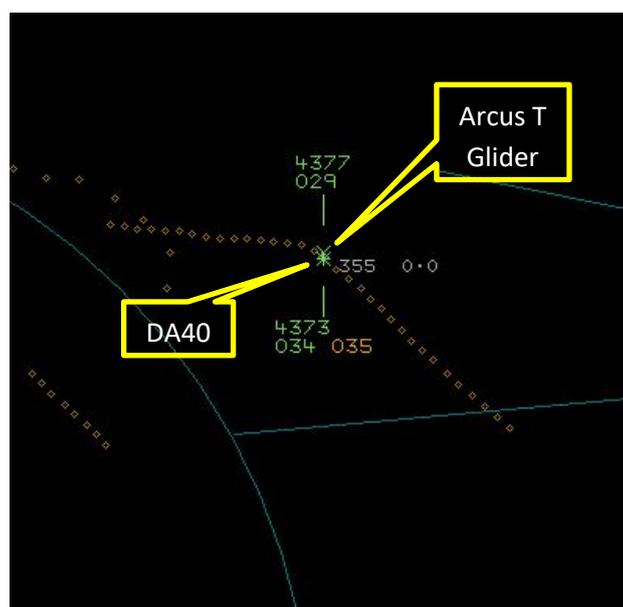


Figure 3 - 1446:58 - CPA

The Arcus glider and DA40 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.<sup>1</sup> If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right.<sup>2</sup> If the incident geometry is considered as converging then the DA40 pilot was required to give way to the Arcus glider.<sup>3</sup>

## Comments

### Navy HQ

This AIRPROX highlights the non-prescriptive nature of class G Airspace. Both aircraft were in receipt of a Basic Service from the Yeovilton LARS controller. Owing to high controller workload at the time of the Airprox, which was not declared on frequency, and no perception of a definite risk of collision from surveillance-derived information, generic Traffic Information was not passed to either pilot. Although a MATZ overflight for the DA40 was approved, there was no instruction to maintain a specific altitude. The flight profile of the DA40 is a common occurrence in the vicinity of Yeovilton. The Airprox was not called on frequency, with Yeovilton ATC informed by the Airprox investigator via Navy Command ATM Safety.

### BGA

It's very good to see a glider using an ATS and squawking, especially in such a busy area. Traffic Information is very unlikely to be provided under a Basic Service, especially if the controller is busy. Where a pilot believes an Airprox has occurred, it's best to report that to the ATS immediately wherever possible.

## Summary

An Airprox was reported when an Arcus T glider and a DA40 flew into proximity 6NM NE of Yeovilton at 1447Z on Wednesday 22<sup>nd</sup> July 2020. Both pilots were operating under VFR in VMC and both pilots were in receipt of a Basic Service from Yeovilton Radar.

<sup>1</sup> SERA.3205 Proximity.

<sup>2</sup> SERA.3210 Right-of-way (c)(1) Approaching head-on.

<sup>3</sup> SERA.3210 Right-of-way (c)(2) Converging.

## **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available consisted of reports from the pilots of both aircraft, transcripts of the relevant RT frequencies, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities. 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.

Due to the exceptional circumstances presented by the coronavirus pandemic, this incident was assessed as part of a 'virtual' UK Airprox Board meeting where members provided dial-in/VTC comments.

The Board first discussed the actions of the glider pilot and was heartened to note that they had requested and agreed a Basic Service from Yeovilton in the knowledge that they were going to be overflying the airfield. However, and as a general point that was also applicable to this encounter, the Board wished to highlight to pilots that Traffic Information can only be expected to be forthcoming under a Traffic or Deconfliction Service. As it was, no Traffic Information had been provided to the glider pilot by the Yeovilton controller, and there had been no indication of the presence of the DA40 on their PowerFLARM equipment, so they had had no situational awareness of the presence of the DA40 (**CF2**). Members agreed that the first that the glider pilot had known of the proximity of the DA40 had been as it had passed overhead, which was too late for the glider pilot to have taken any action to increase separation (**CF3**) and the glider pilot had been concerned by how close the DA40 had passed (**CF4**).

The Board then considered the actions of the DA40 pilot. Members again discussed the relative benefits of a surveillance-based Air Traffic Service and felt that the DA40 pilot may have been better served requesting a Traffic Service. That said, the frequency was clearly very busy and so this alone would not necessarily have guaranteed that Traffic Information on the glider would have been passed to the DA40 pilot. The Board noted that the DA40 had been fitted with a TAS, but that there had been no mention by the pilot of any indication from this equipment of the presence of the (transponder-equipped) glider and so members concluded that there had been no TAS indication and, therefore, the DA40 pilot had not had any situational awareness of the presence of the glider (**CF2**). Furthermore, the DA40 pilot's report stated that they had not seen a glider come within an unsafe distance of their position and so the Board surmised that the DA40 pilot had, in fact, not seen the Airprox glider (**CF3**).

Turning to the actions of the Yeovilton controller, the Board heard from a military controller member that the Yeovilton frequency had been extremely busy at the time of the Airprox. Members acknowledged that this had led to the controller being unable to validate and verify the squawk that they had issued to the DA40 pilot prior to the Airprox occurring and that this was pertinent because, had the controller had the opportunity to validate and verify the squawk, then it would have been highly likely that they would have noticed the relative positions of the DA40 and glider. Notwithstanding, the controller was not required to monitor the aircraft under a Basic Service (**CF1**) and so the Board felt that this had been contributory to the Airprox.

Finally, the Board discussed the risk involved in this event. Members noted that the glider pilot stated that they only saw the DA40 as it passed overhead and cast a shadow over their cockpit and that the DA40 pilot reported not having seen the glider. However, the Board was fortunate to have at their disposal the radar replay showing both aircraft in 3 dimensions, thus allowing an accurate CPA to be measured. Although the aircraft had passed each other effectively unseen by either pilot, there had, nonetheless, been 500ft of vertical separation between the 2 aircraft. Therefore, members agreed that, although safety had been reduced, there had been no actual risk of collision; Risk Category C.

**PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK****Contributory Factors:**

2020076			
CF	Factor	Description	Amplification
<b>Ground Elements</b>			
• Situational Awareness and Action			
1	Contextual	• ANS Flight Information Provision	Not required to monitor the aircraft under the agreed service
<b>Flight Elements</b>			
• Situational Awareness of the Conflicting Aircraft and Action			
2	Contextual	• Situational Awareness and Sensory Events	Pilot had no, late or only generic, Situational Awareness
• See and Avoid			
3	Human Factors	• Monitoring of Other Aircraft	Non-sighting or effectively a non-sighting by one or both pilots
4	Human Factors	• Perception of Visual Information	Pilot was concerned by the proximity of the other aircraft

**Degree of Risk:** C

**Safety Barrier Assessment<sup>4</sup>**

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 Yeovilton controller was not required to monitor either aircraft under their respective agreed Services.

**Flight Elements:**

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **ineffective** because neither pilot received any warning of the presence of the other aircraft, either through Traffic Information from the Yeovilton controller or from their respective on-board systems.

**See and Avoid** were assessed as **ineffective** because the DA40 pilot did not see the glider, and the Arcus T glider pilot only saw the DA40 as it passed overhead.

<sup>4</sup> 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: 2020076** 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	✗	✗			
<b>Key:</b>		Full	Partial	None	Not Present/Not Assessable	Not Used
Provision	✓	⚠	✗	●		
Application	✓	⚠	✗	●	○	
Effectiveness	■	■	■	■	□	