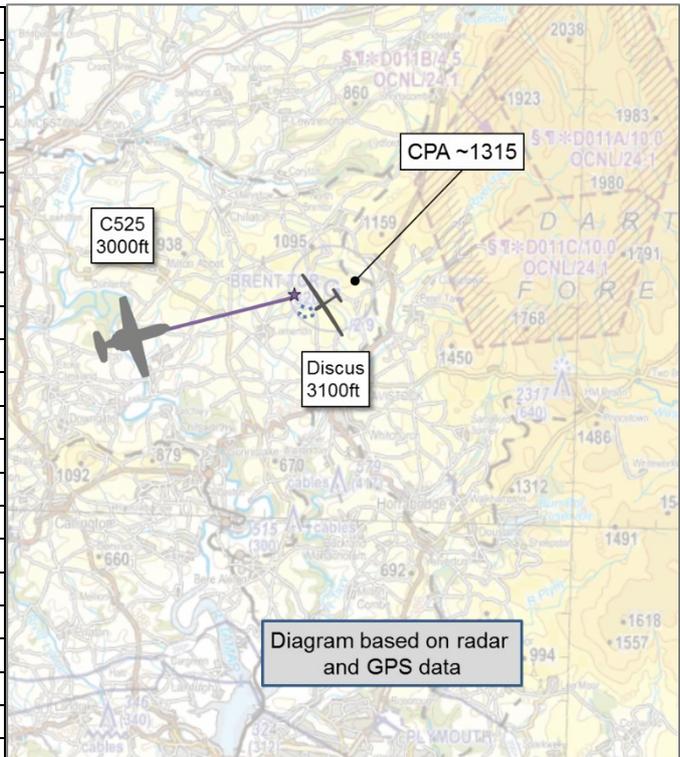


**AIRPROX REPORT No 2018303**

Date: 29 Sep 2018 Time: 1315Z Position: 5035N 00409W Location: Dartmoor

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	Discus	C525
Operator	Civ Gld	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	Traffic
Provider		Newquay
Altitude/FL	3100ft	3000ft
Transponder	Not Fitted	A, C, S
<b>Reported</b>		
Colours	White	White
Lighting	None	NR
Conditions	VMC	VMC
Visibility	15km	
Altitude/FL	3100ft	5000ft
Altimeter	QNH (1013hPa)	NK
Heading	240°	090°
Speed	60kt	180kt
ACAS/TAS	FLARM	TCAS II
Alert	Unknown	None
<b>Separation</b>		
Reported	500ft V/500m H	>500ft V/1nm H
Recorded	NK	



**THE DISCUS PILOT** reports that he was soaring locally to his launch site when he heard jet noise. The jet had flown past below and ‘to one side’ before he managed to see it and so there was no opportunity to take avoiding action. He noted that the aircraft had been seen about an hour earlier flying eastbound, but on that occasion was above the gliders soaring at 1500ft and there was some concern that it had overflowed twice and was not visual with the gliders.

He assessed the risk of collision as ‘Medium’.

[UKAB Note: The Discus pilot submitted the report 6 weeks after the event. The C525 flew westbound at around 1200hrs and eastbound at 1315hrs]

**THE C525 PILOT** reports that he was informed about the Airprox some 6 weeks after the event. However, assuming it was the glider that he could recollect on a training flight, the incident took place over Dartmoor in perfect VMC conditions - he particularly remembered the day because it was perfect with almost no cloud. He noted that as an instructor who is well acquainted with the area, he is always extra vigilant regarding gliding sites and parachuting sites in the vicinity. In this case, he wasn’t the pilot flying and had spotted the glider quite a way out. He brought it to the attention of the PF, but they were above and there was no potential conflict. He acknowledged that it was possible that the glider he was visual with was not the one who reported the Airprox. He was flying VFR with a radar service but he continued to look out because of the amount of traffic in the area which wouldn’t necessarily paint on the radar.

He assessed the risk of collision as ‘None’.

**THE NEWQUAY CONTROLLER** reports that Newquay were informed about the Airprox on the 20<sup>th</sup> Nov and, due to the time elapsed, the controller could remember very little about the incident.

Furthermore, the radar recordings had been overwritten and so were not available for inspection. The glider pilot did phone Newquay ATC but did not mention that he would be filing an Airprox; to the assistant who took the call he seemed to just want a general chat about Newquay and its traffic. Had he mentioned at that time that he intended to report an Airprox, appropriate action would have been taken to preserve the radar data.

## Factual Background

The weather at Newquay was recorded as follows:

METAR EGHQ 291250Z 08005KT 9999 FEW032 15/08 Q1027

Although the Newquay radar was not available, the NATS radar did show the C525 on his transit. The radar is showing the C525 at FL026, the LON QNH was 1027hPa, giving a 378ft difference and putting the C525 at 3000ft. The gliders could not be seen on the NATS radar.

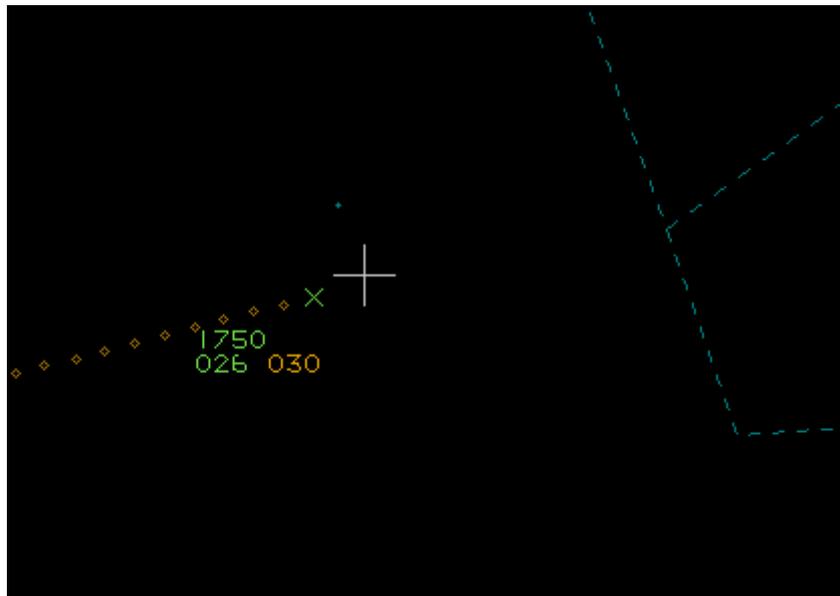


Figure 1: 1315:01 Brent TOR glider site marked by the white cross

## Analysis and Investigation

### UKAB Secretariat

The Discus and C525 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 C525 pilot was required to give way to the glider<sup>3</sup>.

### Occurrence Investigation

Newquay ATC provided an ATC Unit Investigation report - although the Newquay radar was not available for the Newquay investigation, the flight progress strips (FPS) and RT recordings were. The C525 arrived at Newquay at 1209hrs to carry out a training detail. The Tower FPS recorded that the C525 departed at 1306, requesting a cruise altitude of 3000ft and was transferred to Newquay Radar at 1307. At 1307:24 the C525 pilot checked in on frequency and requested, and was given, a Traffic Service. Minimum Sector Altitude (MSA) within 25nm of Newquay is 3000ft so there was no reduction in service and Traffic Information was given on various contacts operating

<sup>1</sup> SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.

<sup>2</sup> SERA.3210 Right-of-way (c)(1) Approaching head-on. MAA RA 2307 paragraph 13.

<sup>3</sup> SERA.3210 Right-of-way (c)(2) Converging. MAA RA 2307 paragraph 12.

to the east of Newquay. Whilst within 25nm of Newquay, the controller initiated the handover for transfer of the flight to Exeter ATC. Having ascertained the route of the aircraft in respect to the Dartmoor danger areas (D011A, B, C), which were not active, Exeter issued a squawk and frequency. Before the controller could pass the squawk and frequency and transfer the C525 to Exeter, they become involved in several calls from other aircraft. Now beyond 25nm from Newquay, where the MSA is 3400ft, the Traffic Service should have been reduced with a warning of limited Traffic Information due to radar coverage; however, due to RT loading the controller was not able to do this. As soon as there was a gap in the radio traffic, the controller passed the Exeter squawk to the C525 pilot. Again, other radio calls delayed the transfer of the aircraft to Exeter's frequency, and at 1315:45 the transfer was concluded.

Given the level of the gliding traffic, its range from Newquay, the limited reflection characteristics of composite gliders, the lack of a functioning transponder and their small radar cross section it is extremely unlikely that the reporting glider was displayed to the Newquay Radar controller.

CAP744 UK Flight Information services states that under a Traffic Service

*'The controller shall pass traffic information on relevant traffic, and shall update the traffic information if it continues to constitute a definite hazard, or if requested by the pilot. However, high controller workload and RTF loading may reduce the ability of the controller to pass traffic information, and the timeliness of such information'*

## Comments

### BGA

It is unfortunate that the delay in reporting this Airprox meant that some relevant data was not available. Timely and accurate reporting is essential to support proper investigation whilst memories are fresh. However, the radar data confirms that the C525 flew overhead the promulgated launch site for Brent Tor just above the chart-marked maximum winch launch height. By good fortune the separation in this incident was adequate; however, the risks of collision with a glider are significant when routing close to or overhead gliding sites.

## Summary

An Airprox was reported when a Discus and a C525 flew into proximity overhead Dartmoor at 1315hrs on Saturday 29<sup>th</sup> September 2018. Both pilots were operating under VFR in VMC, the glider pilot was not in receipt of an ATS and the C525 pilot was in receipt of a Traffic Service from Newquay.

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

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

The Board first looked at the actions of the C525 pilot. He had requested a Traffic Service from ATC and, at 3000ft, was above most GA transits (typically 1000-2000ft) which provided some mitigation against mid-air collision risk. That being said, although he was flying above the Brent Tor glider site maximum winch-launch height, some members wondered whether he had been aware of its location and, if so, whether he could have avoided the site laterally rather than flying directly in the overhead. In this respect, glider members commented that gliders often use the overhead to climb and so it is an area where gliders are very likely to be encountered. There followed a debate about how much to avoid a glider site by, with members noting that the C525 pilot was 100ft above the promulgated winch-launch maximum height. Although this met the guidance for avoiding gliding sites and winch-launch maxima, members agreed that it would have been good airmanship to have ensured a greater buffer. That being said, it was pointed out that the Airprox wasn't in the glider site overhead anyway, but was to the southwest. Furthermore, the glider pilot had reported that there were multiple gliders airborne in

the vicinity and so it was less than clear that avoiding overflying the glider site itself would have made a significant difference. The Board noted that C525 pilot was reporting some time after the event, and had recalled seeing the glider below him. In contrast, the glider pilot reported that he was above the C525. The Board were uncertain as to whether the C525 pilot had mis-remembered, had seen the glider earlier when it was still below and climbing, or whether he had seen a different glider. In the end members thought that he had probably seen a different glider.

Turning to the glider pilot, the Board noted that the delay in his reporting the incident had resulted in a loss of information from the other parties and Board members commented that had he mentioned the Airprox to Newquay ATC when he telephoned them later that day, they would have set the process in motion for preserving their radar data. Noting that the direction of the C525 was incorrectly reported, and that the glider pilot had stated that he had not seen the C525 until it had flown past below, some members wondered whether the glider pilot had also mis-remembered the incident at least in some part, and whether the report was coloured by concern that the C525 may have flown through their overhead below the winch-launch height rather than a specific concern about proximity. Nevertheless, a comparison of the NATS radar recording<sup>4</sup> to the glider GPS track data indicated that the two aircraft were probably somewhere in the region of 100ft vertically and 0.3nm horizontally separated. Not being transponder equipped, it was unfortunate that the glider could not be seen on the Newquay radar or picked up by the C525 TCAS II thus negating 2 of the available safety barriers to MAC.

The Board briefly looked at the role of ATC and noted that the time elapsed between the Airprox and its being reported had meant that the Newquay radar recordings were not available. However, members agreed that Newquay ATC had conducted a thorough investigation despite this, and commended them for their pro-active approach to Airprox investigations. Members noted that the controller was working at the limits of his radar coverage in the Brent Tor region, and he probably should have reduced the C525's Traffic Service, but the RT recording indicated that he was very busy at the time. That he didn't give Traffic Information on the glider probably meant that it wasn't showing on his radar because he passed information on other aircraft. Controller members again commented that if the glider had been equipped with a transponder the Newquay controller would have been able to see it and thus provide the C525 pilot with Traffic Information. As it was, without any knowledge of its position, the Board thought that there was little more that the controller could have done.

In determining the cause of the Airprox, it was clear that the glider pilot had not seen the C525 until after it had flown past but the Board debated at some length whether the C525 had seen the glider or not. In the end, given the disparity of height and separation (the C525 pilot had reported 1nm separation), the Board agreed that he probably had not, and that the glider he had seen was not the one he had had the Airprox with. Therefore, then Board agreed that the cause had been effectively a non-sighting by the Discus pilot (because he had seen the C525 after it had flown past) and probably a non-sighting by the C525 pilot. Turning to the risk, the separation indicated by the GPS and radar data, backed up by the glider pilot's estimate, was such that the Board agreed that although safety had been reduced, there had been no risk of collision; risk Category C.

### **PART C: ASSESSMENT OF CAUSE AND RISK**

Cause: Effectively a non-sighting by the Discus pilot and probably a non-sighting by the C525 pilot.

Degree of Risk: C.

#### Safety Barrier Assessment<sup>5</sup>

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

<sup>4</sup> Although not used by Newquay, the NATS radars were available to the UKAB but only the C525 could be seen.

<sup>5</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

**ANSP:**

**Situational Awareness and Action** were assessed as **ineffective** because the Newquay controller could not see the gliders on his radar and so had no situational awareness about them.

**Flight Crew:**

**Situational Awareness and Action** were assessed as **ineffective** because neither pilot had any information about the other aircraft.

**Warning System Operation and Compliance** were assessed as **ineffective** because the FLARM on the glider and the TCAS II on the C525 were incompatible.

**See and Avoid** were assessed as **ineffective** because the glider pilot saw the C525 as it flew past, and, although the C525 pilot reported seeing a glider, it was assessed that this was probably not the glider in question.

