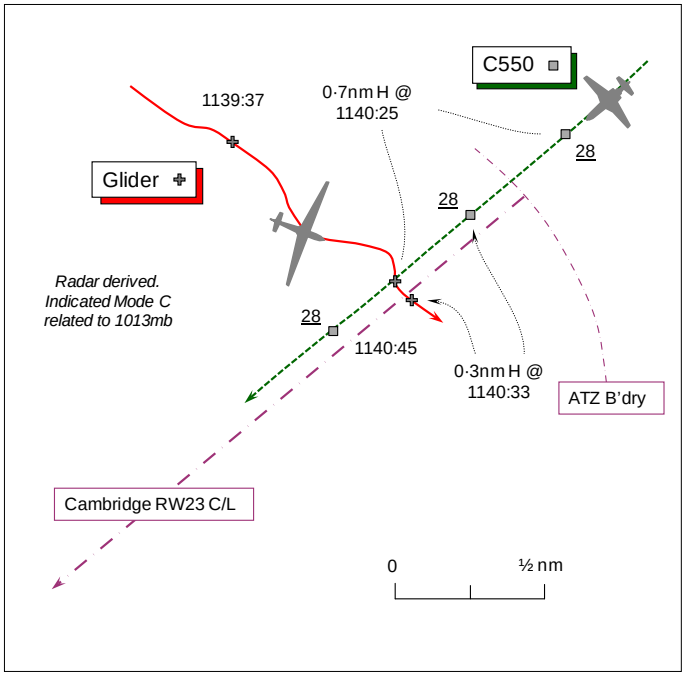
AIRPROX REPORT No 2011069

Date/Time:	2 Jul 2011 1140Z (Saturday)	
Position:	5213N 00013E (2nm NE of Cambridge Airport - elev 47ft)	
Airspace:	London FIR	(*Class:* G)
	Reporting Ac	*Reported Ac*
Type:	C550B	Discus Glider
Operator:	Civ Comm	Civ Club
Alt/FL:	3000ft QNH (1020mb)	3600-5000ft QNH
Weather:	VMC NR	VMC Clear Sky
Visibility:	10nm	20km
Reported Separation:	200-300ft V/nil H	500ft +V
Recorded Separation:	Not recorded	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE CESSNA CITATION II C550B PILOT (C550) reports he was inbound to Cambridge Airport at 160kt under IFR in VMC and in receipt of a 'Radar Control' service, he thought, from Cambridge ATC. Flying the LLZ course for RW23 level at 3000ft a glider appeared very close overhead about 200-300ft above his ac in what seemed like a diving turn with a nose-down attitude. The glider was not evident on his ac's TCAS and its pilot was not in RT contact with ATC. The glider was seen too late and was already astern before avoiding action could be taken. He reported the Airprox to TWR on RT.

UKAB Note (1): The RW in use at Cambridge was RW05; the C550B pilot initially requested an IFR approach to RW23 that was approved by ATC. Subsequently, the C550 was broken off from the instrument approach to RW23 and instructed to make an approach to RW05. It was whilst flying through, prior to commencing the approach to RW05, that the Airprox occurred.

THE SCHEMPP-HIRTH DUO DISCUS GLIDER PILOT, who may or may not be the reported glider pilot, reports he had departed from Gransden Lodge GS and was flying about 1nm N of Cambridge RW centre line at about 3600 – 5000ft QNH, turning to the R in a thermal at 50-55kt. His rear-seat passenger was in the process of passing him the radio frequency for Cambridge TOWER, but at this point he had not entered it into the radio, which in this two-seater glider can only be done by the front seat pilot.

During part of the turn he first observed a white ac about 1–1·5nm away. The ac was flying below his glider at about 3000ft, but at this point he was not aware of the ac type or its heading. Completing a 360° turn, he saw the white twin-engine private jet pass 500ft plus beneath his glider on the RW centre-line heading. He mentioned the jet to his colleague in the rear seat who had also observed the ac pass beneath them. Neither he nor his passenger heard the jet - even when it was below them. Watching the jet cross the centre-line of Cambridge airport without landing [threshold?], he did not consider this at any point to be a 'close contact' and assessed the Risk as 'light'.

FLARM is fitted to his glider, but he had not detected the twin-engine jet on this device beforehand. He has only seen vague details of the C550 pilot's account, but believes the C550 ac was at 3000ft

on the centre line when its pilot saw a glider descending above the C550. However, as he had also observed other gliders in the vicinity he now believes he is not the glider pilot involved in this Airprox - just the only glider pilot who admits to seeing the jet!

THE CAMBRIDGE APPROACH CONTROLLER (APP) reports that the C550 had been cleared to the CAM at an altitude of 3000ft Cambridge QNH (1020mb) for a procedural NDB approach to RW05. Whilst in the Cambridge overhead, the C550 pilot reported a white glider less than 100ft above, which appeared to be diving towards his ac. The Glider pilot had not contacted Cambridge APP and was unknown to ATC.

ATSI reports that the Airprox occurred in Class G airspace at 1140:41 UTC, 2.1nm to the NE of Cambridge Airport at 3000ft and above the Cambridge ATZ, which extends from the surface to a height of 2000ft above the aerodrome elevation of 47ft and is bounded by a circle 2½nm radius centred on the mid-point of RW23.

The C550 was an IFR flight inbound to Cambridge airport from St. Gallen-Altenrhein (LSZR). The glider involved in the Airprox is believed to be a Schempp-Hirth Duo Discus T glider, operating from Gransden Lodge, which is notified in the UK AIP as a Glider Launching Site, active from sunrise to sunset, where aerotows and winch launching take place to 3000ft above the site elevation of 254ft. Gliders operate daily from Gransden Lodge subject to Weather conditions.

Cambridge MATS Part 2, Section 1, Page 29, paragraph 10.4 Gliding sites, states:

> 'Gliding takes place at Gransden Lodge 10nm SW of Cambridge. Gransden shall be considered always active although details are usually faxed to ATC when gliding events are scheduled.'

There was no AIS NOTAM regarding any additional gliding event at Gransden Lodge.

The Cambridge APP controller was providing an Approach Procedural Service (PS) without the aid of surveillance equipment. The Airprox occurred on a Saturday and the UK AIP promulgates the hours of Cambridge Radar, in Summer, as 0700-1800 UTC and by arrangement. No withdrawal of Radar service had been promulgated by AIS NOTAM. The ATSU reported that the provision of a radar service is subject to the availability of suitably qualified staff. After two similar Airprox occurrences [this and Airprox No 2011048] Cambridge ATSU are reviewing their procedures for promulgating the hours of availability of the ASR.

The 1120UTC Cambridge METAR is: 04004KT 330V130 9999 FEW032 19/09 Q1020=

At 1133:30, the C550 pilot contacted Cambridge APP and reported descending to an altitude of 4000ft. APP acknowledged the call, passing the QNH (1020mb) and requesting from the pilot, the type of service and approach that was required. RW05 was notified as the runway in use with a light and variable wind. In response the C550 pilot requested a DS and an ILS for RW23. The controller reported that radar was not available and agreed to provide a PS. The controller cleared the C550 to the CAM (NDB) in the descent to 4000ft QNH with no delay for a procedural ILS approach to RW23. [ATSI Note: The controller had approved an approach to the opposing runway that is equipped with an ILS].

At 1134:15, the radar recording shows the C550 at a position 11nm to the SE of the airfield. The C550 pilot requested permission to carry out a non standard direct entry from the SE of the airfield. The controller approved the procedure and gave the C550 further descent to 3000ft QNH. [ATSI Note: The pilot intended to approach the CAM (NDB) from the SE turning R to intercept the outbound QDR of 063° (CAT A,B) for the ILS/DME/NDB(L) approach to RW23.]

At 1136:42 the C550 pilot reported 3nm from the beacon turning outbound. The controller instructed the C550 pilot to report LLZ established and advised that TOWER was very busy with traffic using RW05 and that the C550 might have to break off the approach to RW23.

At 1137:30, before the Airprox occurred, the controller instructed the C550 pilot to cancel the approach and climb to an altitude of 3000ft. The controller then cleared the C550 to route to the CAM (NDB) to fly outbound for the NDB approach for RW05. The C550 reported level at 3000ft QNH (1020mb) and requested confirmation of a L turn back to the CAM. This was confirmed by the controller with an instruction to maintain 3000ft and report beacon outbound or field in sight. The pilot reported that he would complete the IFR approach.

[UKAB Note (2): At 1139:37, the radar recording shows the C550, 5·6nm NE of Cambridge inbound to the CAM (NDB). Also shown are two possible glider contacts: one tracking SE to the N of the centreline and crossing the RW23 approach at a range of 2·1nm. At 1140:25, the radar recording shows the primary contact – which might or might not be the glider seen by the C550 crew - converging with the C550 just before crossing the centreline, 2·1nm NE of the airfield, with the C550 inbound to the CAM (NDB) indicating 2800ft Mode C (1013mb) – equating to about 3010ft QNH (1020mb). The distance between the two ac is 0·7nm. The contact is shown again at 1140:33, in the C550's L 11:30 at a range of 0·3nm, to the S of the centre-line. This contact then fades as the C550 passes just to the N of the last observed position.]

At 1140:25, the C550 pilot reported, "..[C550 C/S] *we have a glider which is er well it's obviously inside our IFR zone and well what is he a hundred feet above us now diving."* The controller responded, "[C550 C/S] *roger I..have that visual now from the control tower apologies he's not talking to us.*" The C550 pilot advised that he intended to file a report.

The C550 then completed an NDB approach for RW05 and during the approach procedure the pilot reported turning in early to avoid another unrelated ac 200ft above. The radar recording showed the closest range between these ac was 1.1nm with 300ft vertical separation.

The C550 was in receipt of a Procedural Service. The Manual of Air Traffic Services, Section 1, Chapter 11, Page 10, paragraph 6.1.1, states:

> 'A Procedural Service is an ATS where, in addition to the provisions of a Basic Service, the controller provides restrictions, instructions and approach clearances, which if complied with, shall achieve deconfliction minima against other aircraft participating in the Procedural Service. Neither traffic information nor deconfliction advice can be passed with respect to unknown traffic.'

ATSI recommended that Cambridge ATSU in consultation with the CAA ATSD Southern Regional Inspectorate, urgently review the provision and promulgation of the Unit's radar services. A number of recent Airprox events have occurred when pilots had an expectation that radar services would be available in accordance with the promulgated periods of availability. In these instances pilots were advised on initial contact, that radar was not available, often in circumstances when a number of gliders were operating in the vicinity of Cambridge Airport without controllers being aware of their presence.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilot of the C550 and a glider pilot, transcripts of the relevant RT frequencies, radar video recordings, reports from the air traffic controller involved and a report from the appropriate ATC authority.

Without positive radar evidence or Mode S data on the reported ac, tracing action can be problematic when endeavouring to identify a specific glider involved in an Airprox, especially when there are a number of them flying in the vicinity. In this case a degree of uncertainty persisted that could not be eradicated and which naturally affected the Board's assessment of Cause and Risk.

Here the RAC had traced the Duo Discus pilot that was operating in the vicinity at the time the Airprox occurred and whose report is included here. It is plain from his report that he saw the C550 fly along the centreline of RW23 westbound toward the CAM at 3000ft ALT. However, the Duo Discus pilot's reported operating altitude of 3600-5000ft does not closely correspond with the C550 pilot's comment on RT that it was "*..a hundred feet above us"* or his subsequent reported vertical separation of 200-300ft. The radar recording strongly suggests that the contact shown tracking across the centreline, moments before the C550 flew through was the Duo Discus, but without a positive identification or corresponding Mode C indication from the glider this could not be ascertained with certainty. Moreover, at the time of the Airprox the Duo Discus pilot report's he was turning R in a thermal, which is not evident on the recording. However, as the primary contact of the glider had faded from recorded radar coverage at the critical moment it was feasible that it might well have been executing a turn at the time. Members agreed that the identity of the reported glider was not confirmed, but it seemed most likely that it was the Duo Discus pilot's glider and the Board commended him for 'stepping up to the plate' and providing a frank and comprehensive account, which demonstrated a conscientious attitude to flight safety.

In the light of his remarks on the RT that "…*it's obviously inside our IFR zone...",* controller Members were concerned that the C550 pilot might not be fully cognisant of the nature of the surrounding airspace and his responsibilities for avoiding other VFR ac when flying IFR in the Open FIR. As Cambridge Airport is not afforded CAS outwith their ATZ, the highest level of radar service available to pilots operating in the 'see and avoid' environment of Class G airspace is a DS. To his credit, the C550 pilot had requested a DS, not the 'Radar Control' Service he had mentioned in his account. It was unfortunate, therefore, that none was available due to the absence of any radar qualified controller being available 'on watch' at the time. Members were cognisant that this topic had featured in Airprox reports earlier this year and noted that the ATSU is reviewing their procedures for promulgating the availability of their ASR. This was an important point since, short notice unserviceability excepted, pilots should know with reasonable certainty beforehand whether they can expect a radar service to be available at their destination or not. Irrespective of the prevailing good weather, if Cambridge had provided a DS then the IFR C550 pilot could reasonably have expected appropriate deconfiction minima to be afforded against observed conflicting traffic. The Board was briefed that the ATSU is actively seeking to recruit radar-qualified controllers, which mollified Members somewhat.

As a general point the BGA glider pilot Member thought it unwise to be thermalling on the RW centerline to a regional airport and earlier contact with ATC to advise of the glider's presence would have been helpful. Nevertheless, the Board understood the Duo Discus pilot was soaring quite legitmately in Class G airspace when the C550 underflew his glider. Some Members percieved that this Airprox was the result of the glider pilot flying close enough to cause the C550 pilot concern, but as he reports flying no lower than 3600ft this would have been some 600ft above the C550's Mode C indicated level. However, the Duo Discus glider has a span of 20m, somewhat larger than the C550; at such a size, although perceived to be very close overhead, it might well have appeared to be closer than it actually was. The Board could not resolve this anomaly and the Member's concluded unanimously that this Airprox had been the result of a conflict in Class G airspace with no risk of a collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A conflict in Class G airspace.

Degree of Risk: C.