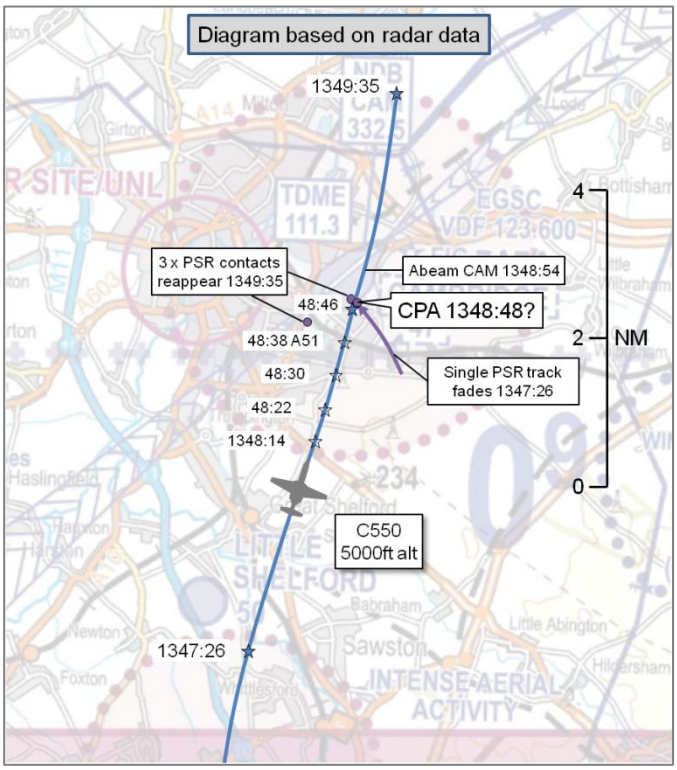
AIRPROX REPORT No 2014141

Date/Time: 9 Aug 2014 1349Z (Saturday)

Position: 5212N 00010E (Cambridge)

Airspace: London FIR (*Class*: G)

	Aircraft 1	*Aircraft 2*
Type:	C550	Untraced Gliders
Operator:	Civ Comm	
Alt/FL:	4000ft QNH (1007hPa)	
Conditions:	VMC	
Visibility:	>10km	
Reported Separation:	0ft V/<1nm H	
Recorded Separation:	NK	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE C550 PILOT reports starting the RW23 ILS procedure at Cambridge. The white and blue aircraft had beacon, wing-tip strobes and recognition lights selected on, as was the SSR transponder with Modes A, C and S. The aircraft was fitted with TCAS. The pilot was operating under IFR in VMC in receipt of a Procedural Service from Cambridge Approach. He was inbound to the CAM NDB from the southwest, had been cleared to descend to 4000ft, and was number 2 to traffic already outbound on the procedure. When 'within a mile or two' of the NDB, heading 030° at 180kt and level at 4000ft, opposite direction glider traffic was seen 'rather late' and at a similar altitude. The auto-pilot was disengaged and the aircraft visually turned away from the contact. A second glider was subsequently seen in the direction the aircraft was being turned and a descent and turn back towards the first glider was made. A third, non-conflicting, glider was also seen and the pilot noted that all three gliders were within 1nm range. ATC was notified that IFR was being cancelled. The pilot stated that no Traffic Information was available regarding the presence of any traffic for the arrival.

He assessed the risk of collision as 'High'.

THE GLIDER PILOT: Despite extensive tracing action, none of the glider pilots involved could be located.

THE CAMBRIDGE CONTROLLER reports the C550 was cleared in the decent to the CAM [NDB] initially for an ILS approach RW23. At approximately 1352, and 2nm before reaching the CAM the pilot reported at least three gliders in the CAM overhead all in the altitude block 3500ft to 4500ft. The pilot reported taking avoiding against all three gliders, all within 1nm, one 100ft above and the other two 200ft and 300ft below. The gliders were unknown to Cambridge.

Factual Background

The Cambridge weather was recorded as follows:

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METAR EGSC 091350Z 23014KT 150V280 9999 SCT048 22/11 Q1007
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A transcript of the Cambridge Approach RTF was provided, as follows:

From	To	Transcript
C550	Cambridge	Cambridge ????? [C550 C/S] information November, Q N H one zero zero seven, (1348:00) five thousand feet er request visual join if available, visual with the A T R
Cambridge	C550	[C550 C/S] roger it's er (1348:10) non-radar procedural service, inbound, information November, runway two three's in use, the Q N H one zero zero seven, just confirm your range from the field
C550	Cambridge	(1348:20) two miles from the field [C550 C/S]
Cambridge	C550	[C550 C/S] roger, descend altitude four thousand feet on the Q N H one zero zero seven
C550	Cambridge	descend altitude four thousand feet Q N H one zero (1348:30) zero seven [C550 C/S] and just for information glider twelve o'clock directly overhead the airport approximately (1348:40) four thousand eight hundred feet descending and ????? there's about two or three gliders in the overhead, request er we- go visual now
Cambridge	C550	[C550 C/S] (1348:50) roger take your own avoiding action on that traffic and contact Cambridge Tower one two five decimal niner
C550	Cambridge	okay one two five niner and for further information there's at least three gliders directly (1349:00) in the overhead of Cambridge between er about three and a half to four and half thousand feet manoeuvring
Cambridge	C550	roger that's understood, we were aware of some north of the field but not in the overhead, thanks for the call (1349:10)
Cambridge	C550	[C550 C/S] contact Cambridge Tower one two five decimal niner

Analysis and Investigation

CAA ATSI

ATSI had access to Cambridge RTF and area radar recording, together with the written reports from the controller and the C550 pilot.

The C550 pilot was operating under IFR inbound to Cambridge, and was in receipt of a Procedural Service from Cambridge Approach. The glider pilots were untraced but Cambridge ATC believed that they may have been operating from Gransden Lodge. The Cambridge Manual of Air Traffic Services (MATS) Part 2, Page 29, Paragraph 10.2, states:

> 'Gliding takes place at Gransden Lodge 10nm SW of Cambridge. Gliders can be launched up to 3000 feet altitude by cable winch, or launched by glider-tug.
> Gransden shall be considered always active although details are usually faxed to ATC when gliding events are scheduled. The site is marked on situational displays. A/C should be warned where it is suspected that gliding may be occurring.
> A/C being vectored should be vectored to avoid the site if any doubt exists.
> Gransden Lodge occasionally host gliding competitions. Prior to launch a member of the club should telephone ATC with details of numbers, routing etc. Information is also available online. If doubt exists, or for traffic updates, ATC will contact the club.
> Information on known intense gliding activity will be displayed on a temporary basis at each operational position, and updated as required by the ATCO I/C.'

Cambridge ATC were providing a split Aerodrome and Approach Control service without the aid of surveillance equipment. Controller training was in progress in both positions and workload was assessed as light to medium. The UK AIP page AD 2.EGSC-9 (29 May 2014) states for Radar:

> 'Available intermittently Mon-Fri during normal working hours and by arrangement only'.

Radar would not have shown gliders operating in the overhead.

At 1347:00, the Stansted single source radar replay showed the inbound C550, 7.3nm south of Cambridge, passing 5600ft following an ATR 42 at 3100ft. Both aircraft's pilots were inbound IFR in receipt of a Procedural service. Also shown are a number of intermittent glider contacts, see Figure 1.

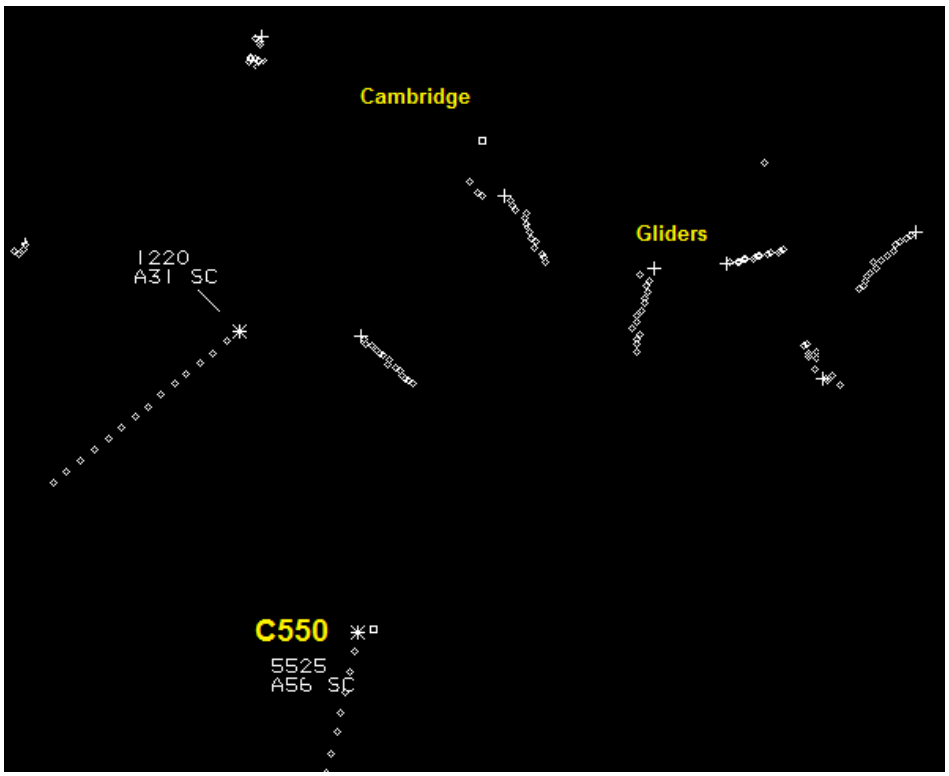

Figure 1: Stansted single source radar at 1347:00

At 1347:50, the C550 pilot contacted Cambridge Approach reporting in receipt of information 'N' with QNH 1007hPa.

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At 1348:52, radar replay showed the C550 overhead the airfield at FL049 (5000ft) with intermittent gliders showing 2.5nm west and 2.7nm southeast. It was likely that other gliders in the area were not shown on the radar replay, see Figure 2.

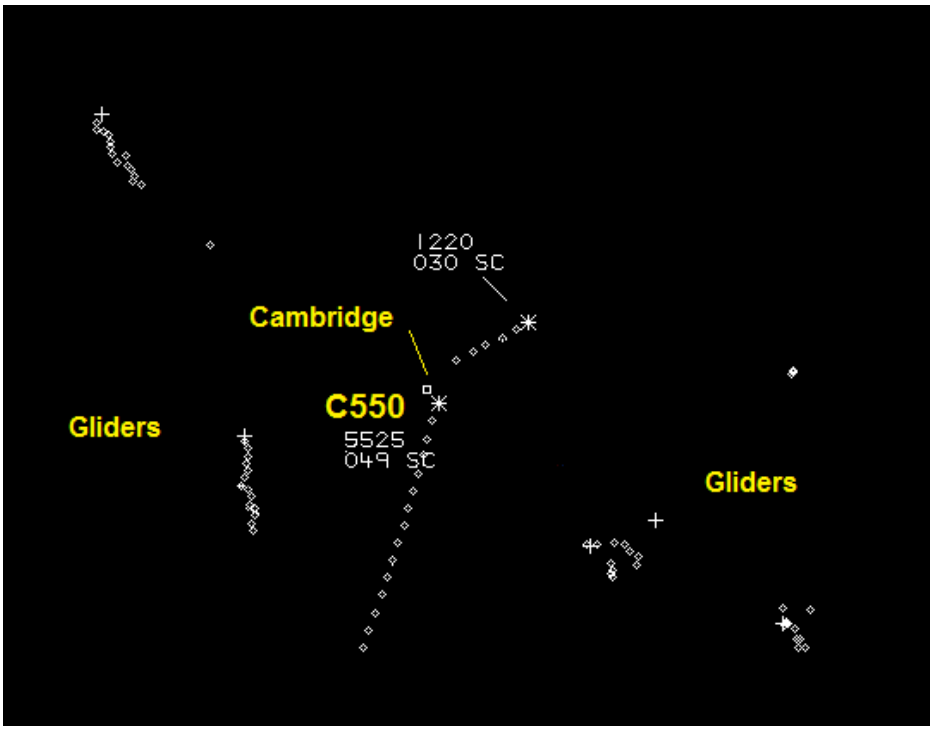

Figure 2: Stansted single source radar at 1348:52

At 1349:30, the C550 pilot contacted the Tower and continued to join on a right base to land without further incident.

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In discussion, the Approach controller recalled that he had received a couple of calls from glider pilots operating north of Cambridge but, prior to the Airprox, Cambridge ATC had not been aware of the full extent of the gliding activity in the Cambridge overhead. The Cambridge Approach controller believed that the gliders were operating from Gransden Lodge but no notification had been received regarding a gliding event or of any other planned activity in the vicinity of Cambridge. When asked, the Cambridge controller confirmed that he had been aware of gliders to the north but not in the immediate vicinity. He thought that arriving aircraft were being advised to look out for gliders but couldn't recall if this had been broadcast on the ATIS prior to the incident. He explained that when Cambridge are aware of gliding activity the ATIS would be updated together with the local ATC webpage.

In order to try and address concerns about aircraft routeing close to gliders a meeting occurred earlier in 2014 between Cambridge Airport, the Cambridge Airlines safety representative and a Gransden Lodge gliding club representative. As a result of the meeting, and in order to mitigate against IFR traffic coming into proximity with gliders, Cambridge ATSU asked the CAA to update the Cambridge UK AIP approach charts, to indicate the intense gliding activity at Gransden Lodge. Additionally Cambridge ATSU issued a MATS Part 2 supplementary instruction (SI-02/14) to controllers, effective 24 July 2014, which states:

> 'Gransden Lodge is a notified gliding site making up to 15,000 winch launches per year. Winch launching can take place with a maximum release altitude of 3300 feet AMSL and aerotow to any altitude outside of CAS. Intense gliding activity can be expected within 1nm from the airfield with further activity in the local area. The site should be considered active seven days a week during daylight hours. Even when weather conditions are poor there may be winch launching in progress (practising aborted launches or cable breaks etc). Following a number of encounters with traffic routing close to Gransden Lodge gliding site it is necessary to introduce measures to mitigate against traffic routing IFR to Cambridge to ensure that Gransden Lodge is avoided by a sensible margin to remove the possibility of an encounter with an IFR aircraft and a glider/winch cable combination.'

The supplementary instruction outlines procedures to be implemented to ensure that arriving IFR aircraft are routed clear of Gransden Lodge not below 4000ft.

The C550 pilot contacted Cambridge Approach as he approached the airfield and 40sec later reported taking avoiding action against gliders in the overhead. The Approach controller had earlier received RT calls from two glider pilots operating to the north, but there had not been sufficient time to pass any warning to the C550 pilot. The controller was unprepared and unaware of the intense gliding activity in the overhead and in the vicinity of Cambridge Airport. The C550 pilot was in receipt of a Procedural Service and CAP774, UK Flight Information Services, Chapter 5, Paragraph 5.1 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.'

The radar replay only showed gliders intermittently and it was therefore not possible to identify the glider involved or to show the specific geometry of the occurrence.

Cambridge airfield is situated close to Gransden Lodge in a busy Class G airspace environment. The issues regarding gliders is complex and gliders are often intermittent on radar and will not be seen in the overhead. Glider pilots may call Cambridge but this is often dependant on whether they carry a radio and hold an RT licence. The ATSU have been pro-active in trying to reduce risk and mitigate against encounters between IFR aircraft and gliders. Cambridge have updated the appropriate charts in the UK AIP and have introduced procedures to avoid Gransden Lodge.

UKAB Secretariat

All pilots shared an equal responsibility for collision avoidance and not to fly into such proximity as to create a danger of collision[1]. If the incident geometry is considered as converging then the C550 pilot was required to give way to the glider pilot[2]. If the incident geometry is considered as head-on then both pilots were required to turn to the right[3]. If the incident geometry is considered as overtaking then the glider pilot had right of way and the C550 pilot was required to keep out of the way of the other aircraft by altering course to the right[4].

Comments

BGA

As noted above, this is a busy Class G environment with a mix of traffic types. Effective lookout is the primary means of risk mitigation in these circumstances and worked in this case. It is unfortunate that the glider pilots could not be traced; however it is unlikely that they were familiar with the NDB procedure routings and altitudes as these are not shown on VFR charts. It is encouraging to note that at least some glider pilots in the area notified Cambridge of their activity.

Summary

An Airprox was reported when a Cessna 550 and gliders flew into proximity at about 1349 on Saturday 9th August 2014. All pilots were operating in VMC, the C550 pilot under IFR in receipt of a Procedural Service from Cambridge and the glider pilots under VFR, most likely not in receipt of an Air Traffic Service.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of a report from the C550 pilot, a transcript of the relevant RT frequency, radar photographs/video recordings, a report from the air traffic controller involved and a report from the appropriate ATC authority.

The Board first considered the C550 pilot's actions. The C550 pilot was inbound to Cambridge and, although operating under IFR, nevertheless remained responsible for collision avoidance. Without the aid of surveillance, his Procedural Service would only include ATC-derived separation against other aircraft participating in the same service, although his TCAS would provide traffic information on traffic equipped with, and using, an SSR transponder. Therefore, his only means of mitigation against mid-air collision with non-transponder equipped aircraft was the use of 'see-and-avoid'. In the event, he saw 3 conflicting gliders and took appropriate and timely avoiding action.

The glider pilots were operating in Class G airspace in accordance with the privileges afforded them within that airspace; however, members were of the opinion that soaring in the overhead of an established commercial airport at a reported altitude of 5000ft should be avoided if possible and, if necessary, would be conducted much more safely with associated RT contact with the aerodrome concerned if possible. Members were aware that many glider pilots were not in possession of an RT license and consequently could not make such a call; although in that case it was felt appropriate that such glider pilots should include the position of a likely IFR hold in their assessment of desired track and avoid it. Members noted that the presence of the 'feathers' symbol on the CAA VFR 1:500000 scale chart indicated aerodromes with instrument procedures outside CAS, and should also serve as an indication that the airfield may have an IFR holding pattern in or near the overhead. Members recalled that, as a result of Airprox 2014097 and 2014126, the CAA had been recommended to consider producing a chart of UK airfield IFR holding pattern positions and that such a chart could have provided valuable deconfliction information in this case.

[1] Rules of the Air 2007 (as amended), Rule 8 (Avoiding aerial collisions).
[2] ibid., Rule 9 (Converging).
[3] ibid., Rule 10 (Approaching head-on).
[4] ibid., Rule 11 (Overtaking).

With regard to Gransden Lodge, a gliding member stated that he had contacted them about this incident and they had reported that glider pilots operating from Gransden Lodge were very aware of the traffic patterns around Cambridge airport; consequently, they opined that the glider pilots in this incident were most likely based at another airfield further away. It was reiterated that the Airprox occurred on a weekend on a good weather day, that Cambridge was located at a point that was regularly traversed by glider pilots on cross-country flights, and that there was a high likelihood that the glider pilots could have flown from airfields which were hundreds of kilometres distant from the Airprox location. With this in mind, members were also of the opinion that more could be done, in particular to inform other airspace users of glider competition or daily task tracks, and resolved that Director UKAB would continue his contact with the BGA with a view to understanding how this might best be achieved.

In the absence of a report from any of the glider pilots, it was not possible to ascertain their perspective of the event or whether a system such as PowerFLARM was fitted and of use. However, the Board were content that sufficient information existed to determine that the cause of the Airprox was a conflict in Class G airspace, and that the C550 pilot had resolved it by taking effective and timely avoiding action.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A conflict in Class G resolved by the C550 pilot.

Degree of Risk: C.

ERC Score[5]: 21.

[5] Although the Event Risk Classification (ERC) trial had been formally terminated for future development at the time of the Board, for data continuity and consistency purposes, Director UKAB and the UKAB Secretariat provided a shadow assessment of ERC.