AIRPROX REPORT No 2014160

Date/Time: 2 Sep 2014 1517Z

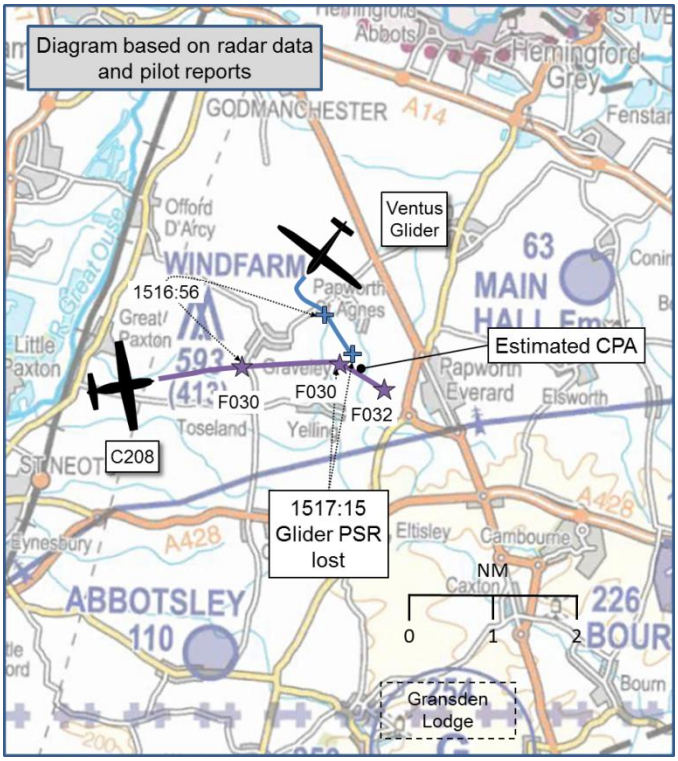
Position: 5214N 00008W (3.5nm north of Gransden Lodge)

Airspace: London FIR (*Class*: G)

	Aircraft 1	*Aircraft 2*
Type:	Ventus Glider	Cessna C208
Operator:	Civ Pte	Civ Club
Alt/FL:	2800ft QNH (1022hPa)	3200ft QNH (1024hPa)
Conditions:	VMC	VMC
Visibility:	>10km	>10km

Reported Separation: 300ft V/0.25nm H 500ft V/0nm H

Recorded Separation: NK V/NK H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE VENTUS GLIDER PILOT reports flying a white glider with red wing-tips, VFR, heading 135° at 90kt, in a straight decent at around 2800ft (QNH 1022hPa). The aircraft was equipped with a PCAS[1] unit, FLARM[2], and a transponder. After around 1.5hr of flight, the battery on the PCAS had run out and the pilot had turned off the transponder because the aircraft's battery was low, however the FLARM was still operating. The pilot had been receiving a Basic Service from Cambridge Approach for most of the flight, but had switched to the Gransden Lodge Air-Ground frequency. The pilot reports that a light-aircraft approached from his 4 o'clock, converged in his 3 o'clock, and he saw it 'late, at close quarters' in his 2 o'clock 'moving rapidly right-to-left' at a similar altitude; he put the glider into a dive to increase separation [UKAB Note: the glider's flight logger indicates a rapid descent from 2883ft to 2624ft amsl in the location of the Airprox]. In his frank analysis of the occurrence, the pilot commented that he believed that the 'right of way was clearly in favour of the light aircraft' but observed that, given the relative positions of the aircraft, it was far more likely that the light aircraft pilot would have been able to see his glider sooner as it was in his 10 o'clock, converging to the 11 o'clock. He thought that his glider would have shown on Cambridge's radar and that, if it had, the controller would probably have passed Traffic Information to pilots; however, the glider pilot assessed that it would have been unlikely that the light-aircraft pilot would have contacted Cambridge at such a range, and therefore he felt that his decision to switch to the Gransden Lodge frequency would not have affected matters. The glider pilot also observed that it was unfortunate that the occurrence had happened so late in his sortie because the PCAS system would likely have given him assistance in spotting the confliction coming from a direction that is difficult see from his cockpit; he also submitted his GPS log in the hope that it would help to improve flight safety.

He assessed the risk of collision as 'Medium'.

THE CESSNA C208 PILOT reports flying a white and blue aircraft with large logos under the wings and belly, with all of their 'recognition lights' illuminated, and squawking transponder Modes 3/A and C; no ACAS was fitted. The crew consisted of two pilots who were flying VFR at 3200ft (QNH 1024hPa) at 160kt; they had requested a Traffic Service from Cambridge ATC but they recall being

[1] Portable Traffic Alerting and Collision Avoidance System
[2] Collision avoidance system which co-operates only with other FLARM units but not transponders

told that the radar was not operating and had accepted a Basic Service. The PH[3] spotted a glider, which was thermalling ahead; lower than the Cessna but on their planned route. The PM[4] observed that the glider appeared to be on a 'constant bearing'. The PH noted that it was making tight turns and, assuming the glider pilot 'was catching a good thermal', elected to turn right around 30° to head east. The C208 crew maintained visual contact with the glider, passing 500-800ft above it, and turned back on track when it passed through their 9 o'clock; they lost sight of the glider as it passed through their 7.30 position. The C208 pilot noted that his aircraft is substantially larger than the more common C172 and can give other pilots the impression that it is closer than it really is.

He assessed the risk of collision as 'None'.

Factual Background

The weather at Cambridge at 1450 was recorded as:

METAR EGSC 021450Z VRB02KT 9999 BKN042 20/10 Q1023

Analysis and Investigation

CAA ATSI

The Cambridge controller was providing a combined Aerodrome and Approach control service without the aid of surveillance equipment. The Cambridge ATSU were not aware of the Airprox and therefore no controller report was available. The Glider had been in receipt of a Basic Service from Cambridge Approach but had changed to Gransden Lodge sometime prior to the Airprox.

At 1512:10 the C208 contacted Cambridge Approach reporting 9nm north-northeast of Cranfield, maintaining 3200ft and requesting a Traffic Service. The Cambridge controller passed the QNH (1023hPa), and reported that Cambridge were operating 'non-radar'. A Basic Service was agreed and the C208 pilot was instructed to report passing north abeam Cambridge.

At 1516:30, using the Stansted single-source radar recording, the C208 was shown 12.5nm west-northwest of Cambridge, tracking east-northeast at FL030. A Glider is shown in the C208's half past ten position at a range of 2nm (Figure 1). The two aircraft converged and at 1517:00 the Glider faded from radar (Figure 2). At 1517:28 radar showed that the C208 had completed a right turn of approximately 30 degrees (Figure 3). At 1517:52 the Glider reappeared on radar 0.7nm behind the C208 (Figure 4). At 1519:50 the C208 was transferred to Lakenheath.

Although it was not possible to positively identify the Glider involved in the Airprox from the radar recording alone, the relative position of the two aircraft and the 30 degree right turn manoeuvring made by the C208, are consistent with the information provided by the pilots' written reports and are a good match for the Ventus pilot's GPS log.

The Glider pilot's written report indicated that the C208 was sighted late in his 2 o'clock and avoiding action was taken by descending. The C208 pilot's written report indicated that he sighted the glider at a range of 2 to 3nm and the two aircraft converged on a constant bearing. The C208 pilot took avoiding action by turning right 30 degrees for 1 or 2nm before turning back on course.

Cambridge ATSU were operating without radar and the controller would not have been aware of the conflict. The Glider was not in receipt of an Air Traffic Control Service. The C208 was in receipt of a Basic Service where, given that the provider of a Basic Service is not required to monitor the flight, pilots should not expect any form of traffic information from a controller[5].

[3] Pilot Handling
[4] Pilot Monitoring
[5] CAP774, Paragraph 2.5

Whether traffic information has been provided or not, the pilot remains responsible for collision avoidance without assistance from the controller[6].

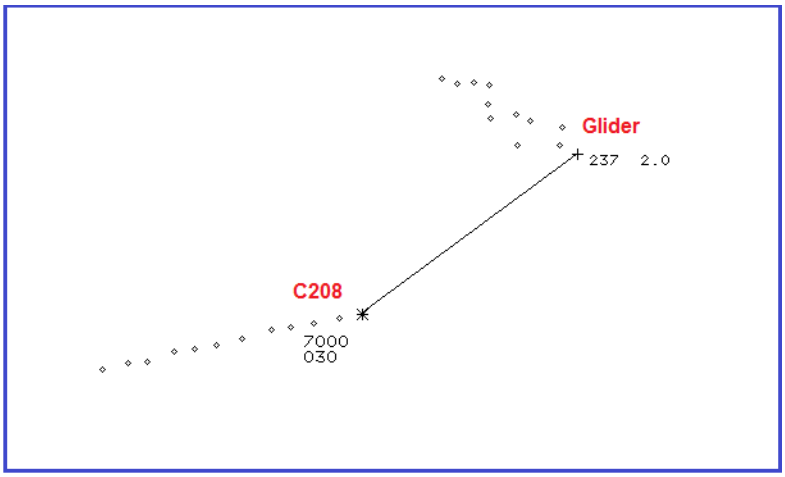


Figure 1 – Stansted single-source radar at 1516:30

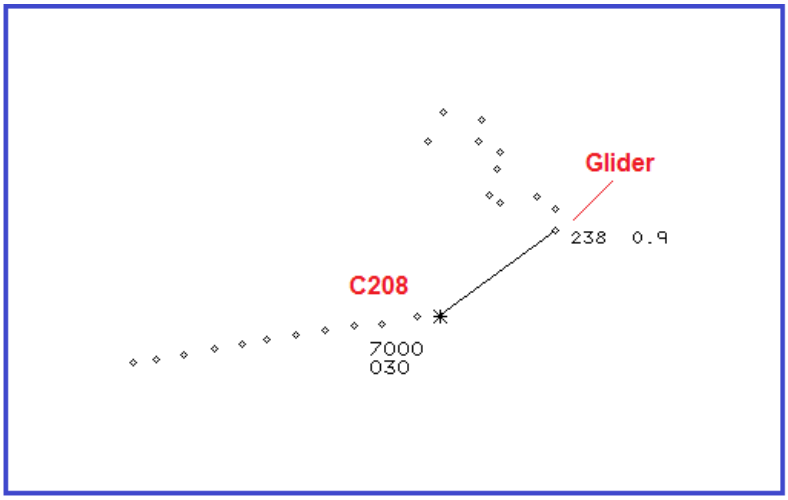


Figure 2 – Stansted single-source radar at 1517:00

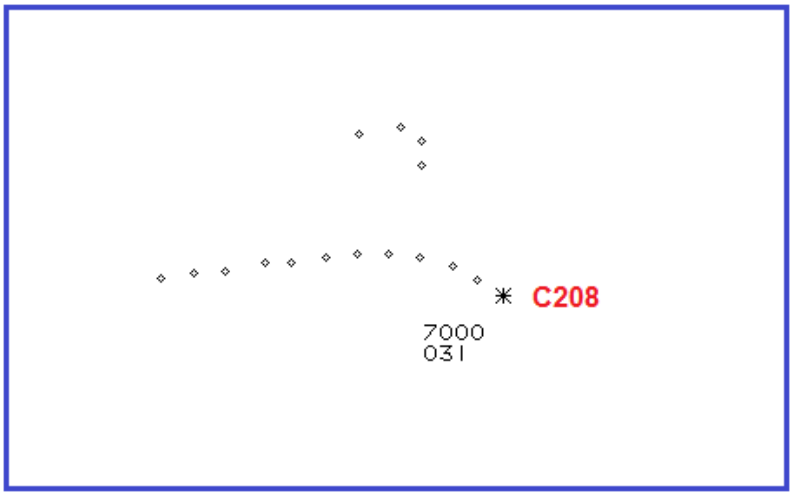


Figure 3 – Stansted single-source radar at 1517:28

[6] CAP774, Paragraph 2.9

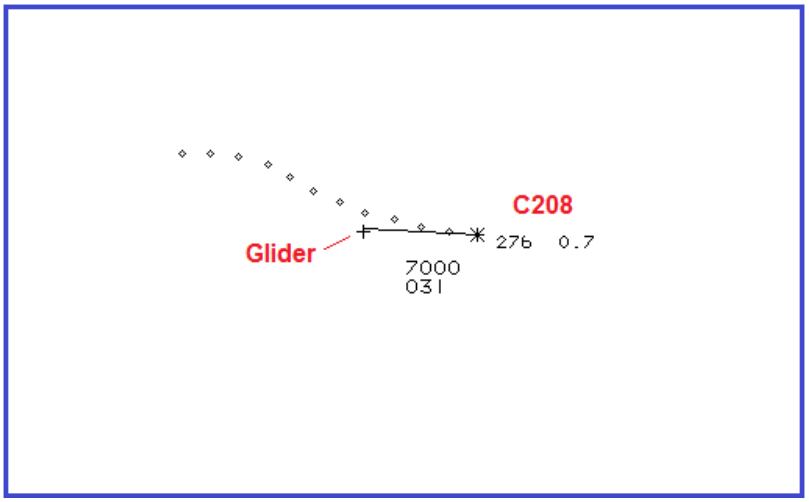


Figure 4 – Stansted single-source radar at 1517:52

UKAB Secretariat

The aircraft were converging so the crew of the powered aircraft (the C208) was required to give way to the glider, which they did[7].

Comments

BGA

A classic example of see and avoid working in Class G. It's good to come across a well-equipped and well prepared glider pilot who has done his best to communicate with the local ATC unit, but it's unfortunate that the power demands of that equipment are not ideally suited to battery-powered operation.

Summary

An Airprox was reported in Class G airspace between a Ventus Glider and a Cessna C208, both flying VFR in VMC. The C208 crew saw the glider and gave way to it.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included 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.

Board members commended the Ventus glider pilot for equipping his aircraft with an impressive suite of electronic conspicuity aids and for his decision to contact ATC on his route. It was unfortunate that the limited battery power available in the glider meant that the equipment was not able to assist the pilot in this Airprox. However, they also noted that the glider pilot thought that his aircraft would show on the Cambridge radar and that the C208 pilot would not be in contact with Cambridge ATC because of the range. In fact, it was the other way around: notwithstanding that Cambridge had no radar anyway that day, gliders are notoriously difficult to detect using radar because of the materials used in their construction and their very low radar cross-section; also the C208 pilot was only receiving a Basic Service from Cambridge because the air traffic controller did not have access to radar on that occasion. Whilst these facts did not directly affect the outcome of this Airprox, the Board observed that these were frequently mentioned misconceptions and wished to highlight them to other airspace users in this report: electronic conspicuity equipment apart, increasing the radar

[7] Rules of the Air 2007, Rule 9, Converging

reflectivity of gliders in general was a worthwhile avenue to pursue in order to extend the likelihood of being detected by ATC radars. In this respect, the Board recalled that they had previously corresponded with the BGA to see whether trials of internally fitted light-weight glider radar reflectors might be a feasible solution.

Members also noted that the Glider pilot had thought that the C208 had 'the right of way' because it was on right of the glider: they reiterated that the Rules of the Air for converging aircraft required the powered aircraft to give way to the glider irrespective of which aircraft was on the right.

Despite the good level of equipment in the glider, and the conscientiousness of both pilots in trying to use the ATC services available to them on the day, members agreed that, unfortunately, this occurrence came down to a simple conflict of flight-paths in Class G airspace which was resolved by the C208 pilot seeing and avoiding the glider. It was clear that the geometry of the conflict and the aircraft's design meant that the Ventus pilot would not easily have been able to see the C208 sooner than he did as it approached from behind his wing; however, the C208 pilot saw the Ventus in plenty of time and, whilst some members thought that ideally he might have considered a larger turn to avoid, he ultimately ensured that adequate vertical separation existed. The Board concluded therefore that the C208 pilot had taken timely and effective action and that the Degree of Risk was Category C.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A conflict in Class G resolved by the C208 pilot.

Degree of Risk: C.

ERC Score[8]: 4.

[8] 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.