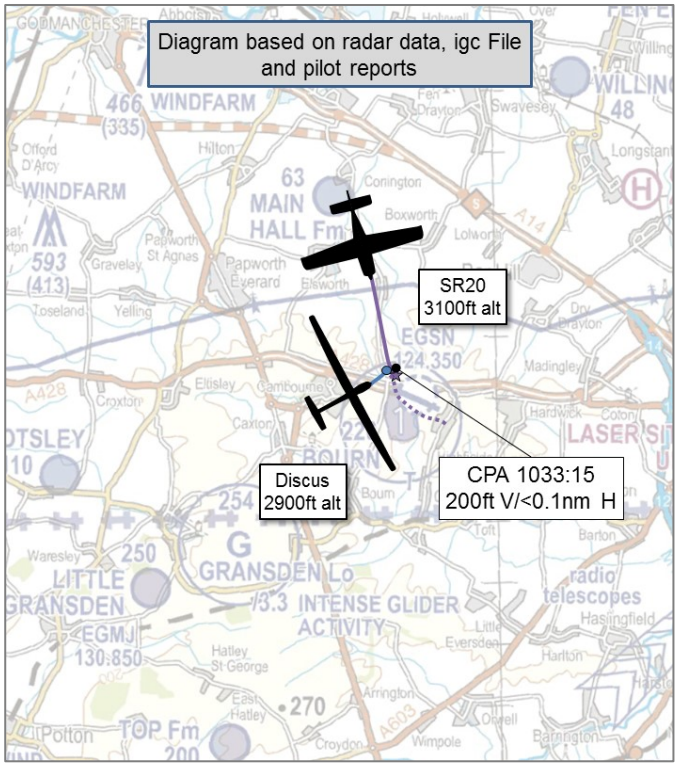
## AIRPROX REPORT No 2019139

Date: 09 Jun 2019 Time: 1033Z Position: 5213N 00002W Location: Overhead Bourn Airfield

## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

| Recorded | Aircraft 1 | Aircraft 2 |
|---|---|---|
| Aircraft | Discus Glider | SR20 |
| Operator | Civ Gld | Civ FW |
| Airspace | London FIR | London FIR |
| Class | G | G |
| Rules | VFR | VFR |
| Service | Listening Out | Changing Frequency[1] |
| Provider | Cambridge | N/A |
| Altitude/FL | 2900ft | 3100ft |
| Transponder | Not fitted | A, C, S |
| **Reported** | | |
| Colours | White | White, Brown |
| Lighting | None | Strobe, Nav, HISL |
| Conditions | VMC | VMC |
| Visibility | >10km | 10km |
| Altitude/FL | ~3000ft | 3100ft |
| Altimeter | QNH (1020hPa) | QNH |
| Heading | 150° | 170° |
| Speed | 50kt | 136kt |
| ACAS/TAS | FLARM | TAS |
| Alert | None | None |
| **Separation** | | |
| Reported | 10ft V/30m H | 200ft V/0.5nm H |
| Recorded | 200ft V/<0.1nm H | |




**THE DISCUS GLIDER PILOT** reports that he was manoeuvring to re-position into the best lift in a thermal. The SR20 passed down his port side from behind and crossed his nose as his turn progressed. He attempted to stop the turn, but this was not effective due to the slow roll rate of his aircraft. The SR20 was not seen until he appeared from behind his port wing at high relative speed and at what he would have said was already the closest proximity. The SR20 continued in a straight-and-level flight as though the SR20 pilot hadn't seen him. Although he was Listening Out on Cambridge Approach he did not have any indication of the presence of the SR20. He is aware that Cambridge ATC is closed at weekends so there is no Basic Service available.

The pilot assessed the risk of collision as 'High'.

**THE SR20 PILOT** reports that his planned route was to fly direct to the Gamston VOR and from there direct to his destination. He flew most of the cruise at an altitude of between 4200ft and 3500ft. He changed from East Midlands radar to Duxford information at about 15nm to run near St Ives, and started to turn slightly right heading 170° to position for a left-hand downwind join for his destination. Just after Main Hall farm he started his planned descent [UKAB note: The diagram shows the SR20 pilot turned after CPA (as displayed by a dotted line)]. When starting to descend he saw a glider circling. At this stage it was to his right, slightly higher and about 2-3nm away he estimated. He immediately started to turn to the left and continued to descend[2]. After about 15secs he levelled out and saw that the glider was now on his right and slightly higher, travelling in the same direction. He was soon clear of the glider and continued heading about 170° and continued to his destination.

The pilot assessed the risk of collision as 'Low'.

[1] Basic Service but in the process of changing frequency from East Midlands to Duxford.

## Factual Background

The weather at Luton was recorded as follows:

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METAR EGGW 091020Z AUTO 19007KT 140V230 9999 BKN040 17/06 Q1021
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## Analysis and Investigation

### UKAB Secretariat

The Discus and SR20 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard[3]. If the incident geometry is considered as overtaking then the Discus pilot had right of way and the SR20 pilot was required to keep out of the way of the other aircraft by altering course to the right[4].

The radar replay displays a primary-only contact operating as per the description of the Discus pilot and corresponds with his igc file, although this cannot be fully verified. The SR20 pilot's planned route would have taken him between Bourn and Cambridge but his actual route took him over Bourn airfield. Shortly after passing close to the primary-only contact the SR20 pilot turns left briefly before turning right, which is as described by the SR20 pilot on sighting a glider but this is after CPA with the primary return/igc file and so this indicates that the glider he turned to avoid was not the Airprox Discus (Figure 2).

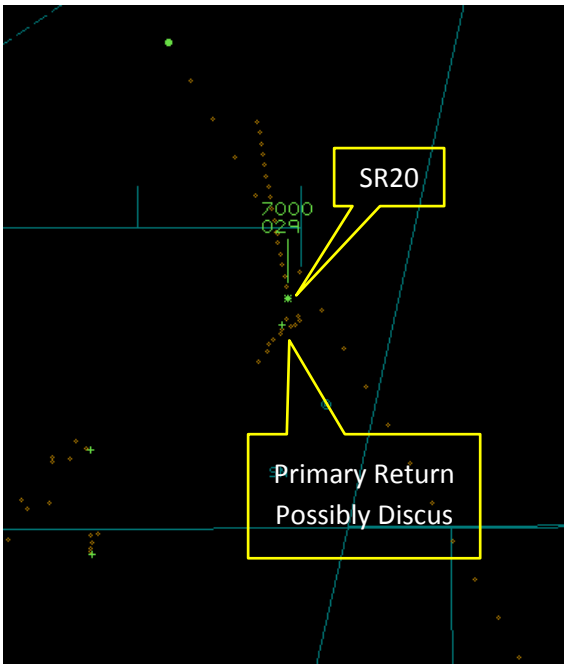



Figure 1

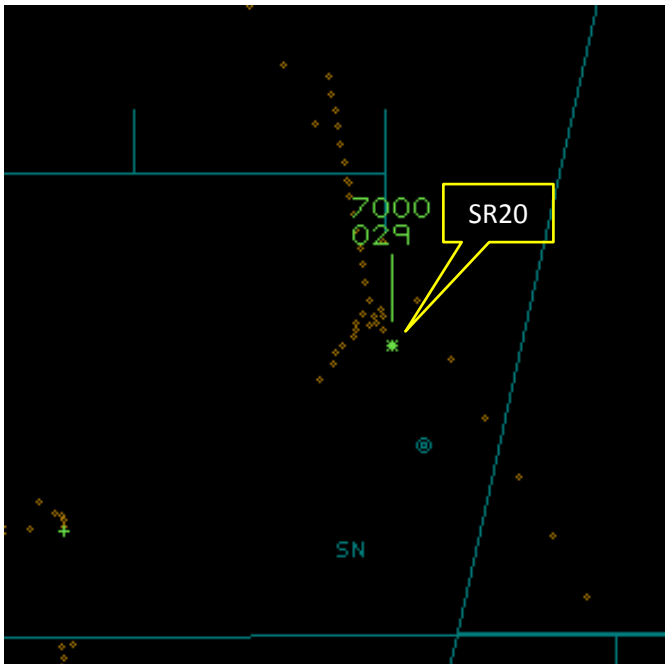



Figure 2

## Summary

An Airprox was reported when a Discus and a SR20 flew into proximity overhead Bourn airfield at 1033hrs on Sunday the 9th of June 2019. Both pilots were operating under VFR in VMC, neither pilot in receipt of a service.

[3] SERA.3205 Proximity.
[4] SERA.3210 Right-of-way (c)(3) Overtaking.

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

Information available consisted of reports from both pilots, radar photographs/video recordings and igc file. 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.

The Board began by looking at the actions of the Discus pilot. Members commended him for listening out on the Cambridge frequency, even though Cambridge was closed, to increase his Situational Awareness (SA). That being said, some members opined that he may have gained more SA if he had listened out on a frequency from an active airfield, e.g. Duxford or Wittering **(CF1)**. Members noted that the Discus pilot saw the SR20 very late, as it passed him from behind and to the left **(CF3)**, and that his low roll rate prevented him from taking any effective avoiding action.

The Board then turned to the actions of the SR20 pilot. Although he reports seeing a glider, the radar replay coupled with the glider's igc file indicates that the SR20 pilot did not turn until after CPA. This led members to believe that the SR20 pilot did not see the Discus but saw another glider that he then turned to avoid **(CF3)**. Some members wondered if the SR20 pilot might have been looking inside at the time as he made his frequency change, but it was agreed that although this was a potential reminder of the need to maintain a robust lookout at all times and only to look inside for short periods, this was supposition and the frequency change may not have been a distraction to the pilot at all.

Neither pilot had any SA on the other aircraft and, although both aircraft were fitted with Electronic Warning Systems, they were incompatible (FLARM will only register the presence of another FLARM-equipped aircraft, and the Discus was not transponding and so the SR20's TAS could not detect the conflict). This resulted in neither system alerting their pilots to the presence of the other aircraft **(CF2)**.

Turning to the risk, members agreed that the SR20 pilot had not seen the Discus and that the Discus pilot had probably seen the SR20 at about CPA. Some members opined that this meant that it had only been providence that there had not been a collision. Although the Board agreed that it had been purely chance that they had missed each other, the separation of 200ft vertically at CPA meant that this was not a Category A incident. Accordingly, although the Board agreed that safety had been much reduced below the norm, they assessed the risk as Category B.

## PART C: ASSESSMENT OF CONTRIBUTORY FACTOR(S) AND RISK

Contributory Factor(s):

| | **2019139** | | |
|---|---|---|---|
| CF | **Factor** | **Description** | **Amplification** |
| | **Flight Elements** | | |
| | **• Situational Awareness of the Conflicting Aircraft and Action** | | |
| 1 | Contextual | • Situational Awareness and Sensory Events | Generic, late, no or incorrect Situational Awareness |
| | **• Electronic Warning System Operation and Compliance** | | |
| 2 | Technical | • ACAS/TCAS System Failure | Incompatible CWS equipment |
| | **• See and Avoid** | | |
| 3 | Human Factors | • Monitoring of Other Aircraft | Non-sighting or effectively a non-sighting by one or both pilots |

Degree of Risk: B.

Safety Barrier Assessment[5]

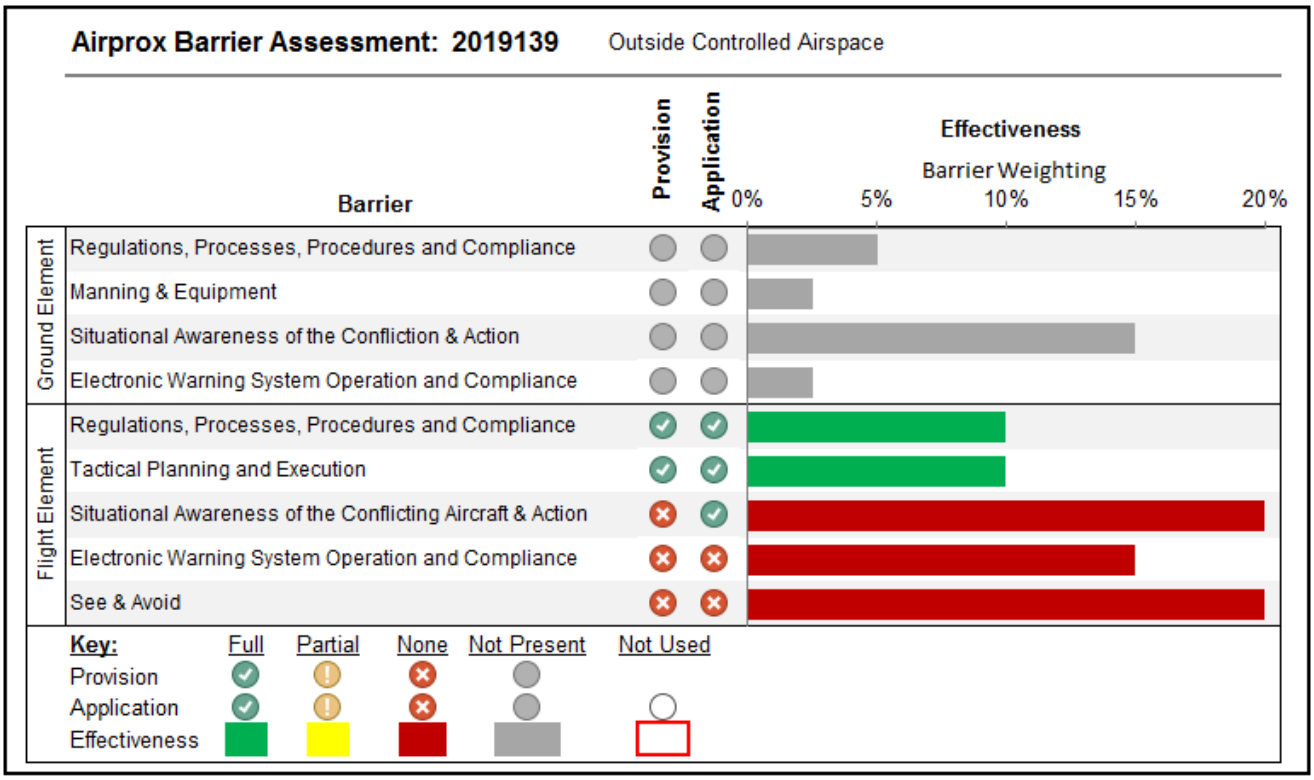
In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

**Flight Elements:**

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **ineffective** because neither pilot had any SA on the other aircraft.

**Electronic Warning System Operation and Compliance** were assessed as **ineffective** because the aircrafts' systems were incompatible with each other.

**See and Avoid** were assessed as **ineffective** because the SR20 pilot didn't see the Discus Glider and the Discus pilot only saw the SR20 as it passed by, too late to carry out any action that would materially increase the separation.




[5] The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the UKAB Website.