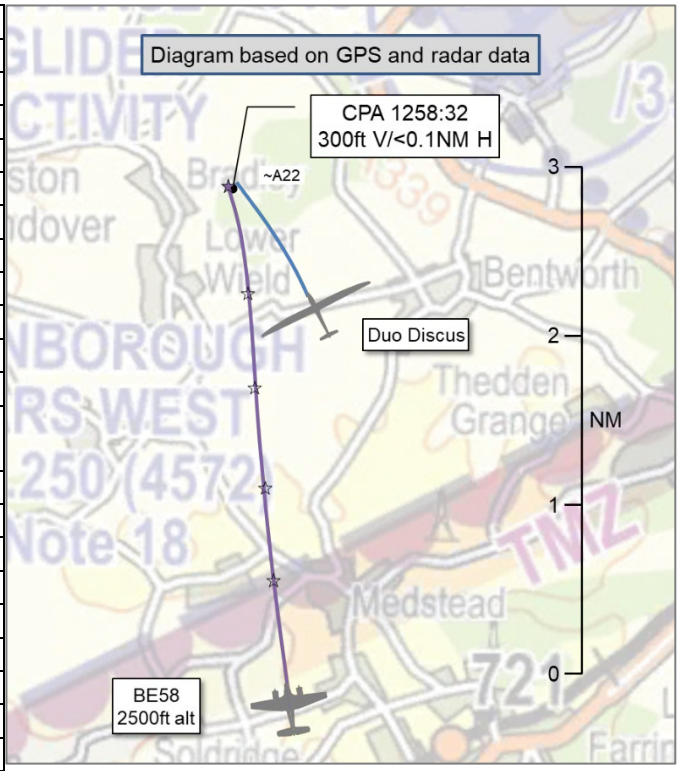
## AIRPROX REPORT No 2023017

Date: 15 Feb 2023 Time: 1259Z Position: 5110N 00105W Location: 2NM SW Lasham

## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

| Recorded | Aircraft 1 | Aircraft 2 |
|---|---|---|
| Aircraft | Duo Discus | BE58 |
| Operator | Civ Gld | Civ FW |
| Airspace | London FIR | London FIR |
| Class | G | G |
| Rules | VFR | VFR |
| Service | Listening Out | Listening Out |
| Provider | Lasham | Solent |
| Altitude/FL | 2200ft | 2500ft |
| Transponder | Off | A, C, S+ |
| **Reported** | | |
| Colours | White | White, blue, red |
| Lighting | Not fitted | Nav, strobe, anti-col |
| Conditions | VMC | VMC |
| Visibility | 5-10km | >10km |
| Altitude/FL | 2150ft | 2500ft |
| Altimeter | QFE (NK hPa) | RPS (NK hPa) |
| Heading | ~355° | 350-280° |
| Speed | ~60kt | 170kt |
| ACAS/TAS | FLARM | TCAS I |
| Alert | None | None |
| **Separation at CPA** | | |
| Reported | 100-200ft V/0m H | Not seen |
| Recorded | 300ft V/<0.1NM H | |




**THE DUO DISCUS PILOT** reports being aero-towed to 3000ft and released for a short non-soaring flight. They were flying almost due north when they both heard the sound of an aircraft engine but could not see the other aircraft. The engine noise got louder and they both tried to look around to see where the aircraft was. It was approaching from directly behind and came into view above the canopy, heading slightly to the left of them. The powered aircraft continued to the northwest.

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

**THE BE58 PILOT** reports conducting a training flight. When approaching Bournemouth, a service was obtained from Bournemouth Radar. A clearance was given to transit overhead Bournemouth via the BIA NDB not above 4000ft. A descent to 2500ft was requested when about 5 miles east of the BIA. Once clear of controlled airspace, a frequency change was requested to Bembridge. A further descent was initiated to 2000ft to the Bembridge overhead. A hold was carried out about 4 miles east of Bembridge at 2500ft to allow for a planning update, and then a diversion to Thruxton was conducted. On leaving the hold, the frequency was changed to Solent for a listening watch. This leg of the flight routed anticlockwise east and north around the Southampton CTR/CTA, keeping clear of Farnborough and Odiham MATZs [sic]. The weather was good with no perceived cloud and the onboard TCAS was operational. A good lookout was maintained as was the listening watch. When at about 10 miles to run to Boscombe, the frequency was changed and a MATZ penetration was requested. At no point did they see the glider in question and neither were they given any TCAS alert for its position.

### Factual Background

The weather at Odiham was recorded as follows:

```
METAR EGVO 151250Z 20010KT CAVOK 13/07 Q1022 NOSIG RMK BLU BLU=
```

## Analysis and Investigation

### UKAB Secretariat

The Duo Discus and BE58 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.[1] If the incident geometry is considered as overtaking then the Duo Discus pilot had right of way and the BE58 pilot was required to keep out of the way of the other aircraft by altering course to the right.[2] When an aircraft carries a serviceable SSR transponder, the pilot shall operate the transponder at all times during flight, regardless of whether the aircraft is within or outside airspace where SSR is used for ATS purposes. […], aircraft without sufficient electrical power supply are exempted from the requirement to operate the transponder at all times.[3] Pilots of non-powered aircraft are also encouraged to operate the transponder during flight outside airspace where carriage and operation of SSR transponder is mandatory.[4]

## Comments

### AOPA

Until there is a common standard for electronic conspicuity, avoidance of a mid-air collision is mitigated by effective lookout and use of a Traffic Service, of which the latter was not available in this case. Effective lookout whilst straight-and-level can also be enhanced by changing heading by a few degrees every few miles.

### BGA

This incident occurred in an area of uncontrolled airspace that has always been busy with a varied mix of traffic, but after the expansion of Farnborough's controlled airspace westward appears to have become even more so, with aircraft being funnelled between the new controlled airspace, the Southampton/Solent CTA/CTR and the Boscombe Down complex. Over 220 gliders are based at Lasham aerodrome, which lies just inside the Odiham MATZ, 2NM from the location of this incident.

The Lasham VHF channel (131.030MHz) is shown on CAA charts, and is typically monitored by Lasham-based gliders flying in this area. If transiting nearby, a brief broadcast call on this channel using 'Unattended Aerodrome' phraseology (CAP 413 §4.162 et seq) could help avoid conflicts and increase everyone's situational awareness.

If the glider's transponder had been switched on, it may have registered on the BE58's TCAS, warning the crew of the impending conflict. Given recent rapid advances in rechargeable battery technology, owners of transponder-equipped gliders could materially benefit by re-equipping with higher-capacity batteries that allow them to run their transponders for longer in flight.

## Summary

An Airprox was reported when a Duo Discus and a BE58 flew into proximity 2NM southwest of Lasham airfield at 1259Z on Wednesday 15th February 2023. Both pilots were operating under VFR in VMC, neither in receipt of a FIS.

[1] (UK) SERA.3205 Proximity.
[2] (UK) SERA.3210 Right-of-way (c)(3) Overtaking.
[3] (UK) SERA.13001 Operation of an SSR transponder.
[4] GM1 (UK) SERA.13001 Operation of an SSR transponder.

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

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

Members discussed the BE58 pilot's decision to listen out on the Solent frequency and agreed that in the busy airspace near Lasham they may have been better served by obtaining a Traffic Service, if possible, or by contacting Lasham on the frequency published on the VFR chart and advising them of their routing (**CF1**). Whilst the glider may not have appeared on radar, and thus not been passed as Traffic Information, or its crew not have assimilated the BE58 pilot's intended routing and its proximity to their location, such communication at least offered the opportunity to do so and take mitigating action. Members agreed that the see-and-avoid barrier had not worked (**CF5**) because the BE58 pilot had not seen the glider and the glider pilot had only seen the BE58 at about CPA, effectively a non-sighting for the purposes of taking avoiding action or increasing separation at CPA. Neither aircraft's occupants were aware of the proximity of the other until heard/sighted (**CF3**) and the EC barrier had not functioned (**CF4**) because the glider transponder had been selected off (**CF2**). Members discussed the glider pilot's decision not to turn the transponder on and noted that SERA.13001 exempted pilots of aircraft 'without sufficient electrical power supply' from operating the transponder 'at all times'. The Board thought that sufficient power should have been available for a 'short non-soaring flight' and therefore that the exemption from SERA.13001 should not have applied, however, the Board was not privy to the state of battery charge of the Duo Discus before it was towed aloft. A gliding member noted that of the approximately 5% of gliders in the UK fitted with a transponder, the majority were so fitted as an airspace compliance measure for operation above FL100 and hence that glider pilots were likely to view the use of a transponder in that context, rather than be aware necessarily of its important and wider function as an EC device. Members agreed that it was unfortunate that the Duo Discus' transponder had been selected off because its use would likely have alerted the BE58 pilot to its location and afforded them the opportunity to take avoiding action. It was hoped that this Airprox could be used as a valuable example of the utility of using a transponder whenever possible. The Board was briefed by a gliding member that the Duo Discus crew had further reported that they had heard the BE58 for approximately 5sec before CPA, at which point it over-flew them, 'displaced to the left by less than one wing-span'. Although one member felt that separation at CPA had been sufficient, the majority agreed that neither pilot had been able to take action before CPA, that the separation at CPA had been largely fortuitous and, therefore, that safety had been much reduced, Risk B.

## PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

| | **2023017** | | | |
|---|---|---|---|---|
| CF | **Factor** | **Description** | **ECCAIRS Amplification** | **UKAB Amplification** |
| | **Flight Elements** | | | |
| | **• Tactical Planning and Execution** | | | |
| 1 | Human Factors | • Communications by Flight Crew with ANS | An event related to the communications between the flight crew and the air navigation service. | Pilot did not request appropriate ATS service or communicate with appropriate provider |
| 2 | Human Factors | • Transponder Selection and Usage | An event involving the selection and usage of transponders | |
| | **• Situational Awareness of the Conflicting Aircraft and Action** | | | |
| 3 | Contextual | • Situational Awareness and Sensory Events | Events involving a flight crew's awareness and perception of situations | Pilot had no, late, inaccurate or only generic, Situational Awareness |
| | **• Electronic Warning System Operation and Compliance** | | | |
| 4 | Technical | • ACAS/TCAS System Failure | An event involving the system which provides information to determine aircraft position and is primarily independent of ground installations | Incompatible CWS equipment |
| | **• See and Avoid** | | | |

| | | | | |
|---|---|---|---|---|
| 5 | Human Factors | • Monitoring of Other Aircraft | Events involving flight crew not fully monitoring another aircraft | Non-sighting or effectively a non-sighting by one or both pilots |
| | **• Outcome Events** | | | |
| 6 | Contextual | • Near Airborne Collision with Aircraft | An event involving a near collision by an aircraft with an aircraft, balloon, dirigible or other piloted air vehicles | |

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:

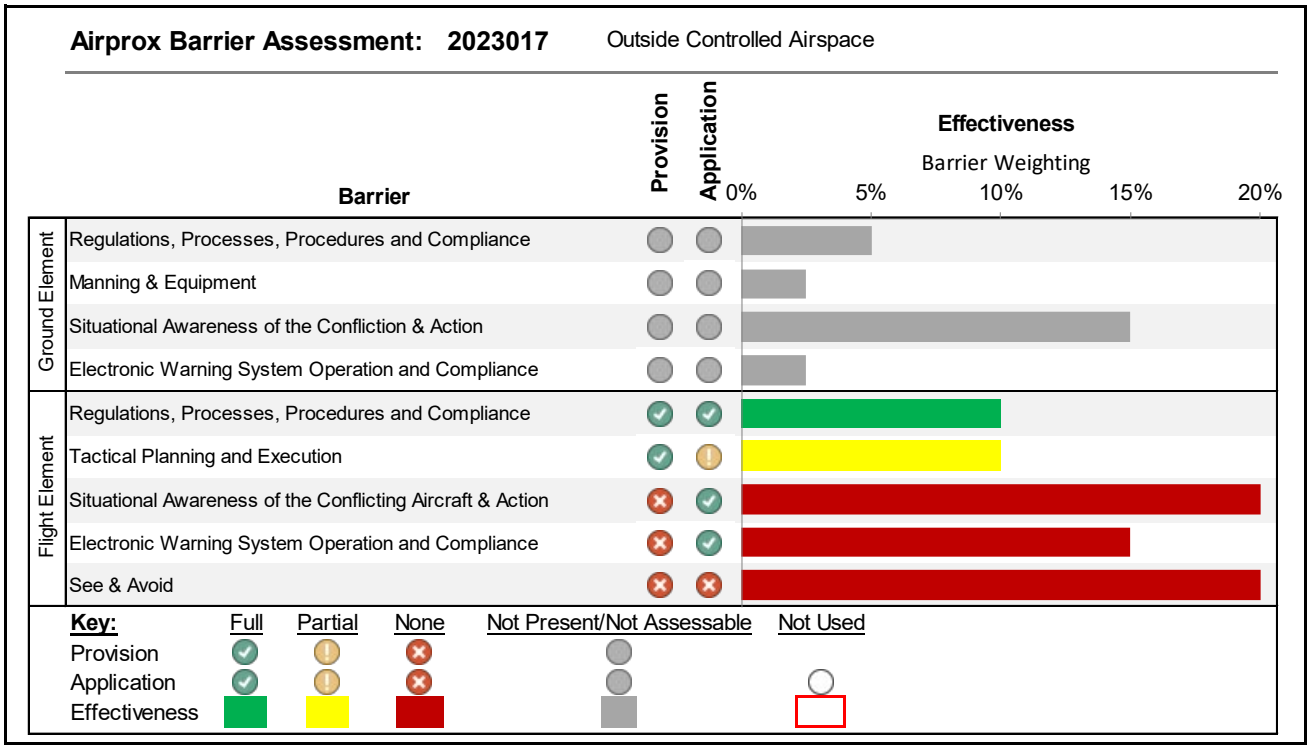
**Flight Elements:**

**Tactical Planning and Execution** was assessed as **partially effective** because the BE58 pilot did not obtain a FIS that might have given them Traffic Information or broadcast their intentions to Lasham and the Duo Discus pilot had selected the transponder off, thereby negating the EC barrier.

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **ineffective** because neither pilot was aware of the other closing aircraft until the Duo Discus pilot heard and then sighted the BE58.

**Electronic Warning System Operation and Compliance** were assessed as **ineffective** because the BE58 TCAS could not alert on the Duo Discus, which had its transponder selected off.

**See and Avoid** were assessed as **ineffective** because the BE58 pilot did not see the Duo Discus and the Duo Discus pilot did not see the BE58 until at about CPA, effectively a non-sighting.




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