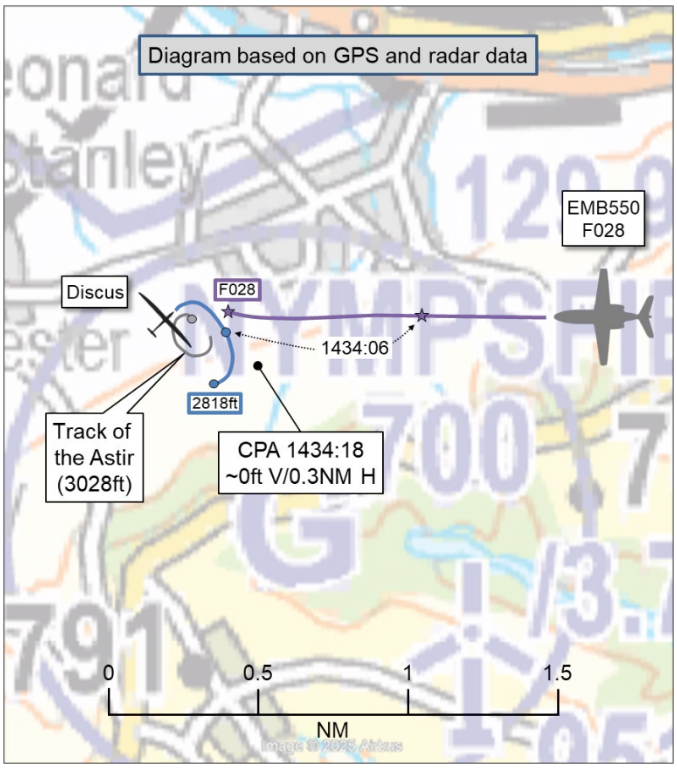
AIRPROX REPORT No 2025094

Date: 22 May 2025 Time: 1434Z Position: 5143N 00217W Location: IVO Nympsfield

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Discus	EMB550
Operator	Civ Gld	Civ Comm
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	IFR
Service	None	Procedural
Provider	N/A	Gloster Approach
Altitude/FL	2818ft	F028
Transponder	Not fitted	A, C, S+
Reported		
Colours	White	Company colours
Lighting	Canopy strobe	Nav, strobe
Conditions	VMC	VMC
Visibility	5-10km	>10km
Altitude/FL	3000ft	3000ft
Altimeter	QNH (1016hPa)	QNH (1019hPa)
Heading	360°	270°
Speed	50kt	184kt
ACAS/TAS	Other	TCAS II
Alert	None	None
Separation at CPA		
Reported	0ft V/500m H	100ft V/300m H
Recorded	~0ft V/0.3NM H	



THE DISCUS PILOT reports that they, and another glider pilot [in an Astir], were in a thermal approximately 0.7NM north-west of Nympsfield airfield, passing circa 3000ft AMSL. The pilot of the other aircraft, [the EMB550], was flying straight-and-level towards them at the same level, may have taken avoiding action upon seeing their canopy strobe and made a hard right turn to a westerly course at approximately 500m distance. The pilot of the Discus reported that they had first sighted the EMB550 at a range of 1km. [After the flight,] they identified the aircraft [using FlightRadar24] and reported it to Gloster ATC. The other pilot in the thermal (a solo pilot with low experience) reported seeing the aircraft only after it had started turning away, and had been very shaken by the incident.

[The Discus pilot] reported the incident to Gloster ATC in the air and then by telephone upon landing. Acknowledging that this had occurred in Class G airspace, they have questioned the lookout of the pilot in the [EMB550] and their routeing through an area of intense gliding activity.

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

THE ASTIR PILOT (as a witness) reports that they were a new solo glider pilot. They were thermalling with [the pilot of the Discus] who had more experience. They were following [the Discus] which was above them [they recall], north-northwest above Nympsfield at about 2800-3000ft. They were circling together and their eyes were on [the Discus] most of the time. They saw [the Discus pilot] do a hard right turn. Something did not feel right and they then noticed the [EMB550] just starting a right turn. They also immediately turned right to go away from it. They did not hear it or feel the wake of it. Their EC device did not provide an alert. They understand that this is Class G airspace, but they are really curious why the jet was that low 20min after departure over a gliding site.

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

THE EMB550 PILOT reports that the weather was good VMC but with haze below the cloudbase which was just over 3000ft AGL. A clearance was issued by Gloster ATC after a right turn for noise abatement on to track 195°, and climbed to maintain 3000ft. They reported reaching 3000ft on the heading and held at that altitude due to traffic above at 4000ft. Both EMB550 pilots were concerned to be held at that level due to the possibility of other traffic and gliders just below cloudbase. They requested a further climb but ATC was unable to [provide a climb] as [they had] no radar and had been reliant on reported altitude for separation. To mitigate, the speed was kept at 180kt with the PM looking out and the PF flying and monitoring the TCAS. Gloster ATC requested their flight conditions with the aim of a climb using visual separation. [The EMB550 crew] was not visual with the other traffic and they had to decline as any climb into the broken cloud would have immediately taken them into IMC. They were on an IFR flightplan. They reminded the controller (after some minutes) that they were still on the heading and maintaining 3000ft. Gloster ATC then cleared them direct to BCN but still to maintain 3000ft and to report when 15NM from Gloucestershire Airport. The PF looked out and saw a glider in the 1130 position at approximately 3100ft and closing. The PF then immediately selected a heading of 320° to avoid it. A moment later, a second glider was sighted, nearer than the first, also approximately 100ft above but significantly closer and converging. No TCAS indication was provided at any time. The autopilot was disconnected and the PF manually put the aircraft into a banked right turn of approximately 30° to avoid the glider and increase separation. Still required to maintain 3000ft, ATC was informed of the avoiding action due to gliders. Unsure of the exact horizontal separation to the glider, the [EMB550 pilot] could make out the outline of the glider pilot in the cockpit.

Being required to have maintained 3000ft just under the cloudbase for approximately three more minutes, had been a significant concern. They were handed over to Cardiff Radar who gave an initial climb. They then took up a radar heading to remain VMC during that time due to recent events and the possibility of further glider activity. They entered controlled airspace and continued the flight under IFR and radar control.

The pilot assessed the risk of collision as ‘Medium’.

THE GLOSTER CONTROLLER reports that they were the APP ATCO at the time, on a split-frequency operation (128.555MHz). [The pilot of the EMB550] was given a departure clearance to climb to 3000ft to procedurally deconflict it against an arriving DA42 on an instrument approach for RW09. Whilst the [EMB550] was released, waiting for it to be airborne, [the pilot of a PA28] made an initial call south of the airport, passing 3300ft. Having had no time to stop the departure of the [EMB550], and due to having had no chance to have coordinated with Tower (which was also busy at the time), they instructed [the pilot of the PA28] to expedite a climb to 4000ft. They had ensured the arriving [DA42] had passed 2000ft on the approach.

The [pilot of the EMB550] came on frequency and was instructed to maintain 3000ft once reached. They attempted to establish whether [the pilot of the EMB550] could take a VMC climb against [the PA28] (maintaining VMC and own separation) but [the pilot of the EMB550] declined the request. They then instructed the [pilot of the EMB550] to resume own navigation on reaching 3000ft to BCN, and to report 15NM west of the airport (thus ensuring it would be geographically clear west of the RNP tracks for RW09). The Airprox may have had occurred either whilst [the EMB550] was changing course from tracking 195° to BCN, or at another instance as described below:

When west abeam [the airport], [the pilot of the EMB550] requested to climb further from 3000ft. [The Gloster controller] declined the request due to [the PA28] being at 4000ft. [The pilot of the EMB550] then asked to make turns to avoid gliders around their level. At 1435, [the Gloster controller] then asked [the pilot of the EMB550] to contact Cardiff Radar for a [surveillance-based service].

[The Gloster controller] waited to ensure [the PA28] had passed SOSAB and had reached the IF and, when they had been happy to continue the approach, advised them of the time [the pilot of the EMB550] had left the frequency west-abeam westbound and their level at the time.

At 1442, the pilot of the Discus then called requesting to file an Airprox, which had occurred near Nympsfield, involving the [EMB550].

Factual Background

The weather at Gloucestershire Airport was recorded as follows:

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METAR EGBJ 221420Z 04007KT 010V100 9999 FEW038 18/08 Q1019
METAR EGBJ 221450Z 05008KT 020V080 9999 FEW038 17/08 Q1019
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Analysis and Investigation

Gloucestershire Airport Unit Investigation

The investigation centred on the services offered to [the pilot of the (uninvolved) PA28] and [the pilot of the EMB550]. [The PA28] was included as it was this aircraft against which [the EMB550] was restricted to an altitude of 3000ft which would have been a contributing factor to the proximity with gliders at the Nympsfield gliding site.

[The pilot of the PA28] had booked-in and appeared on the Traffic Spreadsheet as an inbound IFR movement for IAP training from 1430 to 1500. [The EMB550] appeared as a generic IFR departure at 1430. ATC would have been aware of both flights.

Both ADC and APP ATCOs were endorsed in both ADI and APP. Workload of the ADC ATCO was heavy. The ADC position had been occupied by a trainee but training was suspended at approximately 1415 as the workload was too high for the trainee to be able to cope. At that point, the OJTI took over the position on their own. Workload of the APP ATCO was assessed as medium by the ATCO on duty.

The Investigator conducted a telephone interview with the pilot of [the PA28]. The pilot advised that, whilst they had booked in with Gloster Airport for Instrument Approach training, they were, in fact, flying VFR. That fact was not passed to Gloster Approach and the Gloster Approach ATCO made the reasonable assumption that they were flying IFR as they were conducting instrument approaches. The fact that they were flying VFR seemed to reinforce their request for a Basic Service rather than a Procedural Service. As they were under a Basic Service and flying VFR, the Gloster Approach ATCO could have continued the climb of [the EMB550] and not required the restriction to 3000ft. This would most likely have prevented the Airprox from occurring.

The following extracts from CAP774 are included for clarification with brief explanations of applicability in this case:

> 5.1 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.

As [the pilot of the PA28] was not participating in the Procedural Service, Gloster Approach was not obliged to separate [the EMB550] from [the PA28].

> 5.2 A Procedural Service shall only be provided by controllers at ATC units with Regulatory approval to provide such an ATS. Controllers at ATC units that do not have surveillance information available may routinely apply Procedural Service to pilots of aircraft carrying out IFR holding, approach and/or departure procedures without the need to first elicit the pilots' requirements.

Whilst [the pilot of the PA28] had requested a Basic Service, the Gloster Approach ATCO, to all intents and purposes, treated [the pilot of the PA28] as if they were receiving a Procedural Service as this was what the ATCO was used to applying and because they thought that separating the two aircraft had been the appropriate thing to do as they believed they were both IFR.

> 5.3 A Procedural Service shall only be provided to flights under IFR, irrespective of meteorological conditions. The controller will expect the pilot to accept levels, radials, tracks, routes and time allocations

> that may require flight in IMC. A pilot who is not suitably qualified to fly in IMC shall not request a Procedural Service unless compliance permits the flight to be continued in VMC.

It is normal practice for Gloster Approach controllers not to ask [the pilots of] inbound aircraft if they are VFR or IFR and the ATCO had assumed [the pilot of the PA28] was IFR as they were inbound for 'instrument training'.

With regard to Traffic Information under a Procedural Service, CAP774 states:

> 5.5 .....the pilot is wholly responsible for collision avoidance.....
>
> 5.5 Under a Procedural Service, the controller has no ability to pass traffic information on any aircraft that they are not in communication with, unless they have been passed traffic information by another ATS unit.

The Approach ATCO was not aware of the presence of the gliders (including [the Discus]) and so had no ability to pass Traffic Information on them.

When discussing the event with the Head of Operations at the Charter Company responsible for chartering [the EMB550] for that flight, the investigator was [reportedly] told that the pilot of that flight would not have been following VFR charts and so would not have been aware of the areas of intense gliding activity at Nympsfield and Aston Down.

CAP493, Section 1, Chapter 11, Para 5, states:

> 5. Considerations for Traffic Receiving a Service Outside Controlled Airspace:
>
> 5.1 Instructions issued by controllers to IFR/VFR flights operating within Class F/G airspace are not mandatory; however, the services rely upon pilot compliance with the specified terms and conditions so as to promote a safer operating environment for all airspace users.

The pilot of [the EMB550] could have advised Gloster Approach that they were not going to adhere to a level restriction of 3000ft and would climb but they chose to maintain 3000ft.

The following includes extracts of the Tower and Approach transcripts with comments from the Investigator. Tower transmissions to the pilots of other aircraft are not included, but workload was high.

> 1420:22 - Tower – "[EMB550 C/S] *hold at Alpha 2 after departure right turn out Track 195 climb to altitude 3000 feet, remain outside controlled airspace, squawk 6337, next frequency Gloster Approach 128.555*".
>
> 1420:45 - EMB550 – "*That's understood* [EMB550 C/S], *after departure, noise abatement that's a right turn radar heading 195 climb altitude 3000 feet squawk is 6337 and when advised it's to departures 128.555* [EMB550 C/S]".

[The pilot of the EMB550] read back "*radar heading*" instead of "*track*". This was not challenged by the Tower ATCO. The investigator requested a discussion with the pilot of [the EMB550] but this request was not fulfilled. It is possible that [the pilot of the EMB550] was under the impression that they were to receive a surveillance service from Gloster Approach which may have led to an expectation bias as to the amount of Traffic Information and deconfliction advice that the pilot would have expected.

The level restriction of 3000ft was to ensure vertical separation against [the PA28] and the track of 195° was to ensure lateral procedural separation against [a DA42] which was on an RNP approach for RW09.

Approach transmissions to the pilots of other aircraft are not included but workload was medium:

> 1425:03 - PA28 – "*Gloster Radar* [PA28 C/S] *inbound to you for training approaches*".

1425:10 - APP – "[PA28 C/S], *Gloster Approach, negative radar, information Victor, QNH 1019, squawk 4530, pass your message*".

1425:22 - PA28 – "*Information Victor 1019 squawk 4530 we are PA28* [takeoff airfield] *inbound to you for approaches request RNP runway 09 via SOSAB and request Basic Service*".

1425:40 - APP – "[PA28 C/S] *and err Basic Service, route direct to SOSAB report your level please*".

1425:49 – PA28 – "*Basic Service route direct SOSAB and we'll climb to 3500 feet on 1019* [PA28 C/S]".

Although a Basic Service was agreed, this information was not fully assimilated by the APP ATCO (most likely due to the fact that, historically, there has been an expectation placed on Gloster APP ATCOs that all inbound training traffic must be IFR and therefore they are obliged to assume that a Procedural Service must be given. No advice had been given to them to say that flying the lateral and vertical profiles of an Instrument Approach Procedure whilst remaining VFR and receiving a Basic Service could have been an option and that that could assist by negating the need for Procedural Service separations and, ultimately, could have allowed [the EMB550] to continue climbing and prevented the Airprox).

The APP ATCO involved confirmed at interview that, whilst they had agreed a Basic Service verbally, they were, effectively, providing [the pilot of the PA28] with a Procedural Service under the assumption that they were IFR (although they were VFR and so could not have been given a Procedural Service). This possible anomaly between the most appropriate service to help with Approach workload and literal interpretation of CAP774 and CAP493, application of Procedural Service needs further exploration locally and an observation from the Investigator that it may need a review at national level too.

1425:59 - APP – "[PA28 C/S] *report your level right now*".

1426:01 - PA28 – "*3300 feet 1019* [PA28 C/S]".

1426:39 - APP – "[PA28 C/S] *expedite climb to altitude 4000ft report reaching. Essential traffic information is an eastbound Twin Star on an 8 mile final for runway 09*".

1426:50 - PA28 – "Climb 4000ft and copy traffic [PA28 C/S]".

1428:05 - APP – "[PA28 C/S] report your level".

1428:08 - PA28 – "4000ft on 1019 [PA28 C/S]".

1428:12 - APP – "[PA28 C/S] thank you, maintain 4000ft route direct to SOSAB report your estimate for SOSAB".

1428:22 - PA28 – "Route direct SOSAB maintain 4000ft and expected at SOSAB at 1434 local [PA28 C/S]".

1428:34 - APP – "[PA28 C/S] roger request best speed until reaching SOSAB and maintain 4000ft until instructed, cleared RNP09 via SOSAB and report SOSAB".

The APP ATCO was eager to expedite [the pilot of the PA28] routeing to SOSAB as, once they had reported at SOSAB, they could have climbed [the EMB550] above 3000ft as SOSAB and a track of 195° are deemed to be separated in MATS Part 2.

1428:47 – PA28 – "*Report SOSAB and cleared down to the approach and um confirm maintain 4000' until SOSAB* [PA28 C/S]".

1428:55 - APP – "*Affirm until instructed. I've got a jet just departed to the south-west, er, west-southwest, climbing to 3000ft*".

1429:04 - PA28 – "*Copied* [PA28 C/S] maintain 4000ft".

1430:02 - EMB550 – "*And Gloster it's* [EMB550 C/S] *heading 195 climbing altitude 3000 1019*".

1430:11 - APP – "[EMB550 C/S] *Gloster Approach Procedural Service I'm unable to climb you above 3000 feet due to other IFR traffic from the south-west, report reaching altitude 3000 feet*".

1430:23 - EMB550 – "*Maintaining altitude 3000 feet now on QNH 1019 the heading 195* [EMB550 C/S]".

1430:32 - APP – "[PA28 C/S] roger".

In the above transmissions, the APP ATCO was making both [the pilot of the PA28] and [the pilot of the EMB550] aware of each other and giving the reasons for the level restrictions. [The pilot of the EMB550] twice referred to being on a "*heading*" of 195° when they had been asked to fly a "*track"* of 195°. That was not corrected. The APP ATCO advised [the pilot of the EMB550] that it was a Procedural Service but that was not acknowledged by the pilot.

1431:00 - APP – "[PA28 C/S] *are you VMC*?".

1431:04 - PA28 – "*Affirm* [PA28 C/S]".

1431:06 - APP – "[EMB550 C/S] *are you VMC*?".

1431:12 – EMB550 – "[EMB550 C/S] *we are visual conditions sir, ye*s".

1431:17 - APP – "[PA28 C/S] *are you able to accept a jet aircraft Embraer 550 at the moment south-southwest bound to climb through your level in VMC maintain their own separation against you?*".

1431:37 - EMB550 – "*And* [EMB550 C/S] …..". Garbled, two transmissions at once.

14:31:45 - APP – "[EMB550 C/S] *sorry you were stepped on, say again*".

14:31:48 - EMB550 – "*Yeah we're maintaining 3000 feet 1019 on a heading of 195 but visual separation at the moment is not going to be an option for us*".

1431:56 - APP – "*Roger, then maintain altitude 3000 feet and route direct to err towards Brecon and report one five miles from the field*".

1432:10 - EMB550 – "*Route direct Brecon now and report fifteen from the field* [EMB550 C/S]".

The APP ATCO was very keen to climb [the EMB550] and so established that both aircraft were VMC in order to offer [the pilot of the EMB550] the opportunity to climb in VMC. When the APP ATCO asked [the pilot of the PA28] if they could accept a VMC climb-through by [the EMB550], [the pilot of the EMB550] responded first and there were two garbled transmissions at once at time 1431:37.

The Investigator questioned the pilot of [the PA28] as to what they had said there but the pilot could not remember. From the RT recordings, it sounds as though the [pilot of the PA28] may have said "*affirm, we'd be under VFR,* [PA28 C/S]". Unfortunately, if that was the case, then it was missed by the APP ATCO and another opportunity was missed to be able to climb [the EMB550], [the pilot of which] subsequently declined the opportunity to climb in VMC.

The APP ATCO then de-restricted [the EMB550] from the track of 195° with the use of the term "*route direct*" to Brecon. It may have been more appropriate to have used the term "*resume own navigation Brecon*" as that would clearly put the responsibility for the choices of lateral routeings with the pilot, whereas "*route direct*" means just that (albeit those terms are normally used proactively in a radar setting).

The APP ATCO re-iterated the instruction to [the pilot of the EMB550] to maintain altitude 3000ft as they believed (incorrectly) that they were still having to vertically separate [the EMB550] from [the PA28]. By then, [the EMB550] was in the vicinity of Aston Down gliding area (from using third-party ADS-B software replays) and it is believed the aircraft flew relatively close to other gliders [too].

From third-party ADS-B software, it seems that [the EMB550] subsequently tracked west maintaining altitude 3000ft. That routeing took it into close proximity with [the Airprox Discus] and [Astir] which were both operating in the vicinity of Nympsfield gliding area.

1432:20 - APP – "[PA28 C/S] *I won't be able to descend you any further down for a few minutes due to IFR traffic below you. Report your range from SOSAB now*".

1432:32 - PA28 – "*Copied and 3 miles from SOSAB* [PA28 C/S]".

1432:43 - APP – "[PA28 C/S] *roger maintain altitude 4000 feet cleared RNP approach runway 09, report passing SOSAB. I may start to descend you from about the intermediate fix, we'll see*".

1432:55 - PA28 – "*Maintain 4000 feet, report SOSAB and cleared RNP runway 09* [*PA28 C/S*]".

The above transmissions indicated that the APP ATCO was still aiming to provide Procedural Service separation vertically between [the EMB550] and [the PA28].

1434:21 - EMB550 – "…..[EMB550 C/S] *right turn glider avoidance heading 330*".

1434:27 - APP – "[EMB550 C/S] *roger*".

1434:29 - EMB550 – "*Roger, okay we'll require further climb now please*".

1434:33 - APP – "*I'm not able to do that procedurally so I suggest you contact now Cardiff Radar 125.855*".

1434:41 - EMB550 – "*125.855*".

The above transmissions indicated the reporting of the avoidance action taken by [the pilot of the EMB550] against gliders and that the APP ATCO had tried to expedite the climb of [the EMB550] by transferring them to a radar unit.

1442:04 - Discus – "*Gloster Approach this is* [Discus C/S]".

1442:10 - APP – "[Discus C/S] *Gloster Approach pass your message*".

1442:14 - Discus – "*Um I'd like to report an Airprox I believe an Embraer Legacy departed your airfield bound for […] and flew directly towards Nympsfield and er got very close to two gliders in the thermals*".

Conclusion

Throughout the above, [the pilot of the EMB550] could have elected to climb and would have just needed to notify Gloster Approach of their desire to do so. The investigator believes that the following are the root causes of the Airprox:

1. APP ATCO unnecessarily separating the [EMB550] (under a Procedural Service) from [the PA28] (under a Basic Service) although, effectively, providing a Procedural Service even though a Basic Service had been agreed.

2. APP not ascertaining that [the pilot of the PA28] was under VFR.

3. Restriction of [the EMB550] to 3000ft for procedural separation purposes along with the track of [the EMB550] that had taken it into close proximity with Nympsfield gliding area.

4. Expectation bias of the APP ATCO with regard to application of Procedural Service in regard to inbound 'instrument' training aircraft.

5. [The pilot of the EMB550] not climbing in VMC, not requesting to climb for safety reasons and not utilising VFR chart information.

6. Possible pilot misinterpretation of what separation and information shall be provided under a Procedural Service and the possibility that [the pilot of the EMB550] had mistakenly believed they were receiving a radar service.

The following safety notice (ATC_SN_2025_05) was issued in response to this incident:

MATS Part 2 (Section 1, Chapter 10 , Paragraph 4) states:

4. Gliding Sites 4.1.

Winch launch and aerotow gliding takes place from Nympsfield, (EGBJ 200°T, 12NM) and Aston Down, (EGBJ 175°T, 11NM) from sunrise to sunset. Maximum published winch cable vertical limits for Nympsfield and Aston Down are 3700ft AMSL and 3600ft AMSL respectively. Aerotow gliding also takes place at Bidford, (EGBJ 040 °T, 18 NM). The Cotswold escarpment provides a favourable and popular location for gliding and paragliding activity. All ATC staff are to remain vigilant for the presence of gliders both visually and on radar. **When appropriate, pilots are to be advised if their planned or observed track is likely to take them into the proximity of known gliding activity.**

The emboldened section of the above paragraph should be noted. Whilst it is not currently possible to know the exact proximity of departing IFR aircraft to local gliding sites, ATCOs must take all reasonable endeavours to ensure that ATC clearances will not result in IFR aircraft conflicting with Areas of Intense Gliding Activity and, at the very least, inform aircraft that they may be tracking toward the gliding activity.

Approach controllers should consider:

Issuing a northerly turn after departure rather than a southerly turn e.g. for a departure off runway 09 that will ultimately route to BCN, then consider issuing a left turn after departure if you need to ensure separation against other IFR traffic.

Only issuing a track (that could route a departing IFR aircraft towards gliding activity) if you can do it with an associated climb to a level of 4000ft or above.

Holding IFR departures on the ground until a level and routeing can be issued that carries no risk of conflict with gliding areas. Please note that, if the operator of an aircraft that is held on the ground for safety reasons, elects to take issue with such decisions then they should be referred to MATS.

Climbing inbound/transiting aircraft to a level that will allow issuance of a level above the gliding sites to departing IFR aircraft.

Note:

1. The current ATIS message “Intense gliding activity has been observed in the vicinity of the aerodrome” cannot be relied upon to ensure IFR pilots are aware of the specific activity to the south of the airfield and so this activity should be highlighted if issuing levels and/or tracks that may take aircraft towards the vicinity of the gliding.

2. If you have reason to believe that the pilot of a departing IFR aircraft maybe unsure of the service that will be provided (Procedural) e.g. he/she reads back “radar heading 195°” as part of a clearance instead of “track 195°”, then this should be corrected, the Procedural Service confirmed and advice that no radar service is available reiterated if necessary.

3. It cannot be assumed that VMC climb or descent will be accepted even if the METAR would suggest that such acceptance would be likely.

4. It is imperative that controllers ensure that pilots of departing, transiting and arriving aircraft read back the correct type of service being agreed.

CAA ATSI

ATSI has reviewed the reports for this Airprox and has nothing to add to the Gloucestershire Unit investigation report.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and the EMB550 could be positively identified from Mode S data (Figure 2). The EMB550 was depicted on the replay as having flown at Flight Levels. The Discus and the Astir were not observed on the replay. The Discus and EMB550 were also observed by reference to ADS-B data sources.

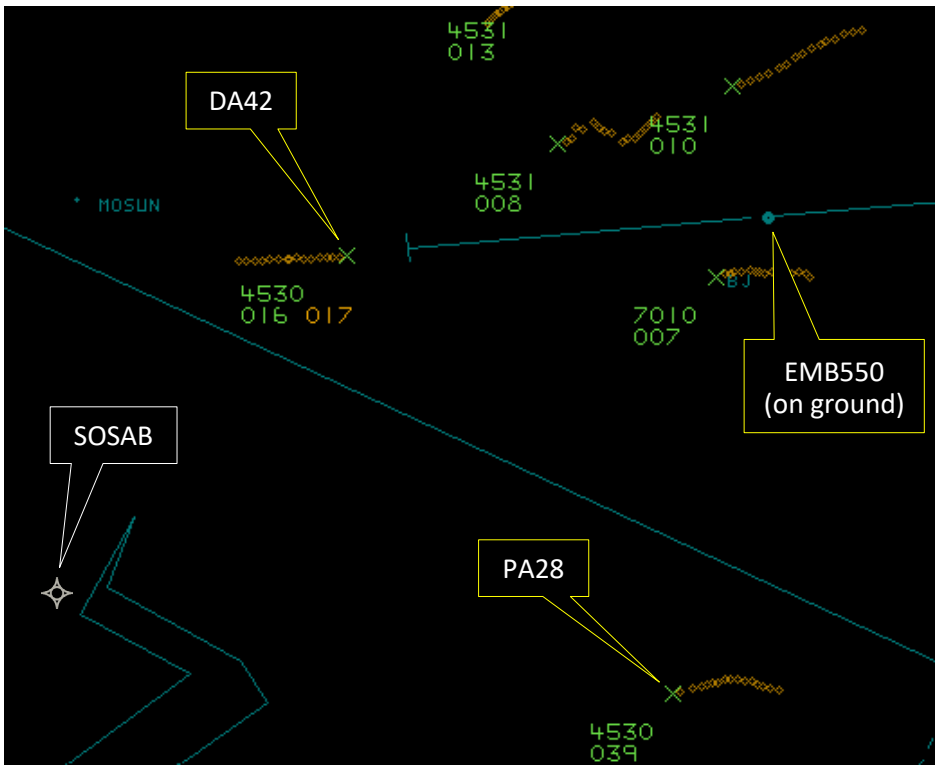

Figure 1 – Aircraft positions at 1428 (6min 18sec before CPA).

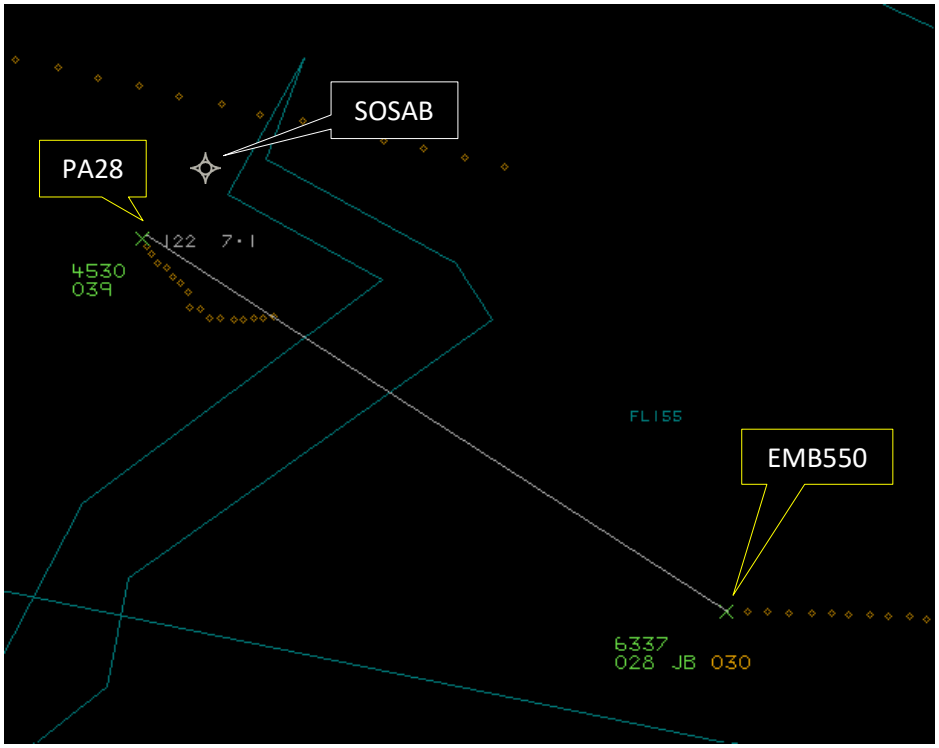

Figure 2 – CPA at 1434:18

The pilot of the Discus and the pilot of the Astir kindly supplied GPS track data for their respective flights. It was by combining the data sources that the diagram was constructed and the separation at CPA determined. The Discus and the Astir have been shown in the diagram with altitudes based on standard pressure.

The Discus and EMB550 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 head-on or nearly so then both pilots were required to turn to the right.[2]

Occurrence Investigation

An investigation was conducted by Director of Flight Operations [for the EMB550 operator] which included discussions with Gloucestershire Airport ATC, the crew of [the EMB550] and the pilot of [the Discus].

[The EMB550 crew] had been cleared to take-off with no indication that the aircraft would be held at 3000ft VMC for an extended period of time due to conflicting traffic. The conflicting traffic was a PA28 at 4000ft, approximately 5NM to the west, and it would appear that this aircraft and an inbound DA42 were given priority over the departing CAT aircraft with passengers onboard.

[The EMB550] departed and was subsequently held at 3000ft for almost 10min. Had the PIC known this then they would certainly have chosen to delay their departure. The aircraft initially departed on a track of 195° for approximately 10NM before being cleared directly to BCN VOR. The initial south-westerly track had taken the aircraft within 2NM of the gliding site at Aston Down, before the aircraft was routed toward BCN VOR, with the subsequent westerly track taking the aircraft through an area of intensive gliding activity within 1NM of the Nympsfield gliding site at 3000ft. This led to the Airprox event.

As stated above, the crew spotted the gliders at a range of 1000-1300m and took appropriate avoiding action. Despite the Airprox, it still took the crew a further 4min to obtain a climb. [The investigator suggested that] a better course of action would have been for the departure of [the EMB550] to have been delayed. This would have avoided extended vectoring and would have enabled the crew to have obtained a safer and more direct routing to BCN and a relatively unrestricted climb.

Comments

BGA

Nympsfield is one of about 80 permanent gliding sites listed in UK AIP ENR 5.5 and labelled on the CAA VFR charts with a “G” symbol, as shown on the chart segment in Part A. A greater density of gliders may be expected nearby at any time during daylight hours at any altitude up to cloudbase, accompanied by high-tensile-strength winch-launch cables overhead the site at up to 3000ft AAL (3700ft AMSL). Aston Down gliding site is about 6NM east of Nympsfield and is also potentially active during daylight hours every day, with winch-launch cables overhead at up to 3600ft AMSL.

It is concerning that the EMB550 pilot’s route took them within 2NM of Aston Down gliding site and 1NM of Nympsfield gliding site without either the pilot or the Gloster ATCO apparently being aware of their proximity to these areas of intense glider activity and potential winch-launch cables at the EMB550’s altitude.

Although few gliders in the UK are fitted with Mode C/S transponders, almost all carry Electronic Conspicuity (EC) equipment that enables their position and altitude to be displayed on a Flight Information Display (FID) with GPS accuracy. Commercially-available FIDs that integrate transponder, glider EC and ADS-B data in a single display in real-time give ATSU controllers situational awareness of gliding activity. The BGA would be happy to advise any ATSU wishing to use readily-available, real-time EC data to enhance flight safety in this way.

[1] (UK) SERA.3205 Proximity.
[2] (UK) SERA.3210 Right-of-way (c)(1) Approaching head-on.

Summary

An Airprox was reported when a Discus and an EMB550 flew into proximity in the vicinity of Nympsfield at 1434Z on Thursday 22nd May 2025. The Discus pilot was operating under VFR in VMC, not in receipt of a FIS. The EMB550 pilot was operating under IFR in VMC in receipt of a Procedural Service from Gloster Approach.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, GPS track data for the flight of the Discus, a report from the air traffic controller involved and reports from the relevant operating authorities. 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 first considered the actions of the pilot of the EMB550, and members noted that the presence of the PA28 and DA42 in the wider area had influenced how the encounter had unfolded. It was noted that the DA42, whose pilot had requested an instrument approach to RW09, had been operating at 2000ft. At 1420:22, the EMB550 pilot had been given departure instructions to climb to 3000ft and, at 1425:03, the pilot of a PA28 (who had been approximately 8NM south abeam the airfield at that time) had made first contact with the Gloster controller and had reported that they had been climbing to 3500ft. In the knowledge that the EMB550 was to be subsequently routed to the south, the Gloster controller had instructed the pilot of the PA28 to expedite their climb to 4000ft. Consequently, it was clear to members that the controller's plan had been to have maintained a vertical separation of 1000ft between each of the three aircraft.

A member with particular knowledge of commercial flight operations explained that, typically, the EMB550 pilot might have expected their departure to have involved a climb to 6000ft shortly after takeoff. The pilot would, therefore, not have expected to have been held at 3000ft for a prolonged period. Members noted that at 1430:02 (approximately 2min after takeoff), the pilot of the EMB550 had indicated to the Gloster controller that they had wished to climb, and the Gloster controller had responded to say that a climb had not been possible.

Members recalled the wording of CAP774, Ch.5 Procedural Service:

> Levels.
>
> 5.15 […] unless safety is likely to be compromised, a pilot shall not change level without first obtaining approval from the controller […].

It was noted that the pilot of the EMB550 had been concerned to have maintained 3000ft and had reduced their speed and had continued with increased vigilance. Members noted that, subsequently, the Gloster controller had enquired whether the PA28 pilot would accept the EMB550 climbing through their level (4000ft) if the EMB550 pilot maintained visual separation from them. It was noted that the pilot of the EMB550 had quickly transmitted to say that that would not have been possible for them (as they may have entered IMC). Members pointed out that, if the Gloster controller had assimilated that the PA28 pilot had been under VFR and in receipt of a Basic Service, the EMB550 pilot could have been issued with a climb and the PA28 pilot could have maintained visual separation from it. This was a point to which members would later return.

Members turned their attention to the moments before CPA, and it was noted that two gliders had been visually acquired by the EMB550 pilot. Avoiding action had been taken in response to the sighting and they had reported to the Gloster controller at 1434:21 that they had turned right for "*glider avoidance*". In consideration of the timing of the reported sighting of the Discus (and, members presumed, the Astir) and the action taken, members agreed that the Discus had been sighted late (**CF9**). Members agreed that the TCAS fitted to the EMB550 would not have been expected to have detected the presence of the Discus (**CF7**) and, consequently, that the pilot of the EMB550 had not had situational awareness of the Discus until it had been sighted (**CF6**).

Members next turned their attention to the actions of the Discus pilot, and it was noted that two EC devices had been fitted to their aircraft. One device had had the capability to have broadcasted and to have received ADS-B transmissions. That device had not been connected to a display and, therefore, although it would have been expected to have detected the EMB550, an alert would not have been received by the Discus pilot. The other device would also have been expected to have detected the presence of the EMB550, however, no alert had been reported (**CF8**). Accordingly, members agreed that the pilot of the Discus had not had situational awareness of the EMB550 (**CF6**). Notwithstanding, members noted that the pilot of the Discus had sighted the EMB550 when it had been at a range of approximately 1km. Given the closing-speed of the approaching EMB550, members agreed that it had been sighted late (**CF9**).

The Board next focussed on the actions of the Gloster controller and, turning to the controller's initial interaction with the pilot of the EMB550, members noted that the departure instructions had been read back as "...*after departure, noise abatement, that's a right turn radar heading 195*…". Members agreed that the controller had not corrected the readback (**CF2**) and had, perhaps, inadvertently reinforced a misunderstanding on the part of the EMB550 pilot that they had received, and would later receive, radar headings.

Members next recalled their earlier discussion concerning the PA28, and noted that the flight of the PA28 had been 'booked-in' as an inbound IFR movement for IAP training. The Gloucestershire Airport investigation had identified that, although the PA28 pilot had indeed booked their flight for IAP training, they had intended to operate under VFR, a fact not available to the Gloster controller at the time from their traffic sheet. On first contact with the controller at 1425:22, the pilot of the PA28 had requested a Basic Service which was subsequently acknowledged and agreed. Members concurred with the findings in the Gloucestershire Airport investigation that had identified that the Gloster controller had, essentially, subsequently provided a Procedural Service. As such, members determined that the Gloster controller had not applied the service that had been agreed with the PA28 pilot and that that had contributed to how the controller had subsequently dealt with their separation from the EMB550 (**CF1**).

Members agreed that the Gloster controller had acted on the assumption that the flight of the PA28 would have been operated under IFR (**CF3**) and agreed that, had they been aware that the PA28 pilot had been under VFR, and had assimilated that they had agreed a Basic Service, then they had not needed to have applied the deconfliction minima required under a Procedural Service. Members recalled the wording of CAP774, Ch.5 Procedural Service:

> Deconfliction.
>
> 5.6 A controller shall provide deconfliction instructions by allocating levels, radials, tracks, routes and time restrictions, or use pilot position reports, aimed at achieving a planned deconfliction minima from other aircraft to which the controller is providing a Procedural Service in Class G airspace.
>
> 5.7 The deconfliction minima are: 1000ft vertically [...]

Concluding their discussion, members summarised their thoughts. It was felt that, by not having assimilated the flight rules for the PA28 pilot and having applied the deconfliction minima for a Procedural Service, the Gloster controller had, essentially, restricted their own options to manage the traffic expeditiously. Members were in agreement that the routeing and levels issued by the Gloster controller had contributed to the Airprox (**CF5**). Ultimately, the Gloster controller had not had situational awareness of the Discus (**CF4**) and could not have provided any deconfliction advice to the pilot of the EMB550. Members were in agreement that, although the separation at CPA was recorded as 0.3NM, the safety of the aircraft involved had not been assured and there had been a risk of collision (**CF10**). The Board assigned Risk Category B to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2025094			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Regulations, Processes, Procedures and Compliance			
1	Human Factors	• ATM Regulatory Deviation	An event involving a deviation from an Air Traffic Management Regulation.	Regulations and/or procedures not fully complied with
	• Situational Awareness and Action			
2	Human Factors	• ATM Personnel Hear back	An event involving the hearback (listening) of ATM personnel to communications	
3	Human Factors	• Expectation/ Assumption	Events involving an individual or a crew/ team acting on the basis of expectation or assumptions of a situation that is different from the reality	
4	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, no or inaccurate Situational Awareness
5	Human Factors	• Traffic Management Information Provision	An event involving traffic management information provision	The ANS instructions contributed to the Airprox
	Flight Elements			
	• Situational Awareness of the Conflicting Aircraft and Action			
6	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			
7	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
8	Human Factors	• Response to Warning System	An event involving the incorrect response of flight crew following the operation of an aircraft warning system	CWS misinterpreted, not optimally actioned or CWS alert expected but none reported
	• See and Avoid			
9	Human Factors	• Identification/ Recognition	Events involving flight crew not fully identifying or recognising the reality of a situation	Late sighting by one or both pilots
	• Outcome Events			
10	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[3]

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

Ground Elements:

Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because the Gloster APP ATCO had applied the provisions of a Procedural Service to the pilot of the PA28 who had requested a Basic Service.

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

Situational Awareness of the Confliction and Action were assessed as **ineffective** because the Gloster APP ATCO had not had situational awareness of the Discus.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither pilot had situational awareness of the presence of the other aircraft.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the EC device fitted to the Discus would have been expected to have detected the presence of the EMB550 but no alert was reported.

See and Avoid were assessed as **partially effective** because both pilots sighted the other aircraft late.