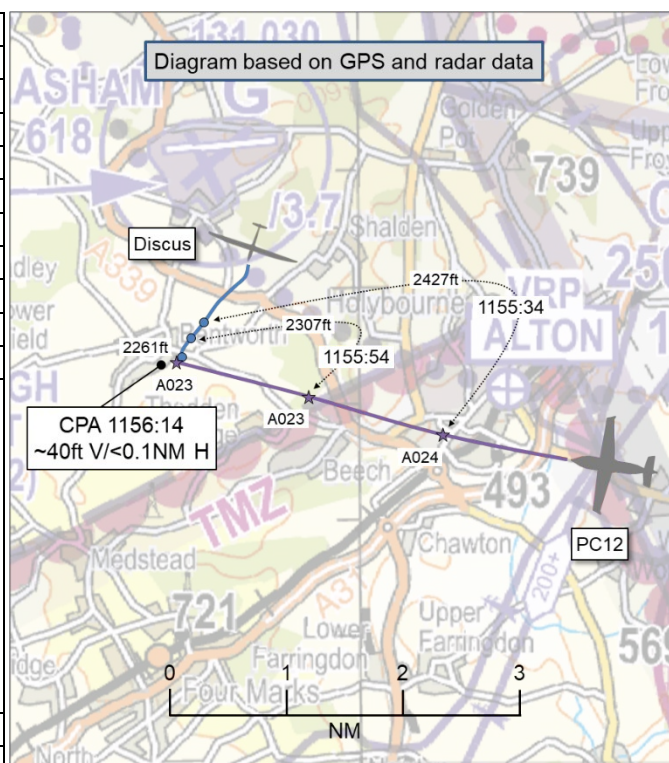


AIRPROX REPORT No 2024250

Date: 29 Sep 2024 Time: 1156Z Position: 5109N 00102W Location: 2NM S Lasham

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Discus	PC12
Operator	Civ Gld	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Listening Out	Traffic
Provider	Lasham Gliders	Farnboro' LARS W
Altitude/FL	2261ft	A023
Transponder	Not fitted	A, C, S+
Reported		
Colours	White	Not Reported
Lighting	None	
Conditions	VMC	
Visibility	>10km	
Altitude/FL	1700ft	
Altimeter	QFE	
Heading	220°	
Speed	45kt	
ACAS/TAS	FLARM	
Alert	None	
Separation at CPA		
Reported	0ft V/0.4NM H	NR
Recorded	~40ft V/<0.1NM H	



THE DISCUS PILOT reports that they were launched by aero-tow from Lasham airfield to 2000ft AGL. They were released at 1148:35 just north-west of Alton. At 1155, they were flying straight-and-level with a heading of 220°, pointing into wind. At 1156, a grey-coloured powered-plane, [the PC12], was at the same height and, with low horizontal separation, passed by at high speed. It was moving from left-to-right. They took avoiding action by making a sharp left turn.

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

THE PC12 PILOT did not respond to requests to submit a report.

THE FARNBOROUGH LARS WEST CONTROLLER reports that they were retrospectively made aware of an Airprox which took place on the 29th September 2024. They have no recollection of the incident, however, have been made aware that it involved a PC12 aircraft.

Factual Background

The weather at Farnborough was recorded as follows:

METAR EGLF 291150Z 16015KT 9999 SCT035 SCT043 14/06 Q1019

Analysis and Investigation**NATS Safety Investigations**

Summary: Safety Investigations was notified by the UK Airprox Board of a retrospectively-reported Airprox incident involving the pilot of [the Discus], a glider operating outside controlled airspace to the south-west of Lasham. Subsequent investigation established the conflicting aircraft was [the

PC12 and the pilot had been] receiving a Traffic Service outside controlled airspace, from Farnborough Radar.

The pilot of [the PC12] reported onto the Farnborough LARS frequency at 1149:33 (all times UTC) and reported approaching Guildford climbing to 2000ft and requested a Traffic Service whilst routeing to the south of the Farnborough CTA. The pilot was informed they were identified by the Farnborough controller, with a Traffic Service established. [The pilot of the PC12] continued to track south-west remaining outside controlled airspace to the south of the Odiham MATZ before turning onto a north-westerly track. An intermittent primary-radar contact had been sporadically visible approximately 2NM south of Lasham, however, this disappeared from the Farnborough radar display at 1155:02, as the Farnborough controller negotiated a service with an unrelated pilot requesting a zone transit. That RT exchange was coincident with the primary contact reappearing at 1155:31.

At 1155:50, the RT exchange with [an uninvolved pilot] ended with the Farnborough controller immediately providing the pilot of [the PC12] with Traffic Information of; *“pop up traffic, twelve o’clock, range of a mile, no height or type, possible a glider.”* This was acknowledged by the pilot as *“[PC12 c/s], looking.”* (Figure 1).

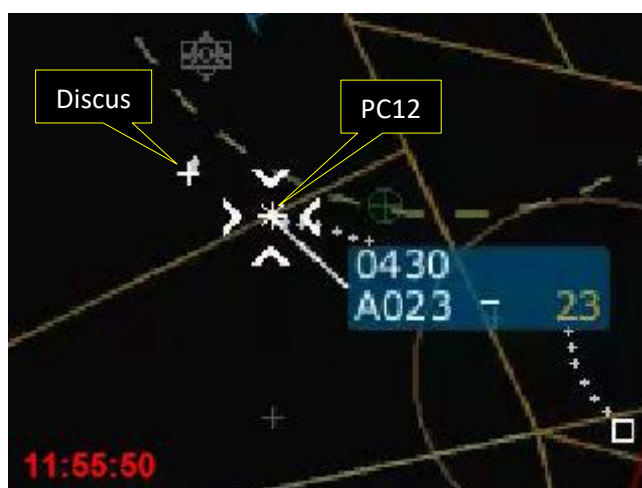


Figure 1 – Aircraft positions at 1155:50

The primary contact and [the PC12] appeared to laterally merge at 1156:10, which was considered to be the Closest Point of Approach with no vertical data available from the primary contact aircraft (Figure 2).

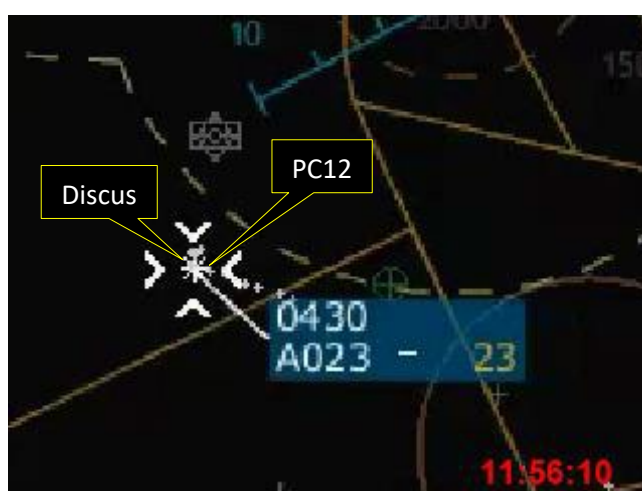


Figure 2 – Aircraft positions at 1156:10

The primary contact disappeared from radar after the two returns passed.

Review of multitrack radar displayed that [the pilot of the PC12] did not deviate from their track (primary contact not displayed on radar) (Figure 3).

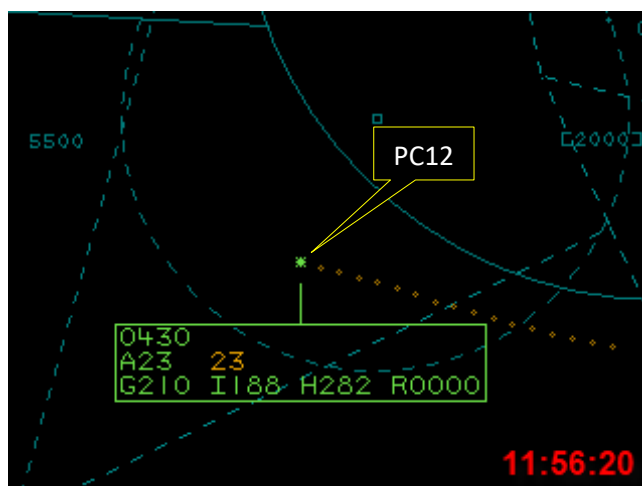


Figure 3 – 1156:20 (16sec after CPA)

Investigation: Information available to the investigation included: CA4114 from the Farnborough Radar controller, NATS4118 Initial Watch Management Investigation Report, UK Airprox Board Incident Ref: 2024250, radar and R/T recordings.

Safety Investigations was notified by the UK Airprox Board of a retrospectively-reported Airprox incident by the pilot of [the Discus], a glider operating outside Controlled Airspace to the south-west of Lasham. The PC12 pilot was outbound from [departure airfield], inbound to [destination airfield].

The Farnborough Radar function was operating in an Approach, Zone and LARS West combined configuration. The NATS4118 form stated that the traffic loading was 'medium with several LARS tracks on frequency and requesting services.'

A Traffic Service was established between the Farnborough controller and the pilot of [the PC12].

CAP774 UK FIS 3.1 stipulates that:

'A Traffic Service is a surveillance based ATS, where in addition to the provisions of a Basic Service, the controller provides specific surveillance derived traffic information to assist the pilot in avoiding other traffic. Controllers may provide headings and/or levels for the purposes of positioning and/or sequencing; however, the controller is not required to achieve deconfliction minima, and the pilot remains responsible for collision avoidance.'

CAP774 UK FIS 3.5 states:

'The controller shall pass traffic information on relevant traffic, and shall update the traffic information if it continues to constitute a definite hazard, or if requested by the pilot. However, high controller workload and RTF loading may reduce the ability of the controller to pass traffic information, and the timeliness of such information. Traffic is normally considered to be relevant when, in the judgement of the controller, the conflicting aircraft's observed flight profile indicates that it will pass within 3 NM and, where level information is available, 3,000 ft of the aircraft in receipt of the Traffic Service or its level-band if manoeuvring within a level block...'

Due to the intermittent nature of the primary contact, the Farnborough controller issued Traffic Information to the pilot of [the PC12] at the first available opportunity.

The pilot of [the Discus] reported to UKAB that they executed a "*sharp left turn*" as their method of avoiding action.

The pilot of [the PC12] did not report a conflict on the Farnborough frequency and, at the time of this report's completion, Safety Investigations had not been informed by UKAB of a report submitted from the pilot of [the PC12].

Causal Factors: The pilot of [the PC12] was receiving a Traffic Service from the Farnborough Radar controller. An intermittent primary track was visible as [the PC12] tracked westbound, which subsequently disappeared approximately 1NM to the south of Lasham. This aircraft was established by UKAB as [the Discus], a glider operating out of Lasham.

During transmissions with an unrelated aircraft, the primary contact reappeared on radar ahead of [the PC12]. The Farnborough controller provided Traffic Information at the first opportunity available, which was acknowledged by the pilot.

[The PC12] was observed on radar to laterally merge with the primary contact. The pilot did not report a conflict on frequency.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and the PC12 could be positively identified from Mode S data. The Discus was not observed on the radar replay, however, the pilot of the Discus kindly supplied GPS track data for their flight. The diagram was constructed and the separation at CPA determined by combining the data sources.

The Discus and PC12 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 converging then the PC12 pilot was required to give way to the Discus.²

Comments

AOPA

As this Airprox demonstrates, a Traffic Service is very appropriate and provided another level of mid-air collision avoidance. Without the PC12 pilot's engagement, certain aspects of this Airprox will have to be assumed, which is not ideal. For instance, had the PC12 pilot visually acquired the Discus and, if so, had they taken what they had thought was appropriate action?

Until the Department for Transport decides on a common standard of electronic conspicuity, the EC barrier may not operate to the most optimal level.

BGA

Lasham airfield, 2NM north of the Airprox location, is home to one of the largest gliding clubs in the world, with more than 220 gliders based there. Areas of Farnborough Class D controlled airspace created immediately to the east in February 2020 oblige westbound traffic transiting in uncontrolled airspace to enter this area below 2500ft AMSL, rather than the 3500ft AMSL or 5500 ft AMSL Class G ceiling that existed previously. An increased frequency of Airprox involving gliders at low level near Lasham is the likely result.

The EC equipment fitted to almost all gliders (including this Discus) is designed to warn of impending conflicts with other similarly-equipped aircraft. This system mitigates the risk of Airprox with other gliders, but basic installations do not detect aircraft equipped only with transponders or ADSB-out (such as 'Mode S+'), as the PC12 was in this case. However, recent versions of this EC equipment can optionally include a 1090MHz receiver subsystem, and thereby warn of conflicts with transponder and ADSB-out-equipped aircraft. Updating glider EC hardware to add such a 1090MHz

¹ (UK) SERA.3205 Proximity.

² (UK) SERA.3210 Right-of-way (c)(2) Converging.

receiver subsystem would provide a useful additional safety barrier in airspace with a high density of transponder or ADSB-out equipped aircraft.

Summary

An Airprox was reported when a Discus and a PC12 flew into proximity 2NM south of Lasham at 1156Z on Sunday 29th September 2024. The Discus pilot was operating under VFR in VMC listening-out on the Lasham Gliders frequency. The PC12 pilot was operating under VFR in VMC in receipt of a Traffic Service from Farnborough LARS West.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of a report from the pilot of the Discus, GPS track data from the flight of the Discus, radar photographs/video recordings, a report from the air traffic controller involved and a report from the appropriate operating authority. 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 Discus. Members noted that they had been in a gentle descent, and had been flying a near-constant heading, when they had visually acquired the PC12. Members agreed that the EC device fitted to the Discus would not have been expected to have detected the PC12 (**CF5**) and that there had not been a common radio frequency in use between the pilots. Consequently, members agreed that the pilot of the Discus had not had situational awareness of the PC12 until it had been visually acquired (**CF4**). Members noted that the pilot of the Discus had turned left, sharply, to avoid the PC12 and agreed that that had indicated that the avoiding action had been somewhat urgent. Members therefore agreed that the PC12 had been sighted late (**CF6**).

Members next considered the actions of the pilot of the PC12 and were disappointed that they had elected to not participate in the Airprox process. To not have done so had hindered their analysis of some of the pertinent flight safety aspects of the encounter. Nevertheless, it was clear to members that the pilot of the PC12 had been in receipt of a Traffic Service from the Farnborough LARS West controller. Members noted that Traffic Information had been passed to the pilot of the PC12 on "*pop up traffic, twelve o'clock, range of a mile, no height or type, possibly a glider*". This had been acknowledged by the PC12 pilot as "*looking*". Members lamented that, due to the lack of a report from the pilot of the PC12, it was not known whether any EC equipment fitted to the PC12 had provided an alert to the presence of the Discus, or if it had been sighted, or if the pilot of the PC12 had attempted to effect an avoiding manoeuvre. Notwithstanding, members agreed that, given that the Traffic Information had been passed when the separation had been approximately 1NM, the situational awareness gleaned from the information had been late (**CF4**).

Members turned their attention to the actions of the Farnborough LARS West controller and noted that an intermittent primary-only radar contact had been sporadically visible approximately 2NM south of Lasham. However, it was noted that the contact had not persisted and the controller had been engaged with another pilot when it had reappeared on their display. Members agreed that the Farnborough LARS West controller had therefore gleaned late situational awareness of the Discus (**CF3**) given that it had been approximately 1NM ahead of the PC12 at that time. Consequently, members agreed that the conflict had been detected late (**CF2**) and that Traffic Information had been passed late (**CF1**). However, members considered that the controller had passed the Traffic Information as soon as they had been able to have done so.

Members turned to the determination of the risk of collision and summarised their discussion. It was noted that the Farnborough LARS West controller had passed Traffic Information to the pilot of the PC12 but it was not clear to members whether the pilot of the PC12 had visually acquired the Discus. The pilot of the Discus had not had situational awareness of the PC12 until it had been visually acquired but avoiding action had been taken at the last minute. Members agreed that safety had not been assured and, in consideration of the separation at CPA, concluded that there had been a risk of collision (**CF7**). The Board assigned Risk Category B to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**Contributory Factors:**

	2024250			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Ground Elements				
• Situational Awareness and Action				
1	Human Factors	• ANS Traffic Information Provision	Provision of ANS traffic information	TI not provided, inaccurate, inadequate, or late
2	Human Factors	• Conflict Detection - Detected Late	An event involving the late detection of a conflict between aircraft	
3	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, no or inaccurate Situational Awareness
Flight Elements				
• Situational Awareness of the Conflicting Aircraft and Action				
4	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				
5	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				
6	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				
7	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 Assessment³

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

Ground Elements:

Situational Awareness of the Confliction and Action were assessed as **partially effective** because the Farnborough LARS West controller had acquired situational awareness of the presence of the Discus late.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the pilot of the Discus had not had situational awareness of the presence of the PC12.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the electronic conspicuity equipment fitted to the Discus would not have been expected to have detected the presence of the PC12.

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

See and Avoid were assessed as **partially effective** because the pilot of the Discus had visually acquired the PC12 late.

Airprox Barrier Assessment: 2024250				Outside Controlled Airspace					
		Barrier	Provision	Application	Effectiveness				
					Barrier Weighting				
					0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance	✓	✓						
	Manning & Equipment	✓	✓						
	Situational Awareness of the Conflicition & Action	!	!						
	Electronic Warning System Operation and Compliance	⦿	⦿						
Flight Element	Regulations, Processes, Procedures and Compliance	✓	✓						
	Tactical Planning and Execution	✓	✓						
	Situational Awareness of the Conflicting Aircraft & Action	✗	✓						
	Electronic Warning System Operation and Compliance	✗	✓						
	See & Avoid	!	!						
Key:		Full	Partial	None	Not Present/Not Assessable		Not Used		
Provision		✓	!	✗	⦿				
Application		✓	!	✗	⦿		⦿		
Effectiveness		■	■	■	■		□		