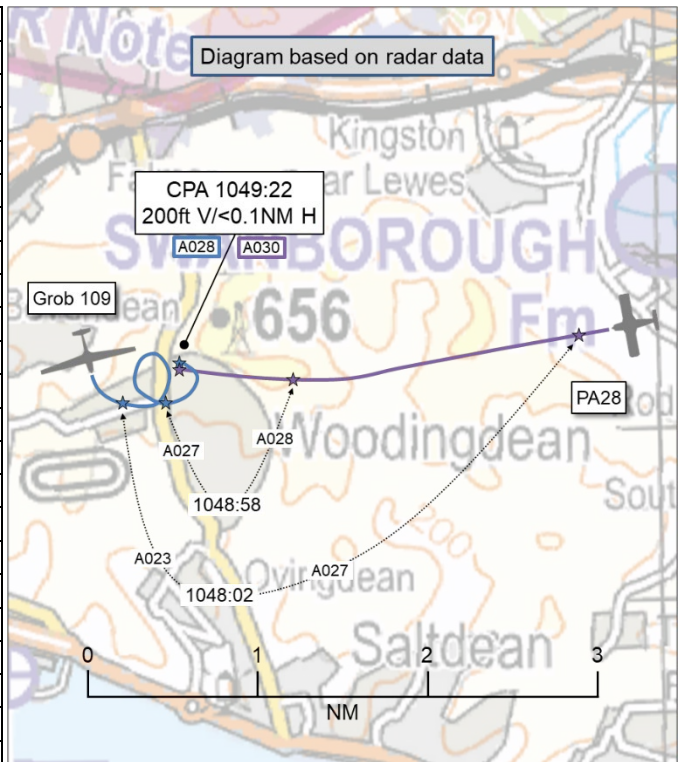


AIRPROX REPORT No 2024115

Date: 09 Jun 2024 Time: 1049Z Position: 5050N 00004W Location: 3NM E Brighton and Hove

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Grob 109	PA28
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Listening Out	Basic
Provider	Gliding frequency	F'borough LARS E
Altitude/FL	2800ft	3000ft
Transponder	A, C, S	A, C, S
Reported		
Colours	White	Blue, white
Lighting	Strobes	Strobes, beacon
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2000ft	2500ft
Altimeter	QFE (1014hPa)	QNH (1013hPa)
Heading	"circling"	260°
Speed	60kt	100kt
ACAS/TAS	PowerFLARM	Not fitted
Alert	None	None
Separation at CPA		
Reported	50ft V/50ft H	1000ft V/0.5NM H
Recorded	200ft V/<0.1NM H	



THE GROB 109 PILOT reports that they were flying along the south coast. It was a thermic day and, as [both pilots onboard] were glider pilots, they decided to throttle-back and use the energy in the sky. It was a busy sky with lots of gliders flying out of Lasham and they were both maintaining a good lookout, identifying other aircraft and calling them out to each other to make sure they had both seen them. They had the radio set to a gliding frequency to monitor the high levels of gliding activity in the area.

Just north-east of Brighton, in Class G airspace, they flew under a cumulus cell which was particularly active and decided to thermal to the left. They had made three turns to the left at about 60kts and were about 2000ft above the ground, climbing under the cumulus, when the incident occurred. At 1049, whilst they were banked to the left (and, they believe, facing south) a PA28 appeared over their tail and up to the right. They continued to turn to the left to increase separation. It was unclear if the PA28 pilot had seen them. The PA28 was tracking from east-to-west and, they imagine, had been following the coast. They watched it head west and inland to the north of Brighton.

There was less than 50ft of separation, both horizontally and vertically. They had [an EC device] operating (but no alerts were received) and had their transponder set to 7000. They had ADS-B-out but not ADS-B-in. They also had SkyDemon running for navigational purposes.

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

THE PA28 PILOT reports that they were on Farnborough LARS E frequency and were listening-out for traffic but they hadn't heard about this one [the Grob 109]. As soon as they saw it, they climbed to 3000ft to avoid it and told Farnborough. [The Grob 109] was descending.

[They commented that the Grob 109] was in front of them, turning to a rough heading of 040° and then 350°, and that it looked like a glider.

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

THE FARNBOROUGH LARS CONTROLLER reports that, at the time of the event, they were working as LARS N and E controller. The pilot [of the Grob 109] filed an Airprox after the event but they do not have any recollection of it and cannot provide any details.

Factual Background

The weather at Shoreham was recorded as follows:

METAR EGKA 091050Z 33010KT 300V360 9999 SCT049 18/07 Q1013

Analysis and Investigation

Farnborough Unit Investigation

The pilot [of the PA28] contacted the Farnborough LARS East frequency (123.255MHz) at 1030:44 (all times UTC) and requested a Basic Service. The Farnborough LARS East controller (LF LARS) issued the pilot with squawk 1733, London QNH 1013hPa and a Basic Service.

The Grob 109 (two-seat self-launching glider) was observed on radar approximately 8NM east of Shoreham, flying in an anti-clockwise circular direction at 2600ft.

At 1048:49, the pilot of [the PA28] reported they were going to climb due to traffic in front of them (see Figure 1). The LF LARS controller acknowledged the call and informed the pilot it was “*very busy between you and Shoreham, keep a good lookout*”. The pilot of the PA28] was observed to commence a climb to an altitude of 3100ft, above [the Grob 109], whose pilot was observed to climb to 2900ft whilst continuing to fly in an anti-clockwise circular motion.

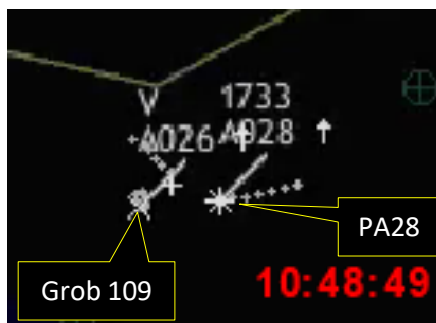


Figure 1 - Aircraft positions at 1048:49

The Closest Point of Approach occurred at 1049:26 and was recorded on the Multi-Track radar as 0.1NM and 100ft (see Figure 2).

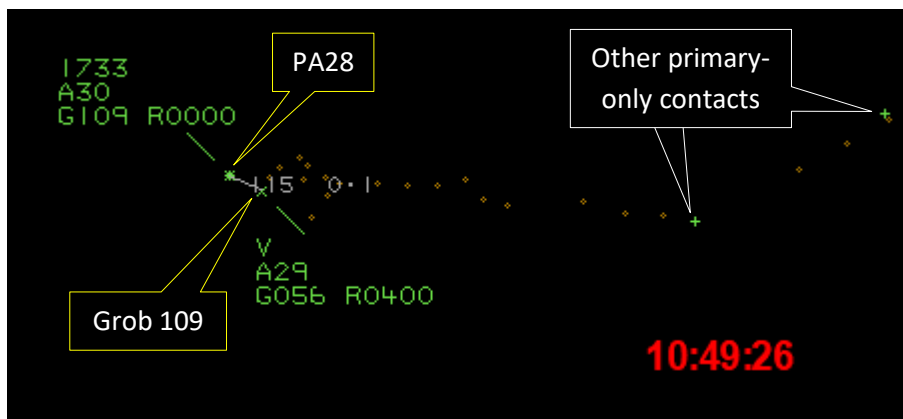


Figure 2 – Aircraft positions [4sec after] CPA

No further transmissions regarding the confliction were broadcast.

Information available to the investigation included; CA4114 from Farnborough LARS East controller, NATS4118 Initial Watch Management Investigation Report, radar and RT recordings and [the PA28 pilot's] Airprox reporting form [de-identified].

The Farnborough LARS North and East function was being operated in a banded configuration. The NATS4118 described the traffic level as 'medium' and analysis of RT correlated with this.

The LF LARS controller reported in the CA4114 they had no recollection of the event and the NATS4118 confirmed that neither [the pilot of the Grob 109], nor the [pilots of the other] observed primary-only contacts (see Figure 2) were in receipt of a service from Farnborough.

Safety Investigations was informed by the UK Airprox Board (UKAB) on 13th June 2024 that the event had subsequently been reported as an Airprox.

The pilot of [the PA28] described in their Airprox Reporting Form that the other aircraft "*looked like a glider, 300ft slightly below and in front of me turning on to a rough heading of 040 then 350?*". Their pilot narrative of the event stated, "*I was on Farnborough radar E and was listening out for any traffic but didn't hear about this one, as soon as I saw it, I climbed to 3000ft to avoid it, however it was descending*".

CAP774 UK Flight Information Services Ch 2.1 stated,

'Basic Service relies on the pilot avoiding other traffic, unaided by controllers/ FISOs. It is essential that a pilot receiving this ATS remains alert to the fact that, unlike a Traffic Service and a Deconfliction Service, the provider of a Basic Service is not required to monitor the flight.'

[The pilot of the PA28] on a Basic Service, and [the pilot of the Grob 109], not in receipt of an ATC service on a VFR conspicuity squawk, were operating outside controlled airspace and came into potential confliction in the vicinity of Brighton marina. The pilot of [the PA28] subsequently reported an Airprox.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and both aircraft could be positively identified from Mode S data (see Figure 3). The diagram was constructed and the separation at CPA determined from the radar data.

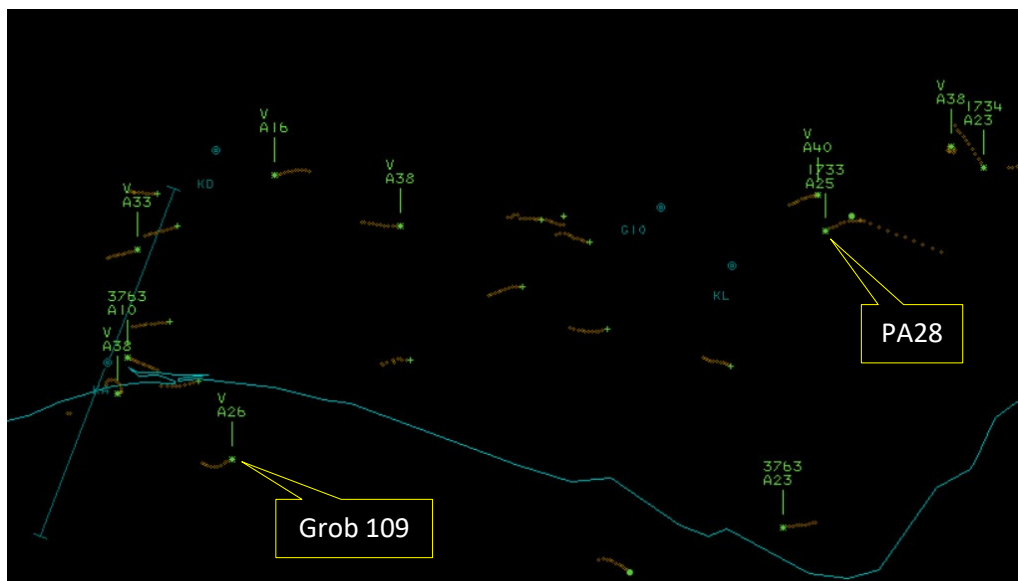


Figure 3 – Traffic situation at 1042:24

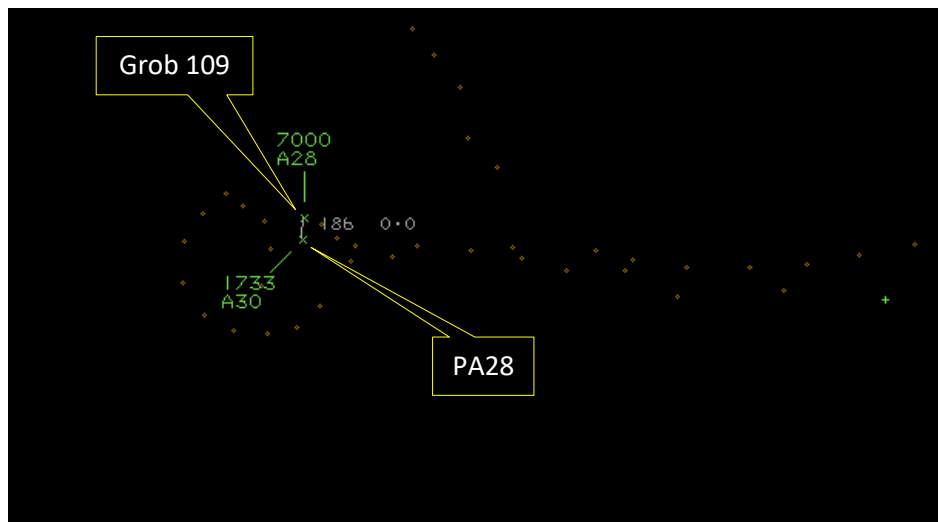


Figure 4 – CPA at 1049:22

The Grob 109 and PA28 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

Comments

AOPA

Whilst operating in Class G airspace, it is advised to obtain the best possible Air Traffic (radar) Service to assist in highlighting other airspace users. In this case, both aircraft had transponders which the controller would have been able to see and point out. It is also advised to report Airprox on the frequency in use; this would assist with tracing the other aircraft.

BGA

While average climb rates of 200-500ft/min achieved by thermalling gliders in the UK may seem modest compared to that of a single-engined piston aircraft at sea level, thermals may be just as strong at 3000ft AMSL. At these altitudes the maximum climb rate of a normally-aspirated SEP aircraft will be noticeably reduced, so that flying directly towards a thermalling glider, aiming to out-climb it, may not be an effective way of achieving safe separation. Because thermals can contain bubbles of faster rising air, a thermalling glider's climb rate may also vary unpredictably, and may briefly peak as high as 1000ft/min under some circumstances.

In the moments before CPA the motor glider was completing about one 360° turn per minute, during which time an aircraft approaching at 100kt would cover 1.7NM. The pilot of a thermalling glider must look for aircraft approaching from every direction; although continuous turning facilitates 360° lookout, it also leaves the pilot unsighted in any specific direction for about half the time.

The difficulties of sighting another aircraft approaching head-on with no relative motion are well-known. Many pilots now opt to permanently switch on forward-pointing high-intensity landing lights, even in full daylight, to aid visual conspicuity in this direction.

Summary:

An Airprox was reported when a Grob 109 and a PA28 flew into proximity 3NM east of Brighton and Hove at 1049Z on Sunday 9th June 2024. Both pilots were operating under VFR in VMC, the Grob 109 pilot listening out on a gliding competition frequency and the PA28 pilot in receipt of a Basic Service from Farnborough LARS East.

¹ (UK) SERA.3205 Proximity.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, 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 discussed the actions of the pilot of the Grob 109 and members noted that they had tuned their radio to a gliding frequency. Noting that the pilot had been in possession of a FRTOL, members agreed that it would have been prudent to have tuned their radio to the Farnborough LARS frequency and to have requested an ATS (**CF2**). It was noted that the Grob 109 had been fitted with an EC device, but members agreed that it would not have been expected to have detected the presence of the PA28 (**CF4**) given that the transponder fitted to the PA28 had not had an ADS-B-out signal. Consequently, it was concluded by members that the pilot of the Grob 109 had not had situational awareness of the PA28 (**CF3**) and agreed that it had not been visually acquired until moments before CPA. Nevertheless, members agreed that the pilot of the Grob 109 had taken avoiding action by maintaining their turn, and noted that they had also continued to climb.

Turning their attention to the actions of the pilot of the PA28, members noted that they had been in receipt of a Basic Service from the Farnborough LARS controller. Members agreed that, under the terms of a Basic Service, the PA28 pilot would not have expected to have been passed any Traffic Information pertinent to their flight. As such, members agreed that it may have been prudent to have requested a higher level of service (**CF2**). Members agreed that a surveillance-based service may have provided the pilot with awareness of the traffic situation. Furthermore, it was noted that the PA28 had not been fitted with an additional EC device which may also have provided useful information. However, members agreed that, in this particular case, the pilot of the PA28 had not had situational awareness of the Grob 109 until it had been visually acquired (**CF3**).

Members next considered the avoiding action taken by the pilot of the PA28 and pondered the likelihood that a PA28 could have out-climbed a thermalling Grob 109. By analysing data from the radar replay, members considered the rates of climb of each aircraft in the moments leading to CPA. It was assessed that the Grob 109 had had a higher rate of climb than the PA28 in 13 of the 16 radar sweeps before CPA. The pilot of the PA28 had levelled their aircraft at approximately 3000ft and the Grob 109 had not descended (as the PA28 pilot had perceived) but had continued to climb. Members surmised that the Grob 109 had probably been momentarily obscured from the view of the PA28 pilot when it had been below the nose of the PA28, and that the pilot may not have appreciated that the separation had actually reduced further as they had passed above the Grob 109. Members agreed that, although the Grob 109 had been visually acquired in time to have taken effective avoiding action, the pilot of the PA28 had not taken sufficient action to have avoided having flown into conflict (**CF5**).

Turning their attention to the actions of the Farnborough LARS controller, members agreed that they had not been required to have monitored the flight of the PA28 under the terms of a Basic Service (**CF1**). Nevertheless, one member commented that, if the Farnborough LARS controller had had capacity to have done so, timely Traffic Information passed to the pilot of the PA28 on the Grob 109 (fitted with a transponder) may have resulted in earlier, and possibly more effective, avoiding action having been taken.

Concluding their discussion, members summarised their thoughts. It was agreed that neither pilot had had situational awareness of the other aircraft before it had been visually acquired. It was further agreed that the pilot of the PA28 had not correctly perceived the vertical motion of the Grob 109 and had taken avoiding action that had not reduced the separation between the aircraft. Members agreed that the safety of the aircraft had not been assured and that there had been a risk of collision (**CF6**). The Board assigned Risk Category B to this event.

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

2024115				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Ground Elements				
• Situational Awareness and Action				
1	Contextual	• ANS Flight Information Provision	Provision of ANS flight information	The ATCO/FISO was not required to monitor the flight under a Basic Service
Flight Elements				
• Tactical Planning and Execution				
2	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
• 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	Contextual	• Loss of Separation	An event involving a loss of separation between aircraft	Pilot flew into conflict
• 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 Assessment²

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 **not used** because the Farnborough LARS controller had not been required to have monitored the flight under the terms of a Basic Service.

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because it would have been prudent for the pilot of the Grob 109 to have requested an ATS from the Farnborough LARS controller.

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 until visually acquired.

² The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the EC device fitted to the Grob 109 would not have been expected to have detected the presence of the PA28.

See and Avoid were assessed as **partially effective** because, despite having visually acquired the Grob 109 at distance, the pilot of the PA28 had not taken sufficient action to have avoided having flown into conflict.

Airprox Barrier Assessment: 2024115		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 Confliction & 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							