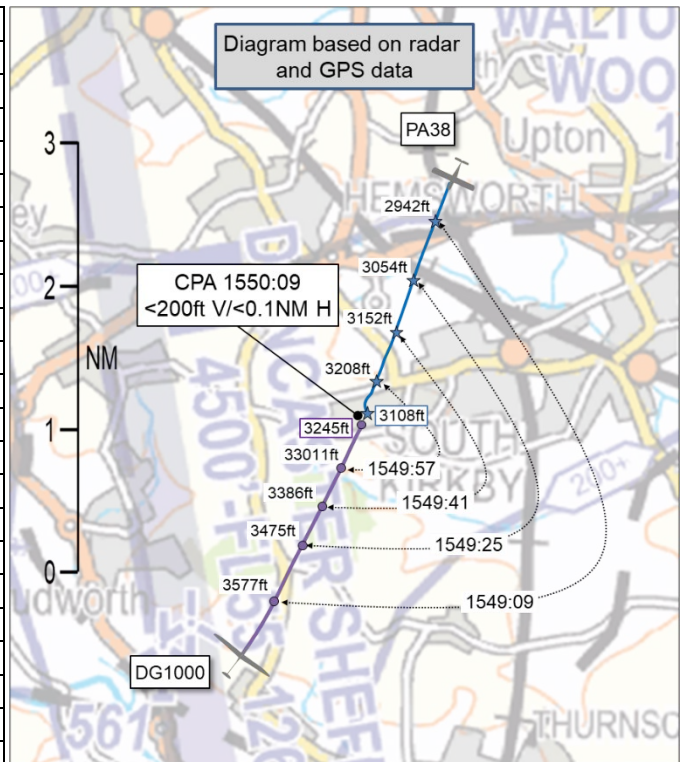


AIRPROX REPORT No 2024220

Date: 29 Jul 2024 Time: 1550Z Position: 5335N 00120W Location: South Kirkby

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA38	DG1000
Operator	Civ FW	Civ Gld
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	None
Provider	London Information	N/A
Altitude/FL	3108ft	3245ft
Transponder	A, C ¹	Not fitted
Reported		
Colours	Blue/White	White
Lighting	Nav	none
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	3000ft	NK
Altimeter	QNH	NK
Heading	203°	NK
Speed	90kt	NK
ACAS/TAS	Not fitted	FLARM
Alert	N/A	None
Separation at CPA		
Reported	100ft V/0.25NM H	Not seen
Recorded	<200ft V/<0.1NM H	



THE PA38 PILOT reports they were on an hours building trip. It was a fair weather day but quite turbulent due to heat and fair winds. They were in the cruise at approximately 3000ft heading south-southwest. The sun was bright and visible in the canopy, approaching late afternoon, also a few fair weather cumulus [clouds] were present, which likely disguised the glider colour. The lookout was being maintained as usual; the glider was sighted when very close and quick action was taken to avoid. The position of the other aircraft as seen through the canopy was close to the sun position, as it was above and off to the right, heading directly towards their aircraft, in a slight left bank. They elected to turn left and descend, as a right turn would have put them on crossing paths. The glider passed over their right shoulder turning away. They could not see it in the rear window afterwards. They did not think that the glider pilot spotted them as [the glider] did not turn quickly. The route had been planned to avoid NOTAM'd gliding activity over the peaks, but this Airprox was not close to any of this; of course, not that that means it will not happen. They had also elected to speak to London Information early as they would be continuing with them for a good portion of the trip, and to reduce workload slightly in order to maintain control in turbulent conditions. Although, in hindsight, [they opined that they] should have spoken with Leeds Radar for Traffic Information.

The pilot further described their avoidance manoeuvre as a sharp left turn and descent.

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

THE DG1000 PILOT reports that, from their flight recorder, around 1550 they were heading northeast towards South Elmsall (West Yorkshire) at 3200ft. At 1551 they started thermalling overhead South Elmsall. At 1556 they left the thermal and continued on a northeasterly heading. Now, seven weeks later, they had no memory of having seen another aircraft at that part of their flight.

¹ The pilot reported as squawking Mode S but this was not detected on this flight.

THE LONDON INFORMATION FISO reports that the PA38 pilot had not reported an Airprox on frequency.

Factual Background

The weather at Leeds Bradford was recorded as follows:

METAR EGNM 291550Z 22008KT 180V250 CAVOK 25/11 Q1018

Analysis and Investigation

NATS Safety Investigations

Information available to the investigation included, CA4114 from the London Information FISO (LFISO) (NATS Ref No: 211179) and a [redacted] Airprox report from the pilot of [the PA38].

The pilot contacted the London Flight Information (LFIS) frequency, requesting a Basic Service, at 1541:30 and reported their position as approximately 5NM to the west of Sherburn-in-Elmet at an altitude 2700ft. A Basic Service was established.

Node Radar displayed [the PA38] continue on their established track at 2600ft before climbing to 2800ft as the aircraft approached a primary contact on an opposite direction track 1NM ahead. Although the primary contact was intermittent and did not consistently display the unknown return at the projected closest point of approach, it was judged that the two aircraft potentially crossed with zero lateral distance (Figure 1) at 1550:09.



Figure 1 – Time 1550:05 last radar contact with another aircraft prior to CPA.

Radar displayed the pilot of [the PA38] turned left approximately 20° with an immediate descent of 200ft as a potential avoidance manoeuvre. The pilot of [the PA38] did not report the conflict on the LFIS frequency. The Airprox report from the pilot of [the PA38 pilot] stated the other aircraft was a glider on an opposite direction track in approximately their 1 o'clock. The report further stated the vertical distance was approximately 50-100ft above and was assessed as a 'high' risk of collision. The report correlated with the radar data, stating the form of avoiding action taken was a 'sharp left turn and descent (left turn taken to avoid crossing paths due to relative bearings)'.

NATS Safety Investigations did not establish the identity of the other aircraft.

In conclusion, the pilot of [the PA38] submitted an Airprox report regarding a confliction with a glider whilst receiving a Basic Service from London Information. The conflict was not reported on the

frequency. Closest Point of Approach occurred at 1550:09 and was assessed on Multi-Track Radar as 0.0NM. The vertical distance could not be established.

UKAB Secretariat

An analysis was made of the NATS radar replay and the PA38 was tracking approximately south, with the DG1000 heading approximately north. The primary track was, at times, intermittent. The last positive radar sweep was at 1549:57 (Figure 2), and the reappearance of the primary returns after CPA.

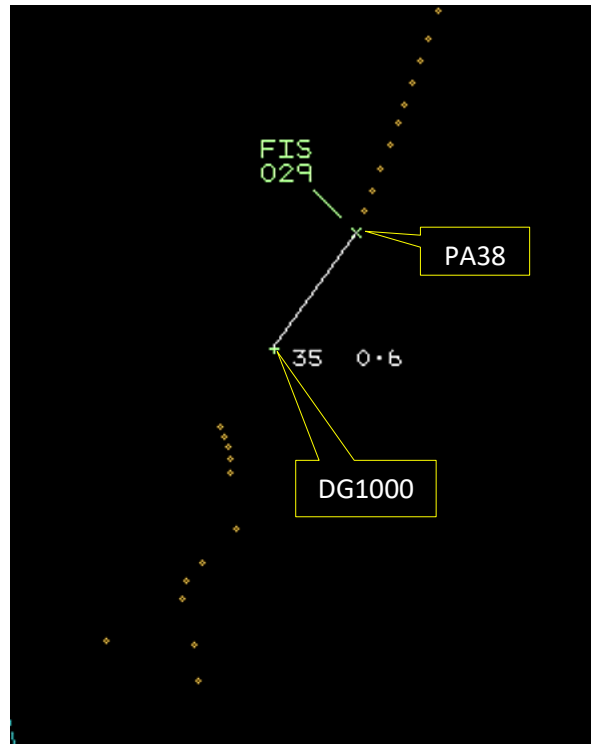


Figure 2 – Time 1549:57 last primary return prior to CPA

Both aircraft were traced without use of Mode S data and both pilots provided GPS data which was analysed and confirmed as coincident with the radar data (Figure 3).

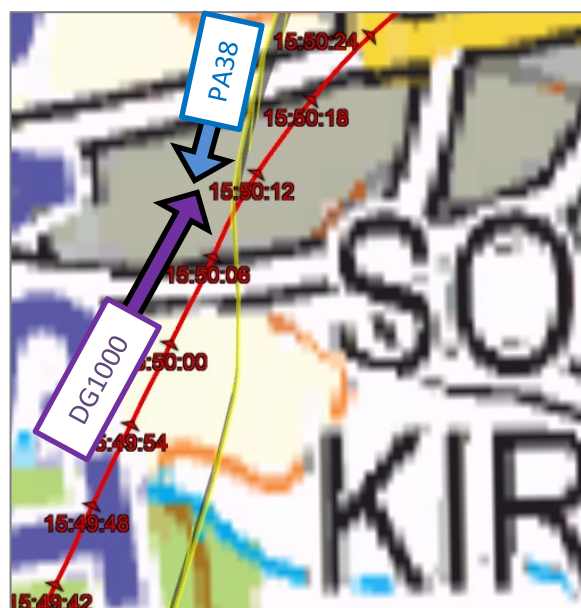


Figure 3 – Aircraft flight logs

CPA was at 1550:09 with separation less than 0.1NM horizontally, and less than 200ft vertically.

The PA38 and DG1000 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.² If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right.³

Comments

AOPA

It is always difficult to spot another aircraft when head on, this is where a surveillance-based Traffic Service can assist several miles before the closest point of approach is reached. Similarly if both aircraft are fitted with compatible electronic conspicuity [equipment] this could alert before the closest point of approach.

BGA

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 PA38 and a DG1000 flew into proximity at South Kirkby at 1550Z on Monday 29th July 2024. The PA38 pilot was operating under VFR in VMC in receipt of a Basic Service from London Information and the DG1000 pilot was operating under VFR in VMC without a FIS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports and GPS data files from both pilots, radar photographs/video recordings, a report from the FISO 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 looked at the actions of the PA38 pilot, noted that they had been in receipt of a Basic Service and pondered on the pilot's own reflection regarding the use of Leeds for Traffic Information. Members agreed that it would certainly have been prudent to have had a surveillance-based service, being mindful that Leeds is not a LARS provider, while controller members also acknowledged that although there had been intermittent radar returns on the NATS radar, any radar service from Leeds would likely have been limited to SSR equipped aircraft only, due to the airprox location being in an area of known increased primary radar clutter. Members then discussed the added benefits of using electronic conspicuity equipment, particularly under circumstances where other facilities may not be available. The Board agreed that, on this occasion, the air traffic service selected had not been a factor because the DG1000 had not been transponding and the likelihood of it being detected by radar had thus been reduced. Therefore members considered that without the assistance from ATC being available and no additional electronic conspicuity equipment fitted, the PA38 pilot had had no situational awareness of the presence or position of the DG1000 (**CF2**). The Board also agreed that, on sighting the glider, the PA38 pilot had been concerned by the proximity of the of the DG1000 (**CF5**), inasmuch as they had executed a 'sharp left turn and descent' to avoid it. Members further noted that the pilot had not reported the Airprox on frequency and wanted to reiterate the importance of doing so for the benefit of post-incident recording and investigation.

Turning their attention to the actions of the DG1000 pilot, the Board discussed the relevance of the late notification⁴ of the request for a report from the pilot, which they expected may have been a speedier process had the Airprox been announced on the frequency in use at the time. One member considered,

² (UK) SERA.3205 Proximity..

³ (UK) SERA.3210 Right-of-way (c)(1) Approaching head-on..

⁴ UKAB Secretariat note: The Airprox was reported to UKAB on 22 Aug 24; after significant tracing effort, the DG1000 pilot was identified on 18 Sep 24 and requested to provide a report. They did so on 21 Sep 24.

as the pilot had not remembered the event, they had probably seen the PA38 and not perceived the event in the same way as the PA38 pilot, because glider pilots were likely more used to being in close proximity to other aircraft than pilots of motorised aircraft. However, the majority of members agreed that the DG1000 pilot had not sighted the PA38 (**CF4**). Some members considered that, as the glider pilot had held a FRTOL, they could have made use of it and called London Information to make others aware of their presence, although the limitations for glider pilots of doing so were well appreciated. Turning to the matter of electronic conspicuity equipment, the Board agreed that it had been unfortunate that the equipment carried by the DG1000 had not been compatible with the transponder emissions from the PA38 (**CF3**). The Board agreed, therefore, that the DG1000 pilot had had no situational awareness of the presence or position of the PA38 (**CF2**).

On reviewing the actions of the London Information FISO, the Board agreed that the FISO had been unable to provide information on the DG1000 to the PA38 pilot as the glider had not been known to the FISO, and that they had not been required to monitor the flight under a Basic Service in any case (**CF1**).

In concluding their discussion and assessing a Risk Category, members agreed that the PA38 pilot had reacted appropriately in manoeuvring to avoid the oncoming DG1000. Some members had considered that safety had been much reduced and that a risk of collision remained (Risk Category B), whilst others felt that, although safety had been degraded, the PA38 pilot had been able to take timely and effective avoiding action to prevent the DG1000 from coming into close proximity. The Chair put it to a vote and, by a majority of one, the latter view prevailed. Therefore, the event was assigned Risk Category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2024220				
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				
• Situational Awareness of the Conflicting Aircraft and Action				
2	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				
3	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				
4	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
5	Human Factors	• Perception of Visual Information	Events involving flight crew incorrectly perceiving a situation visually and then taking the wrong course of action or path of movement	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: C.

Safety Barrier Assessment⁵

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

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

Ground Elements:

Situational Awareness of the Confliction and Action were assessed as **not used** because the London Information FISO was not required to monitor the PA38 under the terms of a a Basic Service.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither the PA38 pilot nor the DG1000 pilot had situational awareness of the presence and position of the other pilot’s aircraft until sighted.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because DG1000’s electronic conspicuity equipment was unable to detect any emissions from the PA38’s transponder.

Airprox Barrier Assessment: 2024220		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	■	■	■	■	□			