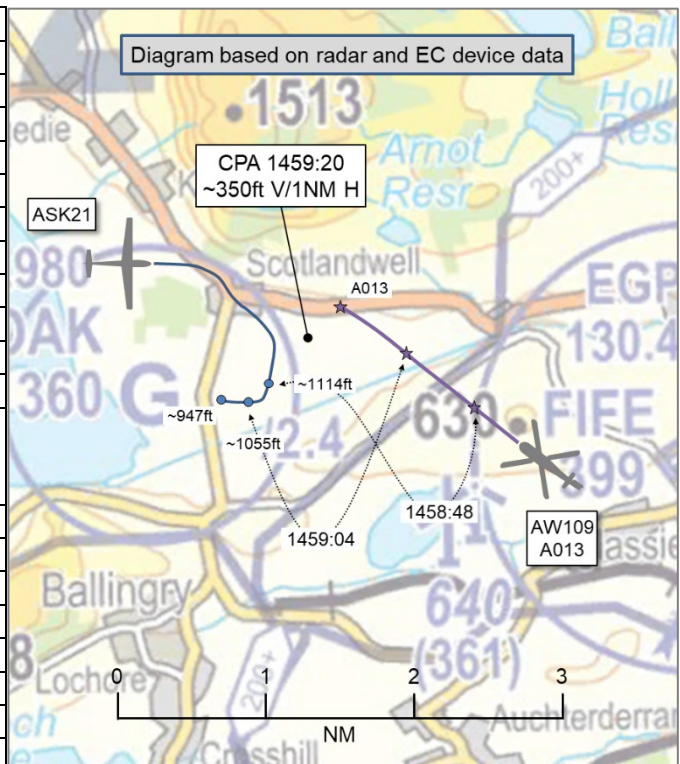


AIRPROX REPORT No 2023201

Date: 27 Aug 2023 Time: 1459Z Position: 5613N 00319W Location: 1NM ENE Portmoak

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	ASK21	AW109
Operator	Civ Gl'd	Civ Comm
Airspace	Scottish FIR	Scottish FIR
Class	G	G
Rules	VFR	VFR
Service	Listening Out	Listening Out
Provider	Portmoak Traffic	Portmoak Traffic
Altitude/FL	~947ft	1300ft
Transponder	Not fitted	A, C, S+
Reported		
Colours	White	Grey
Lighting	Front red strobe	Taxi, landing, position, strobes, anti-col
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	800ft	1034ft
Altimeter	AGL	QNH (1008hPa)
Heading	090°	294°
Speed	50kt	136kt
ACAS/TAS	FLARM	TAS
Alert	None	None
Separation at CPA		
Reported	0ft V/150m H	"a few hundred feet"
Recorded	~350ft V/1NM H	



THE ASK21 PILOT reports that, towards the end of a hill soaring flight to the north of the airfield, they were instructing a student on flying the circuit. They were about to reach the diagonal leg, and were accelerating and trimming. They were aware of unreadable radio calls. The student in the front seat stated that there was a helicopter in front of them. A moment later, [the ASK21 pilot] saw a black helicopter to the left of the student's head, between [the ASK21] and the hill, in a slight right-bank, rolling into a left-bank to an anti-parallel track to pass behind. Given the speed and track, there was no need to take any avoiding action at that point. They believe that the [helicopter] pilot had seen them and had taken avoiding action. There was a single-seat glider also joining the circuit behind [the ASK21], that they were aware of but could not see. [The pilot of that glider] later reported that they'd heard a radio call from the helicopter pilot stating that they intended to route to the south, and had focussed their scan in that area, then a later call saying that they would route to the north. At that point, [the pilot of the other glider visually] acquired the helicopter but later lost it against the background of the hill.

Portmoak is a busy gliding club and hill soaring site, with gliders soaring the hill all day. [The ASK21 pilot commented that] the wind was not particularly strong and, as a result and given the wind direction, the track chosen by the helicopter pilot had taken them through perhaps the busiest volume of airspace. [The ASK21 pilot opined that] had the [pilot of the AW109] routed to the south, as it seems they had originally planned, they would have been well clear of all traffic.

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

THE AW109 PILOT reports that they had departed [departure airfield] on a job to collect two passengers from [a hotel]. They had departed to the north and continued along the foot of the Lomond hills, remaining to the north of Portmoak gliding site at all times. Calls were made to Portmoak [Traffic] as they always do on 129.980MHz. Initially, they had no response from any pilot. Once they were north

abeam the gliding site, a radio call was made from a pilot reporting downwind to land. They could see aircraft in the circuit and also one other glider to the north soaring the ridge line. They continued to make blind calls and kept clear of all aircraft at all times. The aircraft soaring the ridge line was in their 2-3 o'clock above them. [The pilot of the AW109 and their co-pilot] were both visual, called visual with the aircraft on the Portmoak frequency and that they would remain at their altitude until clear.

[The pilot of the AW109 commented that they were not sure of the minimum horizontal separation as they believe the] glider wasn't fitted with, or had, working ADS-B, so wasn't showing on their TAS to give a range.

They continued to make blind calls, eventually changing to [an en-route frequency].

[The pilot of the AW109 opined that pilots from] Portmoak gliding site very rarely respond on the radio when calls are made, and that they would have thought all aircraft flying in and out of Portmoak would carry a handheld radio as a minimum when they have a published radio frequency. This would make aviation around that area a lot safer for everybody.

The pilot assessed the risk of collision as 'None'.

THE PORTMOAK LAUNCH CONTROL RADIO OPERATOR reports that they heard a radio call from the [pilot of the AW109] who reported that they were passing the airfield to the south. They then reported passing to the north, almost like they were initially unsure of the airfield's position. The Portmoak Launch Control Radio Operator didn't see the actual [reported] conflict.

Factual Background

The weather at Edinburgh was recorded as follows:

METAR EGPB 271450Z 26008KT 9999 FEW024 SCT032 17/11 Q1008

Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and the AW109 could be positively identified from Mode S data. A primary-only return, observed on radar to have been in the vicinity of Portmoak, was assessed not to have been the ASK21. The ASK21 was not observed on radar (see Figure 1).

The UKAB Secretariat obtained EC device data for the flight of the ASK21. It was by combining the different data sources that the diagram was constructed and the separation at CPA determined.

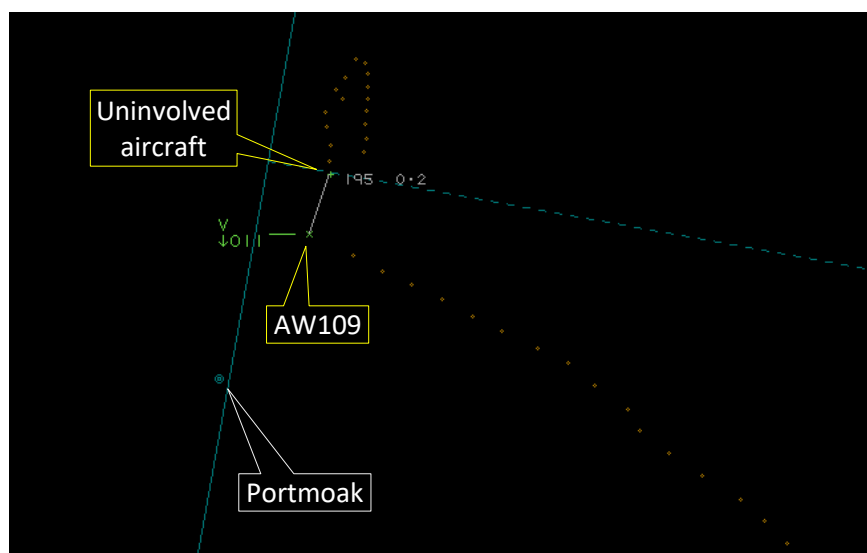


Figure 1 – Aircraft positions at 1459:52 [after the CPA between the ASK21 and AW109]

The ASK21 and AW109 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 An aircraft operated on or in the vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in operation.²

Comments

BGA

In westerly winds, the area immediately north of Portmoak airfield is heavily used by glider pilots transiting to and from ridge-soaring the westerly flank of Bishop Hill (1NM to the north), typically between 1000 and 2000ft AMSL. Under these conditions, gliders will predominantly fly a right-hand circuit on the north side of the airfield, as the ASK21 did here, commencing at about 1200ft AMSL. In contrast to the square circuit flown in powered aircraft, glider pilots typically fly a circuit with a "Diagonal leg" between the downwind and base legs - see figure 2.

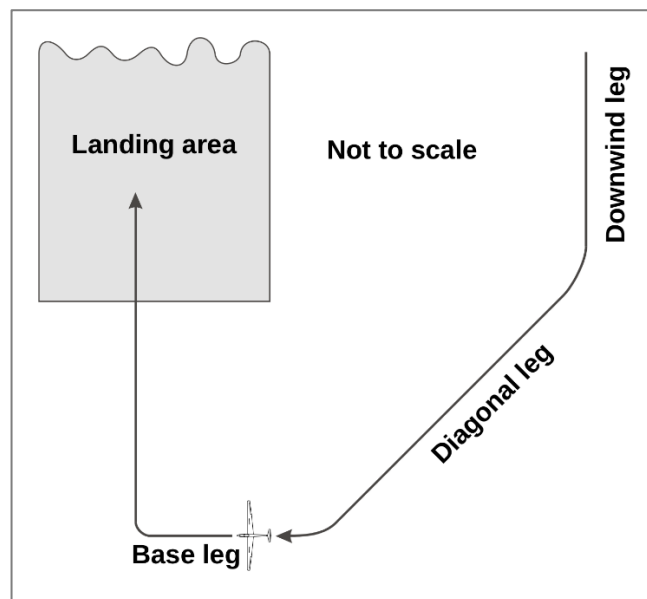


Figure 2 – Diagonal leg

The AW109 pilot is to be commended for using the notified Portmoak VHF channel to broadcast their intentions when in the area. However, reception of these radio calls cannot be guaranteed, and in any case, according to CAP 413 §4.182, "No reply to an unattended aerodrome report shall be transmitted".

Summary

An Airprox was reported when an ASK21 and an AW109 flew into proximity 1NM east-northeast of Portmoak at 1459Z on Sunday 27th August 2023. Both pilots were operating under VFR in VMC, listening out on the Portmoak Traffic frequency.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, EC device data, a report from the launch control operator 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.

¹ (UK) SERA.3205 Proximity.

² (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.

The Board first considered the actions of the pilot of the AW109. Noting that their operational task had taken them to airspace popular with glider pilots, members commended the AW109 pilot to have made several blind-calls on the Portmoak frequency to relay their intentions whilst they operated in the vicinity. Some members suggested that, as these transmissions were not received clearly by the pilot of the ASK21, and perhaps not fully received by other glider pilots in the area, the routing of the AW109 may have appeared to have been confusing from their perspective.

Members agreed that the pilot of the AW109 had avoided the established pattern of traffic at Portmoak. Notwithstanding, a member with particular knowledge of helicopter operations commented that it may have been more prudent for the pilot of the AW109 to have routed to the south and west of the gliding site, given that the westerly wind had favoured gliding along the ridge to the north of Portmoak. Nevertheless, members noted that the pilot of the ASK21 had visually acquired the AW109 in plenty of time to have considered the safest course of action and that there had not been a need to have taken avoiding action.

Concluding their discussion, it was agreed that, although neither pilot had had specific situational awareness of the presence of the other aircraft, both pilots had visually acquired the other in plenty of time. Members noted that there had been significant horizontal separation between the aircraft and agreed that no risk of collision had existed. As such, the Board assigned Risk Category E to this event and agreed on the following contributory factors:

- CF1.** The pilot of the ASK21 had not had situational awareness of the presence of the AW109. The pilot of the AW109 had generic situational awareness of the presence of gliders in the vicinity.
- CF2.** The EC equipment fitted to each aircraft would not have been expected to have detected the presence of the other aircraft.
- CF3.** The pilot of the ASK21 had been concerned by the proximity of the AW109.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2023201			
Factor	Description	ECCAIRS Amplification	UKAB Amplification
Flight Elements			
• Situational Awareness of the Conflicting Aircraft and Action			
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			
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			
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: E.

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:

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

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the pilot of the ASK21 had not had situational awareness of the presence of the AW109.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the EC equipment fitted to each aircraft would not have been expected to have detected the presence of the other aircraft.

Airprox Barrier Assessment: 2023201		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 Conflication & 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	■	■	■	■	□			