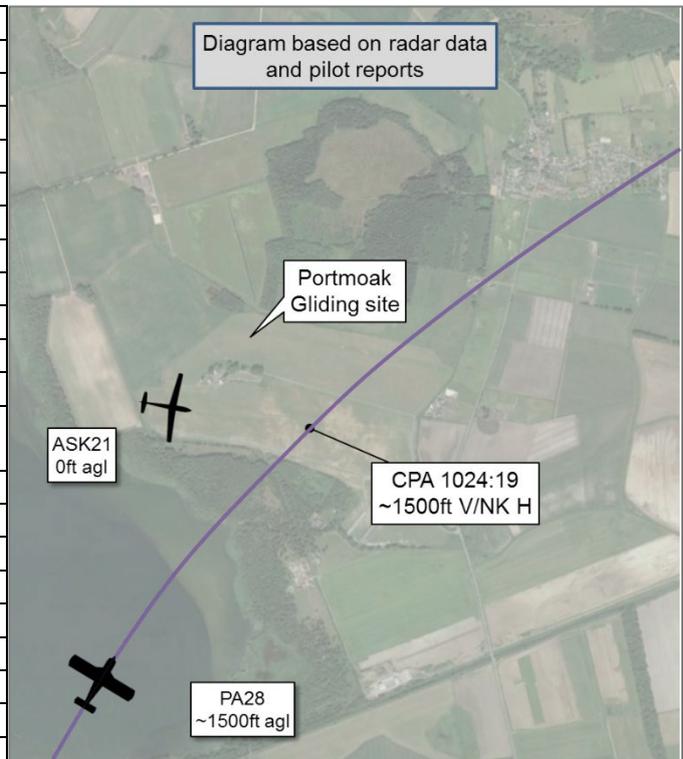


AIRPROX REPORT No 2019101

Date: 12 May 2019 Time: 1024Z Position: 5611N 00320W Location: Portmoak G/S – elev 360ft

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	ASK21	PA28
Operator	Civ Gld	Civ FW
Airspace	Scottish FIR	Scottish FIR
Class	G	G
Rules	VFR	VFR
Service	Listening Out	Basic
Provider	Portmoak	Edinburgh
Altitude/FL	360ft	1850ft
Transponder	Not fitted	A, C, S
Reported		
Colours	White, red	Blue, white
Lighting	Not fitted	Strobe, nav, landing
Conditions	VMC	VMC
Visibility	30km	>10km
Altitude/FL	0ft	2000ft
Altimeter	QFE (1005hPa)	NK (1035hPa)
Heading	100°	035°
Speed	0kt	100kt
ACAS/TAS	FLARM	Not fitted
Alert	Unknown	N/A
Separation		
Reported	900ft V/500m H	Not seen
Recorded	1500ft V/NK H	



THE ASK21 INSTRUCTOR reports that during a series of short training flights the student pilot was in control during the winch launch. At the moment the cable went taut a nearby pilot standing behind the glider called "stop the launch" so he and the student released the cable almost simultaneously. He made a "winch stop stop stop" call to the winch driver by radio. A few seconds later he saw an aircraft appear over the trees to the south which passed directly overhead the airfield and departed to the north.

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

THE PA28 PILOT reports that he had transited the Edinburgh zone from south to north, cleared at an altitude of up to 2000ft, and routing via the Kelty VRP. Subsequently he departed Edinburgh zone at the Kelty VRP and routed direct to Dundee. Edinburgh Radar informed him that both parachute dropping and gliding were active in the area. Conscious that he would require a transit of Leuchars MATZ, he changed frequency to Leuchars when approaching the vicinity of Loch Leven. He was unaware that Portmoak had an active air-ground frequency and so did not use it. As he approached Loch Leven from the south he did not identify Portmoak airfield but encouraged all the passengers to keep a good lookout for glider traffic, based on the previous advice of Edinburgh Radar. At about the southern edge of Loch Leven a single glider was seen in the 10 o'clock position, turning away. Although difficult to estimate distance, he guessed the glider came no closer than 2nm. No avoiding action was taken because no risk of collision was perceived. After talking to Leuchars he was given a MATZ penetration and continued en-route to Dundee for a VFR arrival. No further glider traffic was observed. The PA28 pilot noted the following factors relating to workload around the time of incident:

1. Unfamiliarity with area. His original intention was to route from the Edinburgh overhead via the Kirkcaldy VRP and he had briefed himself on active airfields along that track. As a result, he was less familiar with the area around Portmoak and Balado in the vicinity of Loch Leven.

2. Changing frequency from Edinburgh Radar to Leuchars Radar at time of overflying Portmoak.

3. Busy trying to identify and avoid Fife where parachute dropping was active. He considered the risk in entering an active parachute drop zone was greater than that of conflicting with glider traffic.

4. During the flight, SkyDemon was being used as the primary source of navigation data. When the planned track changed from routing via the Kirkcaldy VRP to via the Keltly VRP, he updated the intended track on the planning chart placing a waypoint on the Keltly VRP (see Figure 1). This had the effect of placing the magenta track line directly over Portmoak and obscuring it to some extent. The presence of the airfield was not as conspicuous on the chart as it would normally have been, nor was the air ground frequency of Portmoak. The fact that Portmoak was obscured on the chart was only noticed in retrospect after notification of the Airprox.

5. Lack of a TAS in his aircraft, e.g. FLARM.

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

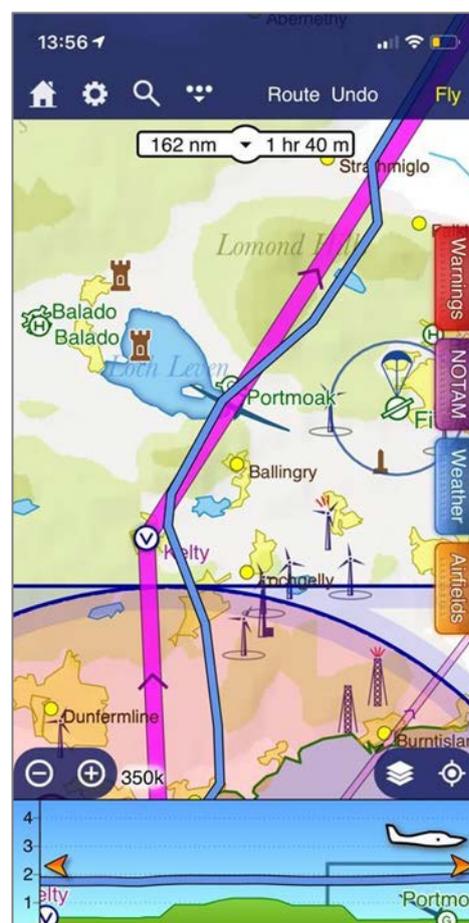


Figure 1 – SkyDemon re-routed track.
Planned track magenta, actual track blue.

THE EDINBURGH CONTROLLER did not file a report but the Edinburgh Tower Operations Manager discussed the situation with an Airprox Inspector and noted that the controller had recalled that radar contact on the PA28, operating under a Basic Service, was intermittent to the north of the Edinburgh CTR. He also recalled that there were no radar contacts in the vicinity of Portmoak gliding site. Traffic departing to the north of the Edinburgh CTR was not reminded of activity at local airfields, including Portmoak, unless such activity was detected on radar.

Factual Background

The weather at Edinburgh was recorded as follows:

METAR EGPB 121020Z 05006KT 010V080 CAVOK 11/06 Q1035=

Analysis and Investigation

UKAB Secretariat

The ASK21 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 hazard¹. 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 operation².

¹ SERA.3205 Proximity.

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

Comments

BGA

We commend the Portmoak ground crew for their vigilance in averting a potentially serious incident, and the PA28 pilot for his full and considered report, albeit assessing risk of collision against a different glider. This incident again highlights the risks in relying on electronic maps which may use filtered or unfamiliar symbology.

Summary

An Airprox was reported when a PA28 flew into proximity with an ASK21 that was beginning its winch-launch from Portmoak at 1024Z on Sunday 12th May 2019. Both pilots were operating under VFR in VMC, the PA28 pilot in receipt of a Basic Service from Edinburgh and the ASK21 pilot listening out on a Common Gliding Field Frequency.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots and radar photographs/video recordings. 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.

Members first commended the glider launch team and ASK21 crew for their actions in halting the winch launch; the Board agreed that the PA28 pilot's flight path overhead Portmoak gliding site was such that had the glider been launched, there would have been a very high risk of collision with either the glider or the winch cable. Even just a few seconds later, the glider would have been airborne in a steep winch-launch climb and its pilots would have been unlikely to have seen the PA28 in time to avoid.

Turning to the PA28 pilot's actions, members first acknowledged his full and frank report which had provided useful information and insights into the circumstances behind his flight. The Board noted that he had been in receipt of a Basic Service from Edinburgh and was given generic information of glider activity in the area (**CF2**, **CF6**) along with information that parachuting was active at Fife aerodrome. Acknowledging that under the terms of a Basic Service the Edinburgh controller was not required to monitor the PA28 (**CF1**), some members wondered whether, under the duty of care requirement, this was a sufficiently robust arrangement for traffic transiting towards Portmoak (a designated area of intense gliding activity³), Fife and Balado given the likely intensity of sports aviation activities in the area.

The PA28 pilot had transited the Edinburgh CTR and had planned to exit at a VRP to the northeast of the CTR (Kirkaldy) and thence towards Leuchars, thereby avoiding the Portmoak, Fife and Balado sites. However, he was re-routed by ATC and this resulted in him leaving the CTR to the north, at the Kelty VRP. He had updated his route on SkyDemon but had not assimilated the presence of the Portmoak gliding site on his updated route (**CF4**). It was noted that a reroute with a physical chart involves the pilot drawing the new track on the chart and thereby assimilating factors such as gliding sites which may affect the reroute. In contrast, a tablet-based application merely involves the insertion of a waypoint with the rest of the new route line often being automatically redrawn 'off screen'. Without the pilot panning across the new route line, assimilation of factor airspace and aviation sites was at risk of not readily being achieved (**CF3**). Members then discussed the depiction of gliding sites and areas of intense gliding activity on the SkyDemon display and were shown the various options within SkyDemon for the selective display of aviation information. It was agreed that the current SkyDemon depiction of gliding sites was sub-optimal in that their presence could easily be overlooked compared to the more obvious depiction on the VFR chart (**CF3**). It was also agreed that the facility to selectively turn off the

³ The Scottish Gliding Centre at Portmoak recorded 20679 movements from August 2018 to July 2019.

display of aerial sporting sites, such as gliding sites, was highly undesirable and which could be considered as being non-compliant with EASA regulation NCO.GEN.135(a)(10) (Documents, manuals and information to be carried),

‘current and suitable aeronautical charts for the route area of the proposed flight and all routes along which it is reasonable to expect that the flight may be diverted.’

AMC1 to NCO.GEN.135(a)(10) (Current and Suitable Aeronautical Charts) amplifies the requirement as follows:

‘(a) The aeronautical charts carried should contain data appropriate to the applicable air traffic regulations, rules of the air, flight altitudes, area/route and nature of the operation. Due consideration should be given to carriage of textual and graphic representations of:

(1) aeronautical data, including, as appropriate for the nature of the operation:

- ...
- (iv) prohibited, restricted and danger areas; and
- (v) sites of other relevant activities that may hazard the flight;
- ...

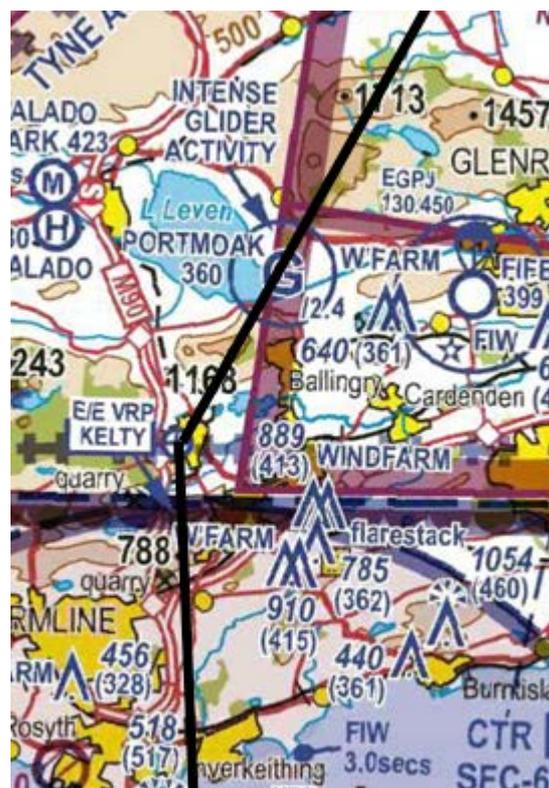


Figure 2 – VFR chart: PA28 pilot’s re-routed track in black

Members agreed that whilst the SkyDemon application could display gliding sites, it was a question of degree. It was noted that some other aviation mapping applications included an option for the display of a CAA VFR chart, which highlighted gliding sites by adding a larger blue circle around the site. As shown in Figure 2, which is the PA28 track as depicted on a VFR chart, the presence of Portmoak and its intense gliding activity warning are much more evident than in Figure 1, the SkyDemon version. After further discussion, the Board resolved to recommend that ‘SkyDemon review the selection and depiction of sites used for aerial sporting and recreational activities’.

The Board also wondered if the PA28 pilot had perhaps been more concerned about the notified parachuting at Fife and his perceived need to obtain early 2-way communication with Leuchars in order to transit the Leuchars MATZ. In the latter case, this had resulted in him changing frequency (**CF7**) at the point where a robust lookout for Portmoak traffic was most required. GA members commented that his priority at this point should have been in maintaining a robust lookout as opposed to a discretionary call that might be made to Leuchars. Ultimately, the PA28 pilot had seen a glider some way away but this was not the subject glider (which was on the ground). Members wondered whether the PA28 pilot had been robust enough in his attempts to visually acquire Portmoak airfield (and avoid its overflight below the maximum winch-launch altitude), in an expectation that any threats would already be airborne rather than about to launch (**CF9**).

In the event, the Board agreed that the PA28 pilot flew through the overhead of an active and promulgated gliding site below the maximum winch launch altitude (**CF5**) and did not see the glider that was about to launch (**CF10**). Notwithstanding, members agreed that the barrier of lookout had functioned on the ground and the launch had been stopped, thereby averting the risk of collision. Although the collision risk had been averted, members also agreed that normal safety standards had not pertained because the glider crew had been exposed to additional risk by the winch launch being stopped at such a late stage. Accordingly, the Board assessed the risk as Category C.

PART C: ASSESSMENT OF CAUSE AND RISK**Contributory Factors:**

2019101			
CF	Factor	Description	Amplification
Ground Elements			
• Situational Awareness and Action			
1	Contextual	• Situational Awareness and Sensory Events	Not required to monitor the aircraft under the agreed service
2	Contextual	• Situational Awareness and Sensory Events	Only generic, late or no Situational Awareness
Flight Elements			
• Tactical Planning and Execution			
3	Organisational	• Flight Planning Information Sources	Inadequate planning material
4	Human Factors	• Insufficient Decision/Plan	Inadequate plan adaption
5	Human Factors	• Aircraft Navigation	Flew through promulgated and active airspace
• Situational Awareness of the Conflicting Aircraft and Action			
6	Contextual	• Situational Awareness and Sensory Events	Pilot had no, only generic, or late Situational Awareness
7	Human Factors	• Distraction - Job Related	Pilot was engaged in other tasks
• Electronic Warning System Operation and Compliance			
8	Technical	• ACAS/TCAS System Failure	Incompatible CWS equipment
• See and Avoid			
9	Human Factors	• Distraction - Job Related	Pilot looking elsewhere
10	Human Factors	• Monitoring of Other Aircraft	Non-sighting or effectively a non-sighting by one or both pilots

Degree of Risk: C.

Recommendation: SkyDemon review the selection and depiction of sites used for aerial sporting and recreational activities.

Safety Barrier Assessment⁴

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 under the requested Basic Service, the Edinburgh controller was not required to monitor the PA28 in order to give specific situational awareness, albeit he did give a generic warning about likely activity in the area.

⁴ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because after being re-routed, the PA28 pilot warned his passengers to assist in lookout but still flew through the overhead of a promulgated and active gliding site and below the maximum winching altitude whilst winching operations were in progress.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the PA28 pilot did not fully act on the information he had been given when he was informed of likely gliding in the area despite being generically aware that Portmoak gliding site was nearby.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the PA28 was not fitted with a TAS and the glider FLARM was incompatible with the PA28 transponder.

Airprox Barrier Assessment: 2019101		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 Conflicting Aircraft & 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 Used			
Provision	✓	⚠	✗	⊘				
Application	✓	⚠	✗	⊘	○			
Effectiveness								