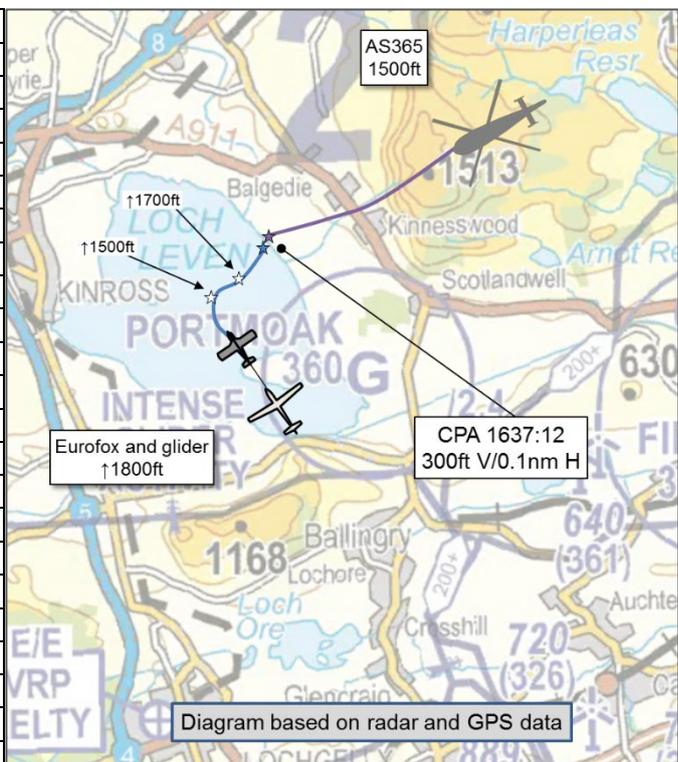


**AIRPROX REPORT No 2019117**

Date: 22 May 2019 Time: 1637Z Position: 5612N 00321W Location: Loch Leven

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	Eurofox 912	AS365
Operator	Civ FW	Civ Helo
Airspace	Scottish FIR	Scottish FIR
Class	G	G
Rules	VFR	VFR
Service	None	None <sup>1</sup>
Provider		
Altitude/FL	1800ft	1500ft
Transponder	A, C, S	A, C, S
Reported		
Colours	Yellow	White
Lighting	Strobes, Landing	Strobes, Nav
Conditions	VMC	VMC
Visibility	>10km	10km
Altitude/FL	1750ft	1600ft
Altimeter	QNH	NK
Heading	270°	200°
Speed	60kt	150kt
ACAS/TAS	FLARM	Not fitted
Alert	Unknown	N/A
Separation		
Reported	150ft V/0m H	300ft V
Recorded	300ft V/0.1nm H	



**THE EUROFOX PILOT** reports that he was the duty tug pilot for the evening flying. The incident occurred on the second tow of the evening; he took off at 1631hrs with an ASK21 glider on tow. The glider had an experienced pilot and a student on board. He climbed by routing along the eastern edge of Loch Leven and made a couple of ‘s’ turns from 600ft upwards as he searched for the best lift. He had been established in a left-hand climbing turn for about 20secs and his main focus was inside the turn looking out for several other gliders known to be within 2nm at similar levels. As he steadied on a heading of 270° a helicopter suddenly appeared from under his left-hand engine cowling, 100m in front. It was now flying away, having passed directly below with 150ft vertical separation. Despite his extensive continuous look-out (because he knew he was in a high traffic density environment), he had no prior knowledge of the helicopter before it passed underneath. He opined that had the helicopter been fitted with FLARM, the Airprox could have been avoided.

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

**THE AS365 PILOT** reports transiting from a private site near Leuchars and had been receiving a Basic Service from Leuchars before switching to Edinburgh. He was aware of the gliding site at Portmoak so he turned further north and was in the process of changing to Edinburgh when he spotted a glider and tug, 3.5nm away, climbing out on a westerly heading from Portmoak. The tug initially climbed straight ahead before turning right, towards his track, and then in an easterly direction. He was above them and now paralleling them in the opposite direction, he was west-bound and they east-bound. They then turned north again, apparently continuing an S manoeuvre climbing through his level to pass above and behind him. He was visual with the aircraft at all times and did not consider there to be a risk of collision.

The pilot assessed the risk of collision as ‘None’.

<sup>1</sup> In the process of calling Edinburgh

## Factual Background

The weather at Edinburgh was recorded as follows:

METAR EGPH 221620Z 26012KT 220V280 9999 SCT041 14/07 Q1015=

## Analysis and Investigation

### UKAB Secretariat

Neither pilot was receiving an ATS. The Airprox can be seen on the NATS area radars as shown on the following screenshots. At 1636:26 (Figure 1), the Eurofox and glider can be seen to the west of Portmoak and the AS365 is to the NE. The two aircraft continue to close (Figure 2) until CPA at 1637:12 (Figure 3).

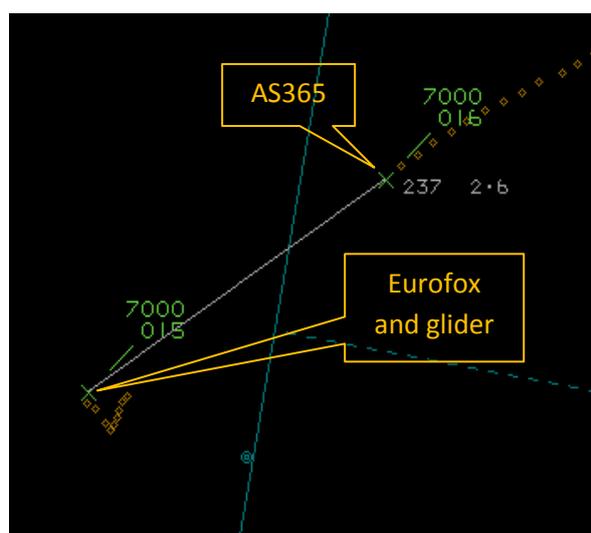


Figure 1: 1636:26

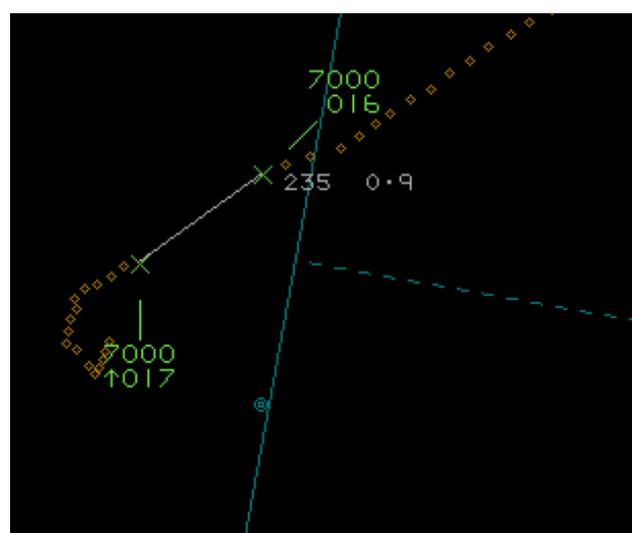


Figure 2: 1636:57

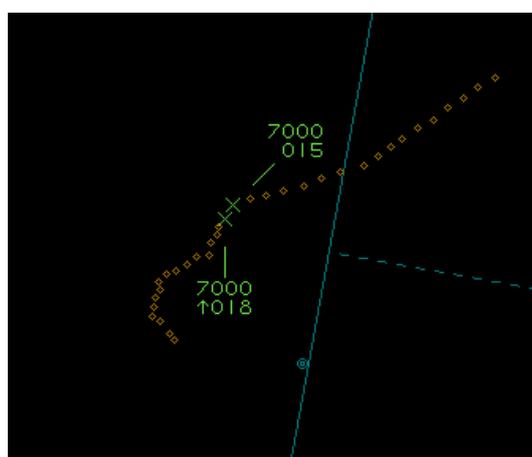


Figure 3, CPA: 1637:12

The Eurofox and AS365 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard<sup>2</sup>. If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right<sup>3</sup>. If the incident geometry is considered as converging then the AS365 pilot was required to give way to the glider/tug combination<sup>4</sup>.

<sup>2</sup> SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.

<sup>3</sup> SERA.3210 Right-of-way (c)(1) Approaching head-on. MAA RA 2307 paragraph 13.

<sup>4</sup> SERA.3210 Right-of-way (c)(2) Converging. MAA RA 2307 paragraph 12.

## Comments

### BGA

It's pleasing that the AS365 was both aware of Portmoak and spotted the combination in good time, but given the limited manoeuvrability of glider/tug combinations, we would hope that other aircraft would give them a wide berth. Tracking this close to a very busy gliding site, albeit not within the marked area, it would have been helpful if the AS365 had called Portmoak.

## Summary

An Airprox was reported when a Eurofox and an AS365 flew into proximity in the vicinity of Portmoak at 1637hrs on Wednesday 22<sup>nd</sup> May 2019. Both pilots were operating under VFR in VMC, neither in receipt of an ATS.

## **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available consisted of reports from the pilots of both aircraft, transcripts of the relevant RT frequencies 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.

The Board first looked at the actions of the Eurofox pilot. He had not seen the AS365 as it approached from the NE and so was surprised when he saw it pass beneath him (**CF3**). That being said, the AS355 was there to be seen for some time and, although the Board acknowledged that the Eurofox pilot would have been concentrating on towing his glider and looking for other gliders in the area, it was still incumbent on him to maintain a robust all-round lookout. In the event, the Eurofox pilot did not see the AS365 until after CPA, too late to take avoiding action (**CF5**). The Board noted the pilot's comments about the AS365 not being fitted with FLARM, but had the Eurofox been fitted with a compatible TAS (e.g. P-FLARM or PilotAware) it might also have picked up the AS365's transponder. Although FLARM was increasingly common in the glider fleet, it was not widespread in other aircraft and so the underlying issue was that neither aircraft had been fitted with compatible CWS (**CF4**).

Turning to the AS365 pilot, it seemed to the Board that his routing over (or at least near) to the high ground north of Portmoak had served to reduce both the time available for other pilots operating in the Portmoak area to see his aircraft and for him to see them. Furthermore, knowing that there was likely to be extensive activity around Portmoak and the loch (as indicated on the VFR chart), helicopter members commented that he would have been better served by avoiding the loch altogether if possible (**CF1**). That being said, the Board acknowledged that it was a busy area, with Fife para-dropping site to the east of Portmoak and Balado microlight site to the north-west, so the pilot was left with few choices of area to transit through. Notwithstanding, members thought that he could have at least called on the Portmoak frequency to advise that he was flying past, and this would have likely alerted gliders (and tugs) in the vicinity to his presence (**CF2**). Members noted that, having seen the Eurofox and glider in good time, he had watched them climb out and had initially assessed that there was enough separation. Unfortunately, the Eurofox then unknowingly turned towards him and this highlighted the need for pilots to give tug combinations a wide berth in order to avoid unexpected interactions. Ultimately, although the AS365 pilot was content with the resulting separation it was clear that the Eurofox pilot, who was taken by surprise, was not and the Board thought the AS365 pilot should have done more to keep out of its way (**CF6**). Not only was this to allow for unpredictable turns, members also warned against taking minimum separation from glider and tug combinations because the glider could release without warning at any time, after which the glider and tug normally go in opposite directions with the tug rapidly descending to return to base, all of which can be difficult to predict.

Finally, the Board assessed the risk and quickly agreed that because the AS365 pilot was visual with the tug and glider, there had been no risk of collision. That being said, the reduced separation between them and the associated potential for unexpected turns or glider release meant that the Board assessed that safety had been degraded; risk Category C.

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

Contributory Factors:

2019117			
CF	Factor	Description	Amplification
<b>Flight Elements</b>			
<b>• Tactical Planning and Execution</b>			
1	Human Factors	• No Decision/Plan	Inadequate planning
2	Human Factors	• Communications by Flight Crew with ANS	Pilot did not communicate with appropriate controlling authority
<b>• Situational Awareness of the Conflicting Aircraft and Action</b>			
3	Contextual	• Situational Awareness and Sensory Events	Pilot had no, only generic, or late Situational Awareness
<b>• Electronic Warning System Operation and Compliance</b>			
4	Technical	• ACAS/TCAS System Failure	Incompatible CWS equipment
<b>• See and Avoid</b>			
5	Human Factors	• Monitoring of Other Aircraft	Late-sighting by one or both pilots
6	Human Factors	• Lack of Individual Risk Perception	Pilot flew close enough to cause the other pilot concern

Degree of Risk: C.

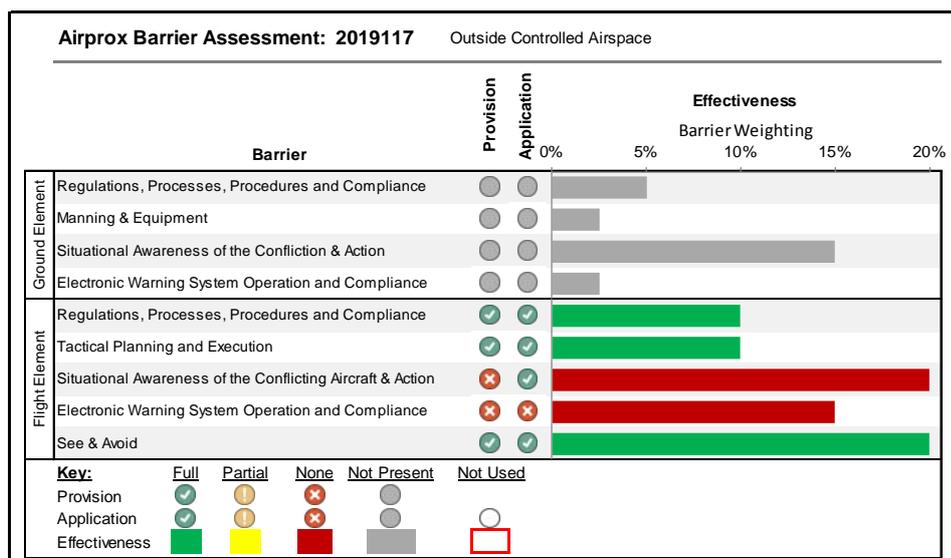
Safety Barrier Assessment<sup>5</sup>

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

**Flight Elements:**

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **ineffective** because there was no SA available to either pilot.

**Electronic Warning System Operation and Compliance** were assessed as **ineffective** because the FLARM on the Eurofox could not detect the AS365's transponder and the AS365 was not FLARM equipped.



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