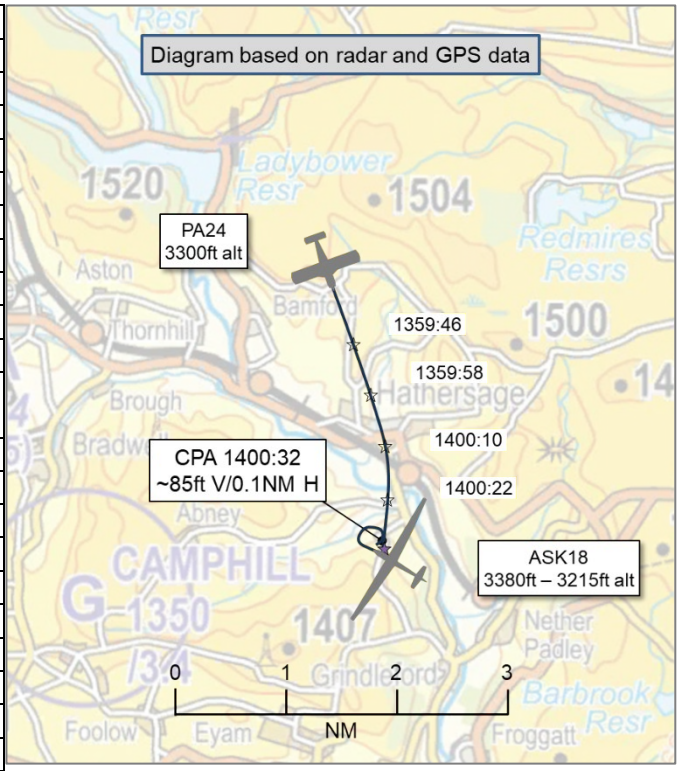
AIRPROX REPORT No 2024192

Date: 06 Aug 2024 Time: 1401Z Position: 5319N 00139W Location: 1NM S Hathersage

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	ASK18	PA24
Operator	Civ Gld	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	None
Altitude/FL	~3215ft	3300ft
Transponder	Not fitted	A, C, S
Reported		
Colours	Red	White/red
Lighting	Not fitted	Beacons, strobes, landing
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2750ft	3300ft
Altimeter	QNH (NK hPa)	QNH (1008hPa)
Heading	circling	188°
Speed	45kt	150kt
ACAS/TAS	FLARM	PowerFLARM
Alert	Alert	None
Separation at CPA		
Reported	50ft V/0m H	Not seen
Recorded	~85ft V/0.1NM H	



THE ASK18 PILOT reports circling in a thermal when they received a [TAS] alert and tried to identify the converging aircraft visually. They were unable to do so before the other aircraft passed overhead from behind.

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

THE PA24 PILOT reports they were not aware that there had been an incident. They had ADS-B in and out but did not receive an alert. They also had a [TAS] mounted on the glare shield directly in front of them. They did not receive a warning. Prior to Hathersage they had been on a listening squawk with Manchester Radar. At around Hathersage, they contacted East Midlands Radar and requested a Basic Service,[1] which they retained until approaching Church Broughton. The altitude of 3300ft had been selected to remain below Manchester's airspace and to maximise terrain clearance.

Factual Background

The weather at Manchester was recorded as follows:

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METAR COR EGCC 061420Z AUTO 23009KT 9999 FEW049 21/10 Q1007 NOSIG=
METAR COR EGCC 061350Z AUTO 25010KT 9999 NCD 20/10 Q1008 NOSIG=
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[1] The PA24 displayed a 7000 squawk at CPA. The squawk changed to an East Midlands code about 1min 20sec after CPA so the pilot was most likely either still listening out with Manchester or in the process of obtaining a Basic Service at CPA.

Analysis and Investigation

UKAB Secretariat

The ASK18 and PA24 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 overtaking then the ASK18 pilot had right of way and the PA24 pilot was required to keep out of the way of the other aircraft by altering course to the right.[3]

Comments

AOPA

Whilst electronic conspicuity is becoming more prevalent, until the Department for Transport mandates a common system it is unlikely systems will always show other aircraft. It is recommended whilst flying to obtain the best available radar-based surveillance service, enabling greater situational awareness via this source. The final barrier to mid-air collision avoidance is having an effective lookout scan.

BGA

This incident once again highlights the difficulty of seeing a small aircraft approaching head-on at high speed, as the PA24 would have appeared from the perspective of the ASK18 pilot.

A glider circling in a thermal climb will typically complete one 360° turn every 20sec, during which time an aircraft approaching at 150kt would cover 0.8 NM. The pilot of a thermalling glider must look for aircraft approaching from every direction; although continuously turning facilitates 360° lookout, it also leaves the pilot unsighted in any specific direction for about half the time.

The PA24 operator is to be commended for fitting a comprehensive suite of Electronic Conspicuity (EC) equipment, including both ADS-B (in and out), and the system used by almost all gliders. Unfortunately the latter was only partially effective, warning the ASK18 pilot but not the PA24 pilot of the impending conflict.

Summary

An Airprox was reported when an ASK18 and a PA24 flew into proximity 1NM south of Hathersage at 1401Z on Tuesday 6th August 2024. Both pilots were operating under VFR in VMC, neither in receipt of a FIS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

Board members first discussed the PA24 pilot's actions, noted their multiple TAS equipments and commended them for investing in their aircraft's electronic conspicuity. Unfortunately, it appeared that the PA24 portable TAS, which could operate in common with the ASK18 TAS, had not alerted (**CF3**) so the PA24 pilot had had no situational awareness of the ASK18 ahead (**CF1**). The ASK18 pilot's TAS alert (**CF2**) had afforded them a degree of situational awareness albeit, the Board felt, at a late stage (**CF1**). In the absence of a surveillance-based FIS, the remaining barrier to collision or such proximity that created a collision risk had been see-and-avoid. Again, unfortunately, the geometry of the Airprox had been such that the ASK18 pilot had been unsighted on the PA24 until at about CPA, effectively a non-sighting (**CF4**), and the PA24 pilot had not seen the ASK18 (**CF4**). The PA24 squawk had changed

[2] (UK) SERA.3205 Proximity.
[3] (UK) SERA.3210 Right-of-way (c)(3) Overtaking.

to an East Midlands allocated code about 1min 20sec after CPA, so the Board wondered whether the PA24 pilot might have changed frequency at about CPA in order to establish a FIS and had consequently been distracted by in-cockpit activity, perhaps at the expense of effective lookout. The Board was informed by a Secretariat advisor that the UKAB notification to East Midlands had been misplaced during a period of personnel change at East Midlands and consequently that R/T and radar data had not been quarantined. It had therefore not been possible to establish definitively when the PA24 pilot had first made contact with East Midlands. Members agreed that this might have been a factor and a GA member noted that, with the benefit of hindsight, it might have been advisable to have prioritised lookout in the vicinity of a notified gliding site and to have established a FIS either well before or after passing, in this case, Camphill gliding site.

Turning to risk, although the fusion of GPS and radar track data indicated that the aircraft had passed with 0.1NM lateral separation, members acknowledged the location errors inherent in the radar replay and in the process of fusing the 2 data sources. A gliding member pointed out that glider pilots are well acclimatised to operating in close proximity to other gliders and that the ASK18 pilot's statement that 'the other aircraft passed overhead' probably indicated that lateral separation at CPA had been significantly less than 0.1NM. Some members felt that safety had been much reduced, Risk B, whereas others felt that providence had played a major part, Risk A. The matter was put to a vote at which the former opinion prevailed, Risk B.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024192			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Flight Elements			
	• Situational Awareness of the Conflicting Aircraft and Action			
1	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			
2	Contextual	• Other warning system operation	An event involving a genuine warning from an airborne system other than TCAS.	
3	Human Factors	• Response to Warning System	An event involving the incorrect response of flight crew following the operation of an aircraft warning system	CWS misinterpreted, not optimally actioned or CWS alert expected but none reported
	• 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
	• Outcome Events			
5	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 Assessment[4]

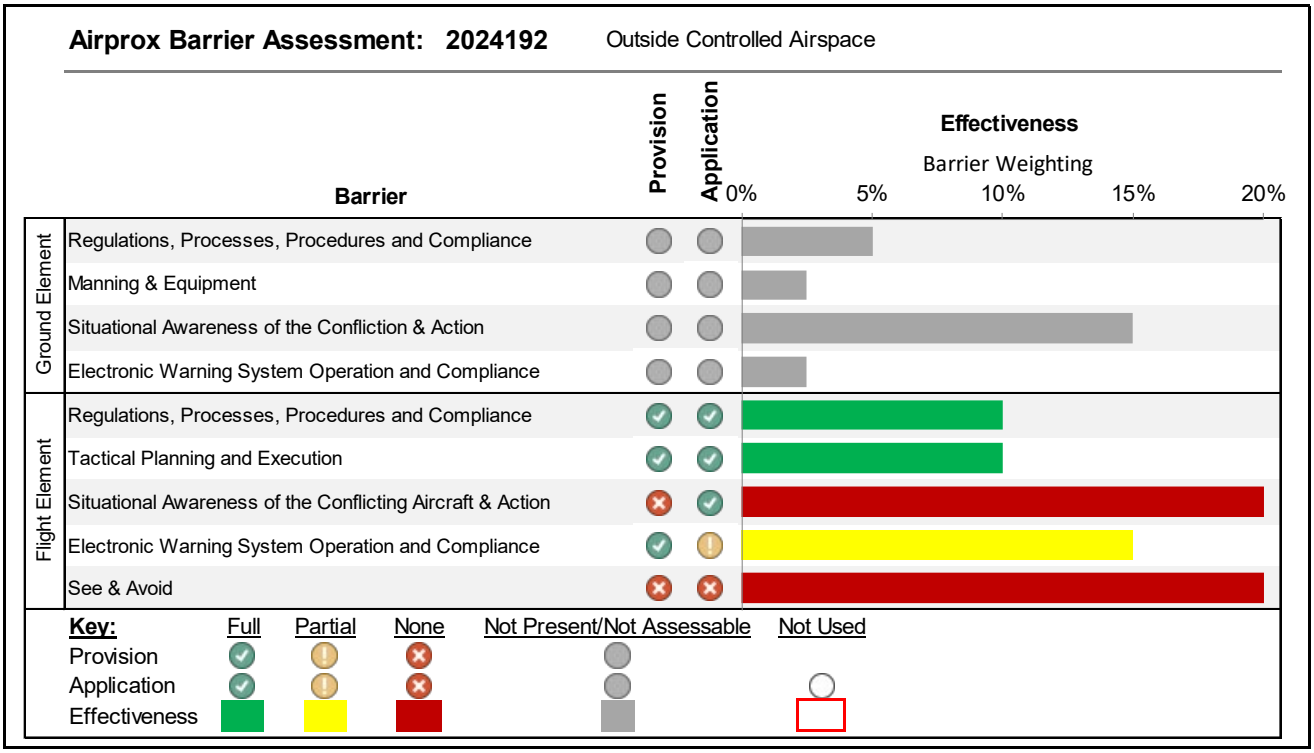
In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the PA24 pilot had no situational awareness on the ASK18 and the ASK18 pilot had late situational awareness on the PA24.

Electronic Warning System Operation and Compliance were assessed as **partially effective** because, although the ASK18 pilot received a TAS alert, the PA24 pilot did not receive an alert from their portable and compatible TAS.

See and Avoid were assessed as **ineffective** because the ASK18 pilot saw the PA24 at about CPA, effectively a non-sighting, and the PA24 pilot did not see the ASK18.



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