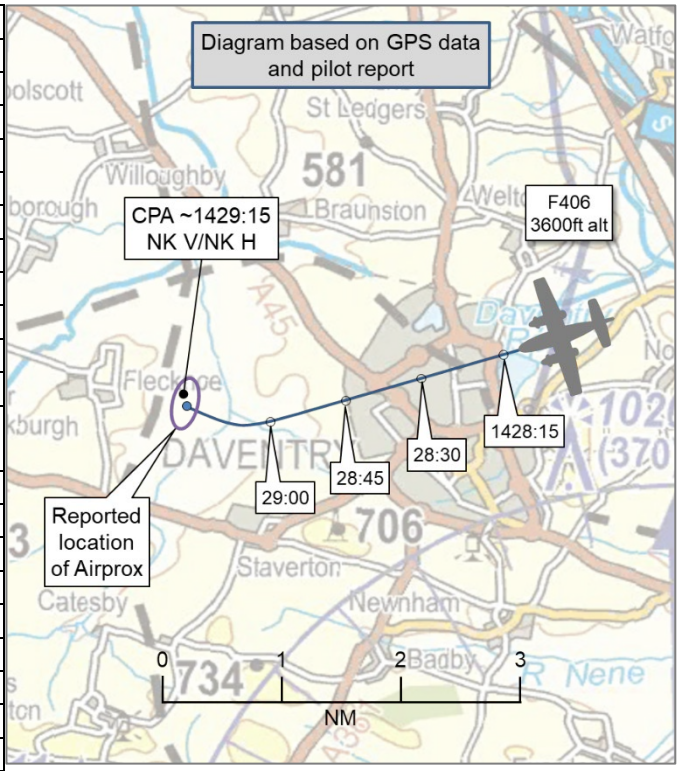
AIRPROX REPORT No 2021172

Date: 06 Sep 2021 Time: ~1429Z Position: 5216N 00113W Location: 2NM W of Daventry

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	F406	Unknown glider
Operator	Civ Comm	Civ Gld
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	NK
Service	Traffic	None
Provider	Birmingham Radar	N/A
Altitude/FL	3600ft	NR
Transponder	A, C, S	None
Reported		
Colours	White, purple	NK
Lighting	Landing, strobe, navigation	NK
Conditions	VMC	NK
Visibility	5-10km	NR
Altitude/FL	3400-3600ft	NK
Altimeter	QNH (1023hPa)	NK (NK hPa)
Heading	'North-west'	NK
Speed	160kt	NK
ACAS/TAS	Not fitted	Unknown
Separation at CPA		
Reported	0ft V/200m H	Unknown
Recorded	NK V/NK H	



THE F406 PILOT reports that they were conducting a routine survey calibration flight over Daventry city. They had just finished one of their lines and were turning off to begin establishing onto the next line when a glider appeared out of nowhere from right-to-left across their nose at the same level. They initially turned right, which took them away from the glider and, once clear of the conflict, they turned left, maintaining a safe visual radius from the glider to establish onto their next line. Whilst in their 270° left turn, the glider appeared to turn towards them throughout but, once they were wings level, the glider was well behind. They assess that the cloud base was approximately 4000ft. Prior to this sighting, they had observed a couple of gliders as well as having received a couple of traffic reports from Birmingham, all of which were of no factor. However, with this Airprox, they decided that the only safe option was to cancel the survey and return to base.

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

THE UNKNOWN GLIDER could not be traced.

THE BIRMINGHAM RADAR CONTROLLER reports that [the F406 pilot] was conducting an aerial survey in the vicinity of Daventry on a Traffic Service. At approximately 1432, the pilot reported that they were terminating their survey and returning to [their destination] following an Airprox with a glider at 3500ft. Nothing was observed on radar and the pilot said they would be filing a full report after landing.

Factual Background

The weather at Birmingham Airport was recorded as follows:

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METAR EGBB 061420Z 24004KT 130V290 9999 FEW048 27/15 Q1023=
METAR EGBB 061450Z 25004KT 150V320 CAVOK 27/15 Q1023=
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Analysis and Investigation

Birmingham Airport ATC

Timeline

1430 – [The F406] Flight Progress Strip was active in the RAD1 strip bay – the strip indicated that the aircraft was on a Traffic Service, on a photo survey – 30min at Daventry and 30min at Gaydon. [The F406] was observed on the radar replay operating approximately 22NM SSE of BHX indicating 3500ft.

1431:34 – [The F406 pilot] called the RAD1 controller and stated that they will be routing back to [destination airfield] because they have just had an Airprox with a glider - "*about 200m just to the north west of Daventry, altitude 3500ft*".

The RAD1 controller acknowledged the call and stated there was nothing seen on radar. The RAD1 controller asked whether they would be filing – they confirmed that they would.

Findings

[The F406 pilot], carrying out survey work in the vicinity of Daventry, reported an Airprox with a glider. No contacts were observed on radar in the vicinity of [the F406].

CAA ATSI

An ATSI investigator reviewed the area radar and RTF recordings and noted the following:

The F406 pilot called the Birmingham Radar controller at 1405 for a Traffic Service, advising a 30min survey, firstly in the Daventry area, then a further 30min in the Gaydon area. Traffic Information on a primary contact was passed at 1416 but not acknowledged by the F406 pilot. Further Traffic Information on a primary contact was passed at 1418 and this was acknowledged by the pilot. Between then and 1423 the Birmingham Radar controller passed further Traffic Information on secondary contacts, whilst also handling two inbounds, a further survey aircraft and other traffic. Having been passed Traffic Information on transponding traffic at 1422, the F406 pilot reported visual and the fact that they were also avoiding a glider.

There was then a change of controller and, although the flow of Traffic Information appeared to stop, this is coincidental with there not being any identifiable contacts in that area. For the minutes running up to the reported Airprox, there were no contacts, primary or otherwise, seen in the vicinity of the F406 on the area radar replay.

It was noted that the Birmingham investigation report did not include any snapshots of their radar display. However, the first controller did pass Traffic Information on a primary target that was not visible on the area radar replay. As well as Husbands Bosworth intense gliding activity, it was also noted that there are a number of wind turbines marked on the aviation chart in this area. This detracts further from any area radar replay snapshots being able to offer a fair assessment of the traffic situation.

UKAB Secretariat

The F406 and unknown glider 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] If the incident geometry is considered as converging then the F406 pilot was required to give way to the unknown glider.[2]

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

Comments

F406 Operating Company

A Company Safety Action Group (SAG) meeting was held in October 2021 to discuss ongoing proposed mitigation. As a result of the SAG:

- The Company has committed to the purchase of 10 x [electronic conspicuity] units and back-up battery packs for use on board their survey aircraft, including 2 x units for spare.

- The relocation of the survey calibration site has been discussed with their customer, from Daventry to the disused Cottesmore site. Their own work to implement this change is expected to be completed by the end of October 2021. In the meantime, the Company will continue to operate calibration flights with a second crewmember on board.

BGA

We commend the F406 Operator for their decision to purchase EC Units, and we hope that these will be able to detect the electronic conspicuity signals most commonly transmitted by gliders.

Summary

An Airprox was reported when an F406 and an unknown glider flew into proximity 2NM W of Daventry at approximately 1429Z on Monday 6th September 2021. The F406 pilot was operating under VFR in VMC and in receipt of a Traffic Service from Birmingham Radar; the unknown glider pilot could not be traced.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate operating authorities. 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.

Due to the exceptional circumstances presented by the coronavirus pandemic, this incident was assessed as part of a 'virtual' UK Airprox Board meeting where members provided a combination of written contributions and dial-in/VTC comments.

The Board first considered the actions of the F406 pilot and discussed what opportunities there had been for the pilot to gain situational awareness of the presence of the glider. The Board noted that the Birmingham controller had been passing Traffic Information to the F406 pilot on both primary-only and secondary radar contacts and therefore considered it reasonable to suppose that Traffic Information would have been passed had the untraced glider been displayed to the Birmingham Radar controller. The Board also discussed the use of on-board electronic conspicuity (EC) devices and was encouraged to hear that, since this Airprox, the F406's operating company has bought a number of devices for use during survey and calibration flights and that these devices will be compatible with a large number of other devices – including those devices most often fitted to gliders. Unfortunately, in this instance the Board was unable to determine if such equipment might have enhanced the F406 pilot's situational awareness as the glider remained untraced and so it was not known if the glider had been carrying any form of EC equipment. Members agreed that, in the event, without Traffic Information and with no on-board equipment to indicate the presence of the glider, the F406 pilot had not had any situational awareness regarding the glider's relative position (**CF2**). Consequently, once the F406 pilot sighted the glider they had been concerned by its proximity (**CF3**) and the Board noted that the F406 pilot's Threat and Error Management led them to the conclusion that the most prudent course of action had been to cancel the remainder of their survey calibration flight.

The Board then turned briefly to the actions of the Birmingham Radar controller and quickly agreed that there was little more that they could have done to prevent the Airprox. Members noted that the glider

had not been displayed on the NATS radar replay and that the Birmingham ATC investigation stated that there had also been no contacts on the Birmingham Radar controller's display. Consequently, the Board agreed that the Birmingham Radar controller had not had any situational awareness of the presence of the glider (**CF1**) and so could not have offered any information to the F406 pilot.

Finally, the Board considered the risk involved in this event. The Board's deliberations were somewhat hindered by the lack of information from the pilot of the untraced glider, and also because there was no recorded radar data with which the separation could be measured. Thus, members were relying on the report provided by the F406 pilot. The Board noted that the pilot had sighted the glider as it moved from right-to-left across their nose at a similar altitude, but that the F406 pilot had had the time to assess the confliction and take appropriate action to ensure separation from the glider. Therefore, the Board concluded that, although safety had been reduced, there had been no risk of collision as this had been removed by the actions of the F406 pilot. Accordingly, the Board assigned a Risk Category C to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2021172			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Situational Awareness and Action			
1	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, inaccurate or no Situational Awareness
	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
	• See and Avoid			
3	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 Assessment[3]

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 **ineffective** because the unknown glider was not detected by the Birmingham radar and consequently the Birmingham Radar controller did not have any situational awareness of the presence of the glider.

Electronic Warning System Operation and Compliance were assessed as **not used** because the unknown glider was not transponding and so the STCA at Birmingham could not have generated an alarm.

Flight Elements:

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

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the F406 pilot did not have any situational awareness of the presence of the unknown glider.