

AIRPROX REPORT No 2022195

Date: 23 Aug 2022 Time: ~1514Z Position: 5115N 00215W Location: 2.5 NM NE Frome

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	LS3A	A400M
Operator	Civ Gld	HQ Air (Ops)
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	NK
Service	None	None
Altitude/FL	NK	NK
Transponder	Not fitted	A, C, S+
Reported		
Colours	White	Grey
Lighting	None	NR
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	500ft	600ft
Altimeter	QFE (NK hPa)	QNH (NK hPa)
Heading	'Thermalling'	000°
Speed	50kt	270kt
ACAS/TAS	PowerFLARM ¹	TCAS
Alert	None	None
Separation at CPA		
Reported	0ft V/100m H	NK V/NK H
Recorded	NK V/NK H	

THE LS3A PILOT reports that [they had been part of] a gaggle of gliders thermalling low-down during a competition out of Keevil. An A400M came past, [approaching from south] at approximately the same height, and forced avoiding action. The LS3A pilot reports that they turned out of an established thermal to avoid collision.

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

THE A400M PILOT reports that they had planned a low-level flight for the morning of 23rd August. A NOTAM warning over Keevil Airfield (of radius 5NM) described a glider competition within its confines. The route to and from [their tasking] that day required passing close to that event. Due to the extremely congested nature of the low flying system in that area, it left few options but to circumnavigate the NOTAM. The route was plotted outside the NOTAM area even though it was a warning, not an avoid, in order to mitigate against coming into proximity with the gliders partaking in that competition. The last NOTAM check was made and recorded on the authorisation sheet at 1000 prior to commencing the out-brief, authorisation process and walking to the aircraft. The NOTAM had not changed at the 1000 check. The crew flew their planned route past the NOTAM area at Keevil. No gliders were observed. Having completed the [task] the crew flew diligently back along their prescribed routing north-bound, cognisant of the potential for gliders in the area. As such, the crew members were paying extra attention to the area of the NOTAM. The aircraft was about 300ft AGL, north-bound, as it passed east abeam Frome by approximately 2NM. The pilots in the [front-left and front-right seats] reported seeing gliders but were happy there was no conflict. The instructor (in the front-centre seat) was unable to observe the gliders. No TCAS returns were observed in the vicinity so the only situational awareness they had on them was from visual acquisition. On returning to [departure airfield], the ATC supervisor asked if they would call the organiser of the gliding event which they duly did. The event organiser explained that one of the glider pilots had raised concerns about the proximity of the aircraft to each other. [The A400M pilot] reported that they had not observed any gliders close to them and that they had

¹ The pilot of the LS3A confirmed that their PowerFLARM installation did not have an ADS-B capability.

meticulously followed their planned route outside the NOTAM glider competition area. If, therefore, they had encroached on competition aircraft then they were operating outside the area defined by the NOTAM. However, regardless of whether they had been outside the NOTAM area, they were operating in Class G airspace and as such it is see-and-avoid. They are continuously looking-out for gliders, microlights, paragliders and GAT that are not equipped with transponders or TCAS as well as all the other users of Class G airspace. If they had seen any aircraft that they thought had got close to they would have taken immediate positive action to maintain separation. The event organiser responded by sharing an image of a NOTAM on their [EC device] screen (which [is a system that the A400M pilot] does not use for NOTAM research) showing a glider cross-country route extending well beyond the original NOTAM area and through which the [A400M] flightpath had taken them. They went on to say that "...we also NOTAM the route but publishing time depends on workload at CAA AR Ops in the morning...". It would appear that at the last NOTAM check made at 1000 the glider cross-country route had not been published on the [mission planning system]. Regardless, they had not seen any aircraft close to them at any stage of their flight and therefore had not raised a DASOR.²

The pilot perceived the severity of the incident as 'Low'.

Factual Background

The weather at Bristol was recorded as follows:

METAR EGGD 231520Z AUTO 29007KT 9999 FEW033 BKN046 22/17 Q1014

There were three areas described by NOTAMs in the vicinity at the time of CPA, two being radii of fixed points and a third, published at 0929 on the morning of the 23rd August 2022, described a cross-country route for gliders (see Figure 1).

Issue date: 27th July 2022 0757

H5791/22: Unmanned flight will take place

Q) EGTT/QWULW/IV/BO/W/000/009/5118N00219W002

UAS SWARM OPR WI 1NM RADIUS OF 511818N 0021844W (NORTON ST

PHILIP, SOMERSET). SWARM COMPRISED OF UP TO 500 UAS. MAX HGT 400FT

AGL. FOR INFO 07437 599947. 2022-08-0141/AS2

LOWER: Surface, UPPER: 900 Feet AMSL

FROM: 01 Aug 2022 08:00 GMT (08:00 UTC) TO: 31 Aug 2022 22:00 GMT (22:00 UTC)

SCHEDULE: 0800-2200

Issue date: 19th August 2022 1427

H6732/22: Glider flying will take place

Q) EGTT/QWGLW/IV/M/W/000/100/5119N00207W006

MAJOR GLIDING COMPETITION. INTENSE ACT WI 5NM RADIUS:

511851N 0020637W (KEEVIL AD, WILTSHIRE). UP TO 40 GLIDERS AND 6 TUG

ACFT MAY PARTICIPATE. ACFT SHALL REMAIN CLEAR OF CONTROLLED

AIRSPACE. FOR DAILY ROUTE INFO: WWW.GLIDINGTASKS.CO.UK OR 07958

570587 AND 129.980MHZ. 2022-08-0597/AS3.

LOWER: Surface, UPPER: FL100

FROM: 20 Aug 2022 09:00 GMT (09:00 UTC) TO: 29 Aug 2022 18:00 GMT (18:00 UTC)

SCHEDULE: 0900-1800

Issue date: 23rd August 2022 0929

H6801/22 NOTAMN

Q) EGTT/QWGLW/IV/M /W /000/060/5118N00207W015

A) EGTT B) 2208231100 C) 2208231700

E) MAJOR GLIDING COMPETITION. ACFT ROUTING:

511919N 0020933W (TROWBRIDGE EAST)

511201N 0022241W (NUNNEY)

512525N 0021219W (CORSHAM)

² Defence Air Safety Occurrence Report.

512509N 0015228W (AVEBURY)
 511857N 0020630W (KEEVIL)
 50 GLIDERS TRANSITING AT 1500-5000FT AGL WI 5NM OF ROUTE. TIMINGS,
 HGT AND ROUTE ARE APRX AND MAY CHANGE DUE TO WX OR OTHER
 REQUIREMENTS. GLIDERS MAY MONITOR COMPETITION FREQ 130.405MHZ. FOR
 LATEST INFO WWW.GLIDINGTASKS.CO.UK OR 07958 570587. 2022-08-0689/AS3.
 F) SFC G) 6000FT AMSL

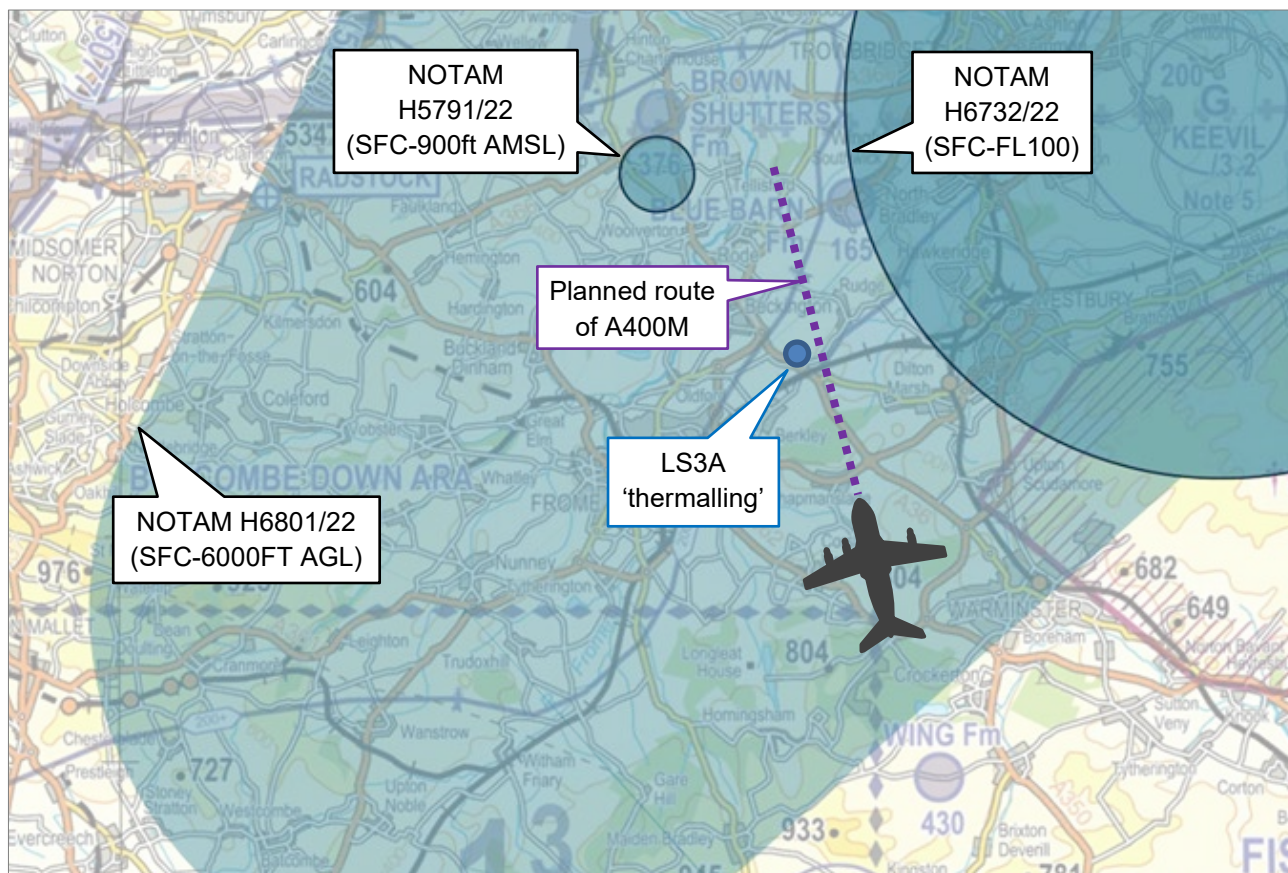


Figure 1 – The NOTAM areas and relative positions of the aircraft

Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and the LS3A was not observed. The A400M appeared sporadically but the flight path could not be recreated from the intermittent radar returns. The A400M was identified momentarily on radar at the approximate time of CPA and the position would appear to correlate with a plan of the intended route as kindly supplied by the pilot of the A400M. The pilot of the LS3A kindly supplied GPS track data of their flight and the LS3A was observed to have entered a 'thermalling' manoeuvre at 1513 at approximately 1000ft and had been descending. At 1515, the LS3A had been at approximately 650ft AMSL.

The elevation of the ground at the estimated location of CPA is approximately 200ft. The A400M had been observed on radar, moments after CPA, to be at FL010. The atmospheric pressure at Bristol had been recorded as 1014hPa and the altitude of the A400M was therefore determined to be approximately 1000ft AMSL, 800ft AGL. The actual moment of CPA and the separation between the aircraft could not be determined.

The LS3A and A400M pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.³ If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right.⁴ If the incident geometry is considered as converging then the A400M pilot was required to give way to the LS3A.⁵ If the incident geometry is considered as overtaking then the LS3A pilot had right of way and the A400M pilot was required to keep out of the way of the other aircraft by altering course to the right.⁶

Comments

HQ Air Command

This incident was subject to a Local Investigation. During the planning stage, the A400M crew planned their route to avoid the gliding NOTAM. Whilst it provided a contact number, frequency and details of where to find the day's specific routing, it was not explicit that routing would extend beyond the 5NM NOTAM'd area. It is unfortunate that the second NOTAM detailing the day's routing was not available to the crew prior to walking to the aircraft, however, the route was planned for low-level, below the published advisory glider transit heights. It was a sensible and safe decision to route around the NOTAM and, as the crew perceived they were clear of the gliding NOTAM, they did not utilise the frequency provided. Had they called on frequency, they may have been provided the day's route and they may have provided better SA of their presence and routeing to the participating glider pilots. As it was, the gliding route for that day and the A400M's route coincided outside the original 5NM NOTAM. The crew remained vigilant to gliders throughout the sortie, constantly on the lookout. With incompatible EC equipment between the two types and no transponder on the glider, the TCAS was rendered ineffective leaving see and avoid as the primary barrier to MAC.

BGA

The Airprox glider was one of about 40 participating in a competition based at Keevil aerodrome from Saturday 20th to Sunday 28th August 2022. On each individual day with appropriate weather, the contestants flew a new 'task', aiming to reach a sequence of 2-5 remote turning points in order, then return to Keevil. Tasks were devised each morning, taking into account weather and NOTAM'd flight restrictions, then briefed to contestants at 1000 BST (0900 UTC). Task distances varied from 87km to 251km, using turn-points as far north as Alcester (5212N 00152W), as far south and west as Tiverton (5055N 00321W) and as far east as Yattendon (5127N 00112W).

On each contest day all gliders were launched by aerotow within a one-hour window, beginning at different times each day; typically around 1200 BST (1100 UTC), but varying by up to 2 hours, depending on soaring conditions. Contestants cannot start the task until all contest gliders have launched, so airspace near Keevil was expected to be exceptionally busy during a 1-2 hour window at different times each day, and NOTAM H6732/22 was issued to give advance warning of this. In addition, each day's route was published as soon as possible at <https://glidingtasks.co.uk/>, and also available by telephone or via VHF channel 129.980MHz, as notified in H6732/22. An individual daily route NOTAM was also submitted at the same time, but experience shows that such NOTAMs may only become available to other airspace users after several hours' delay.

The task route for the day in question (23rd August) was published that morning in NOTAM H6801/22, and also available by 1000 UTC by telephone, the glidingtasks.co.uk website, or via VHF channel 129.980MHz (see <https://glidingtasks.co.uk/date/2022-08-23/>). The first turning point was 12.5NM SW of Keevil, and soaring conditions were weak in places; hence many contestants had difficulty staying airborne, and some 'landed out' (typically in farmers' fields). At the time of the Airprox, the glider pilot had already selected a field where they would land if required, and was

³ (UK) SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.

⁴ (UK) SERA.3210 Right-of-way (c)(1) Approaching head-on. MAA RA 2307 paragraph 13.

⁵ (UK) SERA.3210 Right-of-way (c)(2) Converging. MAA RA 2307 paragraph 12.

⁶ (UK) SERA.3210 Right-of-way (c)(3) Overtaking. MAA RA 2307 paragraph 14.

making one last attempt to climb away from around 500ft AGL, before landing safely in the selected field about 2min after CPA. The glider was then disassembled and returned to Keevil by road.

The A400M crew is to be commended for using the information from their 1000 UTC pre-flight briefing to plan a route avoiding the intense activity NOTAM'd in H6732/22, even though not obliged to do so. It is unfortunate that NOTAM H6801/22 was apparently not available to them, as this would have warned that their planned route crossed the first leg of the gliding task, which would be traversed by 40 gliders at all levels up to cloudbase in the course of the afternoon.⁷

Although the glider was equipped with PowerFLARM, this did not include the ADS-B-in option, and hence was not able to detect the A400M's ADS-B transmissions. See-and-avoid was therefore the only operating MAC safety barrier in this incident. The LS3A pilot is to be commended for maintaining a good lookout, and manoeuvring to remain clear of the A400M.

Summary

An Airprox was reported when an LS3A and an A400M flew into proximity 2.5NM northeast of Frome at approximately 1514Z on Tuesday 23rd August 2022. 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 both pilots, radar photographs/video recordings 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.

The Board first considered the actions of the pilot of the LS3A. Members acknowledged that the conditions had been broadly unfavourable to sustain unpowered flight and that, in the moments leading up to CPA, the pilot had sought to land in a nearby field. The Board heard that that this had been the case for the majority of competitors that day. The discussion turned to the EC device fitted to the LS3A. A member with particular knowledge in that area suggested that the specific unit installed did not have the capability to have detected ADS-B transmissions despite its current manufacturer's marketing publicity apparently suggesting otherwise. Nevertheless, it had been the case that the EC device fitted to the LS3A would not have been expected to have detected the presence of the A400M (**CF3**). The pilot of the LS3A had not been in receipt of an ATS and had had no situational awareness of the presence of the A400M before it had been visually acquired (**CF2**). The separation of the aircraft at CPA could not be determined but it was nevertheless acknowledged that the pilot of the LS3A had been concerned by the proximity of the A400M (**CF5**).

Turning their attention to the issuance of the relevant NOTAMs, members discussed at length the process undertaken to have such submitted for consideration to be subsequently issued. A member with particular knowledge of gliding operations explained that it would be typical that a NOTAM is issued a few days in advance of a gliding competition. This NOTAM would warn of the general area of the competition and, once the gliding competition organiser had assessed the weather forecast on the morning of the competition, a subsequent NOTAM would be issued to provide detail of the cross-country route and turning points. Members noted that this had been the case, and that the initial NOTAM had been issued 4 days ahead of the competition. The NOTAM that detailed the cross-country route had been issued as a navigation warning at 0929 on the day in question. Next, members considered the wording of the NOTAM, specifically the detail regarding the dimensions of the airspace involved and the radio frequency associated with the competition. Some members questioned whether the information provided had been too vague to be of much use for operational route planning for other airspace users, and had effectively 'blocked' a large section of airspace given that gliders could be expected within 5NM of the route. The NOTAM had detailed the route height-band of 1500-5000ft AGL, and the NOTAM had been issued to be applicable from the surface to 6000ft AMSL. Additionally, some

⁷ The vertical extent of NOTAM H6801/22 had been from the surface to 6000ft AMSL.

members questioned the merit of notifying that glider pilots 'may' be monitoring the competition frequency.

The Board next turned their attention to the actions of the pilot of the A400M. Members noted that the NOTAM detailing the cross-country route had reportedly not been available to the pilot when they had checked their mission planning system at 1000 (**CF1**). During discussions, it did not become clear to members why that had been the case. Notwithstanding that these details had not been available to the pilot of the A400M, it was noted that they had planned to transit the area at a lower height than the gliders had been expected to have been. The EC device fitted to the A400M would not have been expected to have detected the presence of the LS3A (**CF3**) and, with neither pilot being in receipt of an ATS, the pilot of the A400M had not had any situational awareness of the LS3A (**CF2**). The crew of the A400M had reportedly sighted some gliders, but the Board agreed that the pilot of the A400M had not visually acquired the LS3A (**CF4**).

When determining the risk, the Board agreed that safety had been degraded, but members were satisfied that there had been no risk of collision. Consequently, the Board assigned a Risk Category C to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2022195				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Flight Elements				
• Tactical Planning and Execution				
1	Organisational	• Flight Planning Information Sources	An event involving incorrect flight planning sources during the preparation for a flight.	
• 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
• Electronic Warning System Operation and Compliance				
3	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				
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
5	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 Assessment⁸

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

⁸ 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 the pilot of the A400M had not been aware of NOTAM H6801/22 (detailing the day’s competition routing) as part of their pre-flight planning.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither pilot had had Situational Awareness of the presence of the other.

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.

