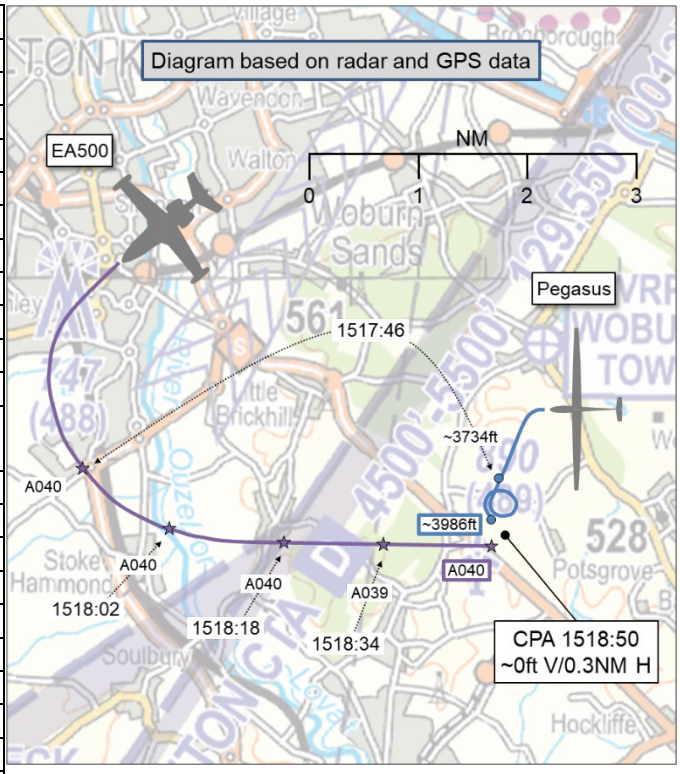
AIRPROX REPORT No 2023213

Date: 09 Sep 2023 Time: 1519Z Position: 5158N 00038W Location: 3NM N Leighton Buzzard

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Pegasus	EA500
Operator	Civ Gld	Civ Comm
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	IFR
Service	None	Traffic
Provider	N/A	Luton Radar
Altitude/FL	~3986ft	4000ft
Transponder	Not fitted	A, C, S+
Reported		
Colours	White, red	Grey
Lighting	None	Landing, strobe, beacon, nav, wigwag
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	3500ft	NK
Altimeter	QFE (996hPa)	QNH (1015hPa)
Heading	"*Thermalling*"	NK
Speed	50kt	210kt
ACAS/TAS	FLARM	TCAS I
Alert	None	None
Separation at CPA		
Reported	100ft V/0.3NM H	300ft V/3NM H
Recorded	~0ft V/0.3NM H	



THE PEGASUS PILOT reports that they had taken an aerotow launch from [their gliding site] at 1531. Due to the good conditions, they gained sufficient height to explore the Bletchley and Woburn areas, but stayed within gliding range of the club. Flying below CTA6 of Luton Class D [airspace], they stayed under 4500ft QNH. They briefly crossed into 5500ft airspace near Bletchley and then returned to below CTA6 where they soared for a bit longer.

At 1618, while thermalling SSW of Woburn, at around 3500ft 996hPa QFE (just over 4000ft QNH), they saw a private jet passing by quickly at the same height. It was not so close that it would have required them to have taken collision avoidance action, but had they been much closer they would have had no time to have reacted. [The pilot of the Pegasus commented that] they had only sighted it once it was at their level. They saw the jet passing and flying away, and they continued turning left.

They had been monitoring Cranfield's frequency when they were closer to their feather, but were not listening to them anymore as they were closer to Leighton Buzzard and didn't think they would need to contact them for traffic awareness. [They opined that] while it's easier to spot piston engine GA aircraft, a small jet flies much faster.

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

THE EA500 PILOT reports that, after departing single-pilot [from their take-off airfield], they were handed-over to Luton Radar who gave them a radar heading to fly under a Traffic Service and IFR flight plan. They were then cleared to join controlled airspace on that heading. During the time they were outside controlled airspace and, having flown VFR quite a bit before, they deliberately reduced their speed to ensure increased reaction time if there had been any traffic. They also intentionally left all external lights on, including strobes, wig/wag recognition lights and landing lights.

They saw the glider (on the left, 9 o'clock high) and, whilst relatively close, they monitored it and believed there to have been no risk of conflict on their current course. They also reported this to Luton Radar, who advised that they could not see any traffic on their screen, so they assumed the glider was not TCAS equipped. As such, they continued on-course, monitoring the traffic, and were shortly then given a climb into controlled airspace.

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

THE CRANFIELD CONTROLLER reports that they do not recall an Airprox being reported to them at the time. They do not have a definite recollection of the [EA500].

THE LUTON RADAR CONTROLLER reports that, during a handover between controllers, [the pilot of the EA500] reported a glider off their left wing. There was no other mention of the glider, and the pilot did not say that they were concerned about the glider. [The Luton Radar controller] believes that they replied "*Roger*" and, as nothing was on the radar and the pilot had not continued with further information, they continued with the final part of the handover. The incoming controller did not remember any further mention of the glider once the handover had been completed.

The Luton Radar controller does not recall if [the pilot of the EA500] was on a Traffic Service or a reduced Traffic Service but believes it to have been operating outside CAS in the vicinity of Leighton Buzzard, near the London Gliding Club at Dunstable Downs. [They opine that] gliders are often not visible on radar. The incoming controller did not recall any mention of the glider once the handover had completed.

Factual Background

The weather at Luton was recorded as follows:

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METAR EGGW 091520Z AUTO 26005KT 190V290 9999 NCD 30/16 Q1016
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Analysis and Investigation

CRANFIELD INVESTIGATION reports that [the pilot of the EA500 had been given] an instruction to route on-track to WCO climbing to 4000ft. Communication and control was transferred to Luton Radar at 1516 when the aircraft was passing 3500ft.

FPS indicated that no glider pilots had received a service from Cranfield that day, ADS-B recordings showed no conflicting traffic when [the pilot of the EA500] was on Cranfield's frequency.

NATS SAFETY INVESTIGATIONS

Safety Investigations was informed that the pilot of [the EA500] reported an Airprox with a glider whilst in receipt of a Traffic Service from the Luton Approach controller. The pilot reported sighting a glider off their left wing, however, did not add any further details and did not report an Airprox whilst in communication with the Luton Approach controller.

The pilot of [the EA500] called on the Luton Approach (GW APP) frequency at 1516:41. Following identification, the GW APP controller issued the pilot with a Traffic Service, a turn onto heading 090° and passed a clearance to join controlled airspace which was read-back correctly by the pilot.

At the time that the turn was issued there were three contacts visible on radar within the vicinity of [the EA500]; a primary-only contact 2.7NM to the west; an aircraft squawking 7000 with an indicated altitude of 2100ft, 3.0NM to the south-southeast and an aircraft squawking 5025 (Farnborough LARS North) indicating altitude 1600ft, 3.6NM to the east. All three of these aircraft were tracking in a south-westerly direction.

As defined in CAP774, under the terms of a Traffic Service; '*The controller shall pass Traffic Information on relevant traffic, and shall update the Traffic Information if it continues to constitute a*

definite hazard, or if requested by the pilot. However, high controller workload and RTF loading may reduce the ability of the controller to pass Traffic Information, and the timeliness of such information. Traffic is normally considered to be relevant when, in the judgement of the controller, the conflicting aircraft's observed flight profile indicates that it will pass within 3NM and, where level information is available, 3000ft of the aircraft in receipt of the Traffic Service or its level-band if manoeuvring within a level block. However, controllers may also use their judgment to decide on occasions when such traffic is not relevant, e.g. passing behind or within the parameters but diverging.'

A primary-only radar contact appeared on radar at 1516:42, 4NM to the south-east of [the EA500]. The contact was intermittent and appeared to be moving erratically, briefly becoming consistent and tracking in a south-southwesterly direction and disappearing from radar at 1518:11.

The GW INT controller issued a clearance to climb to 5000ft to the pilot of [the EA500] at 1518:25 and, following a correct readback, passed further routeing information to the pilot at 1518:34.

The pilot responded by asking the controller to "*say again*" at 1518:47. Following the repeat, the pilot asked to confirm what service they were under and reported that they had "*just had a glider off our left wing*" at 1519:04.

It is believed that the pilot's request to "*say again*" was the approximate time of CPA (Figure 1), as [the EA500] passed the position where the intermittent primary contact had previously disappeared.

The controller responded by acknowledging the pilot, informed them that gliders don't usually display on radar and passed Traffic Information on two contacts ahead which were "*well below*". The pilot of [the EA500] did not make any further mention of the encounter and did not report an Airprox on the frequency.

Conclusion: The Airprox occurred when [the pilots of the EA500 and Pegasus] flew into proximity whilst operating outside controlled airspace. The pilot of [the EA500] was in receipt of a Traffic Service. [The Pegasus] was not visible on radar at the reported time of the Airprox.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and the EA500 could be positively identified from Mode S data (see Figure 1). The pilot of the Pegasus kindly supplied GPS track data for their flight. Several sporadic primary-only returns were observed in the vicinity of the EA500 at the time of the Airprox. These primary-only radar returns broadly aligned with the GPS track of the Pegasus, but the identity of the aircraft could not be verified.

The diagram was constructed and the separation at CPA determined by combining the different data sources.

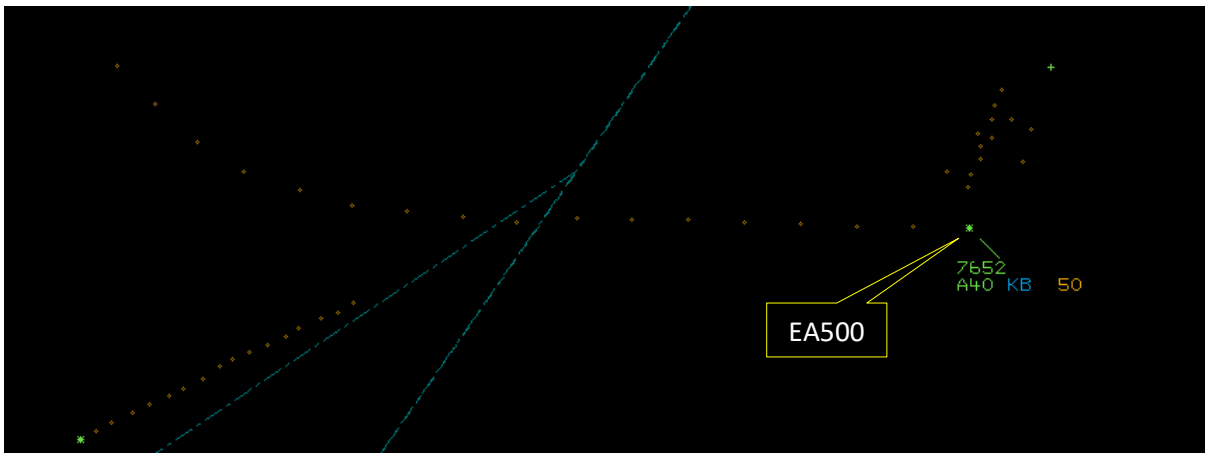


Figure 1 – CPA at 1518:50

The Pegasus and EA500 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 EA500 pilot was required to give way to the Pegasus.[2]

Comments

BGA

The Pegasus pilot wisely chose to monitor the Cranfield ATSU channel while close to the route of Cranfield departures, but if the necessary Flight Radio Telephony Operator's Licence (FRTOL) is held and cockpit workload permits, taking a service from Cranfield could have given both the Cranfield controller and EA500 pilot SA on the glider (and vice-versa).

ATSUs near Dunstable and other busy gliding sites may wish to install Flight Information Displays that provide instantaneous SA on aircraft carrying the EC system fitted to almost all gliders (including this Pegasus).

Summary

An Airprox was reported when a Pegasus and an EA500 flew into proximity 3NM north of Leighton Buzzard at 1519Z on Saturday 9th September 2023. The pilot of the Pegasus had been operating under VFR in VMC, not in receipt of an ATS. The pilot of the EA500 had been operating under IFR in VMC, in receipt of a Traffic Service from Luton Radar.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

The Board first considered the actions of the pilot of the Pegasus. Members noted that they had tuned their radio to the Cranfield frequency earlier in their flight but had re-tuned to the Dunstable Downs frequency when operating in the area north of Leighton Buzzard. Members pointed out that, not only would the pilot of the Pegasus have been better served to have continued to monitor the Cranfield frequency, they may also have gained situational awareness of the presence of the EA500 and its pilots intentions had they done so (**CF4**). The EC equipment fitted to the Pegasus would not have been expected to have detected the presence of the EA500 (**CF5**). Notwithstanding, members noted that the pilot of the Pegasus had visually acquired the EA500 in time to have considered that a collision avoidance manoeuvre had not been necessary. Members appreciated that the encounter had caused the pilot of the Pegasus some concern nonetheless (**CF6**).

It was agreed by members that, at the moment of CPA, the pilot of the Pegasus had been well within 10NM of Cranfield and it may have been far more prudent for them to have contacted the Cranfield controller and to have advised them of their intentions (**CF3**). Members were very keen to emphasise that pilots in possession of a FRTOL are strongly recommended to contact the ATSU before flying within 10NM of any aerodrome marked on VFR navigational charts as having instrument approach feathers (such as Cranfield).

Members next considered the actions of the Luton Radar controller and pondered the sporadic primary-only returns in the vicinity of Leighton Buzzard that had been observed on radar. Members were in agreement that, although specific information had not been available to the controller (**CF2**), it may have been prudent to have passed a generic caution to the pilot of the EA500 regarding the contact

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

that had persisted on the radar display for approximately one minute (**CF1**), or to have warned them of possible glider activity in the area into which they were heading.

Turning their attention to the actions of the pilot of the EA500, members agreed that they had not had any situational awareness of the presence of the Pegasus (**CF4**), given that the EC equipment fitted to the EA500 would not have been expected to have detected its presence (**CF5**) and there had been no other information available to them to indicate that the Pegasus had been in the vicinity. It was agreed, however, that the pilot of the EA500 had appreciated the likelihood of encountering traffic in the area and had reduced their speed accordingly. Members noted that the pilot of the EA500 had visually acquired the Pegasus and had assessed that their current course had not posed a risk of conflict.

In consideration of the manner in which the Airprox was initially reported, members wished to remind pilots that the correct procedure is provided in CAP 413 para. 9.12.

Concluding their discussion, members agreed that both pilots had visually acquired the other aircraft in time to have assessed the safest course of action. Members were also in agreement that there had been sufficient horizontal separation between the aircraft that no risk of collision had existed. However, some members were concerned that there had been a reduction in safety margins insofar as neither pilot had had situational awareness of the other and the Luton Radar controller had not had definitive indications on their radar display of any traffic that may have conflicted with the EA500. A vote was conducted and the latter view prevailed – that safety margins had been reduced below the norm. As such, the Board assigned Risk Category C to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2023213			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Situational Awareness and Action			
1	Human Factors	• ANS Traffic Information Provision	Provision of ANS traffic information	TI not provided, inaccurate, inadequate, or late
2	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, no or inaccurate Situational Awareness
	Flight Elements			
	• Tactical Planning and Execution			
3	Human Factors	• Communications by Flight Crew with ANS	An event related to the communications between the flight crew and the air navigation service.	Pilot did not request appropriate ATS service or communicate with appropriate provider
	• Situational Awareness of the Conflicting Aircraft and Action			
4	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			
5	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			
6	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:

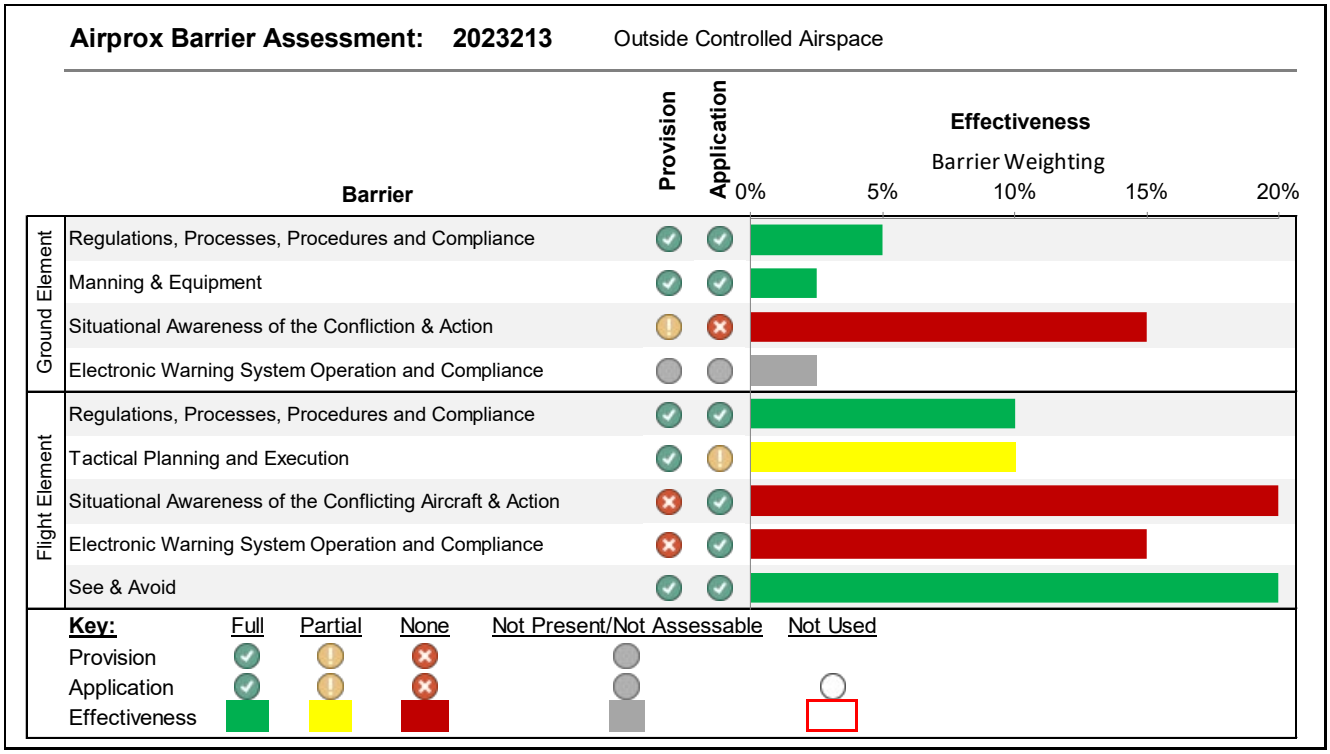
Situational Awareness of the Confliction and Action were assessed as **ineffective** because the Luton controller had not passed Traffic Information on the primary-only contacts observed on radar to the pilot of the EA500.

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because it may have been prudent for the pilot of the Pegasus to have contacted the Cranfield controller to relay their intentions.

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

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 aircraft.



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