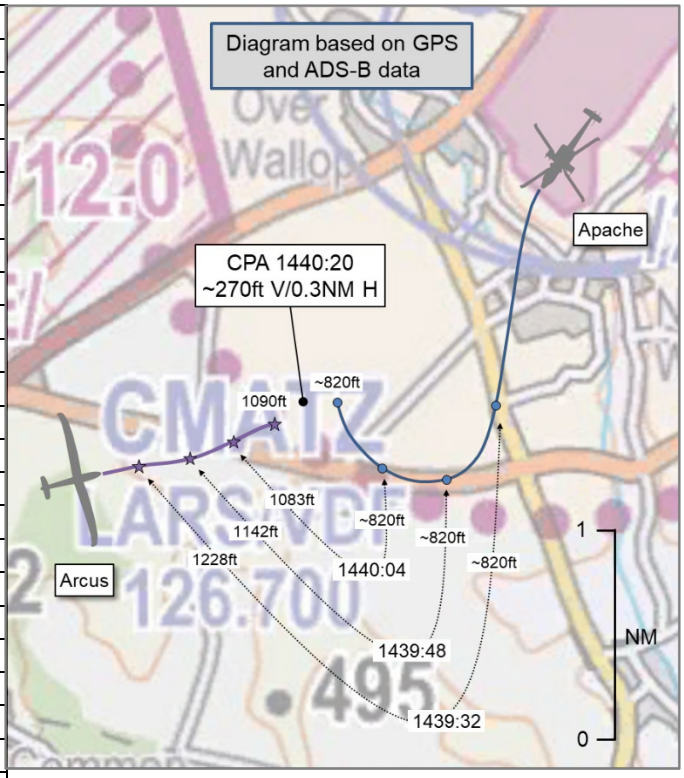
AIRPROX REPORT No 2023045

Date: 03 Apr 2023 Time: 1440Z Position: 5107N 00137W Location: 2NM SW Middle Wallop

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Apache	Arcus
Operator	HQ JHC	Civ Gld
Airspace	Middle Wallop ATZ	Boscombe CMATZ
Class	G	G
Rules	VFR	VFR
Service	ACS	None
Provider	Middle Wallop Tower	N/A
Altitude/FL	~820ft	1090ft
Transponder	A, C, S	A, C, S
Reported		
Colours	Grey, green	White
Lighting	NR	NR
Conditions	VMC	VMC
Visibility	NR	>10km
Altitude/FL	800ft	1100ft
Altimeter	QNH (NR hPa)	QNH (NR hPa)
Heading	NR	"*circling*"
Speed	70kt	50kt
ACAS/TAS	Unknown	PowerFLARM
Alert	Unknown	None
Separation at CPA		
Reported	0ft V/500m H	1700ft V/2NM H
Recorded	~270ft V/0.3NM H	



THE APACHE PILOT reports that [they had been conducting] a non-standard circuit at 800ft AMSL to [helicopter landing area] HALS04. During the right-hand base-leg turn to the final approach they were surprised to have observed a glider co-altitude at approximately 500m distance during their one-engine-inoperative training. The handling pilot/aircraft commander (QHI) observed the glider first of all. The glider activity, and a Gazelle in the radar pattern, were pre-notified by Air Traffic Control. It cannot be recalled whether the glider was presented on the FCR. Screenshots of the ground track covered were taken and saved to the mission planning terminal within Squadron Operations.

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

THE ARCUS PILOT reports that they have no idea why this had been reported as an Airprox. At the time given, they were circling in rising air to the south of Middle Wallop ATZ at 1900ft AMSL. They saw a dark coloured helicopter, presumably an Apache, take off from Middle Wallop heading in their general direction but well below them. When roughly over the airfield boundary, over 2NM away, it turned approximately west and they thought no more about it. They had [an EC device] and ADS-B, and their transponder was squawking 7000. Middle Wallop ATC would therefore have known who they were, exactly where they were and at what height they were at. Visibility was good with bright sunlight and they were circling so the Apache pilot would easily have been able to see them. The Apache did not appear on their [EC device] warning system as it was much too far away to pose any risk. The risk of collision was therefore zero. They talked to Boscombe Down to get Middle Wallop's frequency and then talked to Middle Wallop to get clearance through their ATZ, which they provided.

The pilot assessed the risk of collision as 'None'.

THE MIDDLE WALLOP CONTROLLER reports that, at around 1440, [the pilot of the Apache] was turning final for HALS04 from an extended downwind position just inside the south-western extremity of the ATZ. While commencing the turn, they spotted conflicting traffic on the ATM, squawking 7000

with Mode C, that was around 1NM west of [the Apache's] position, tracking eastbound toward the ATZ and indicating 300ft above, and passed Traffic Information as such. [The pilot of the Apache] continued their right turn onto an extended final for HALS04 with the traffic (a glider) in sight, which made a right turn and entered an orbit just outside the ATZ. At the time, [the Middle Wallop controller] was unsure if the glider had entered the ATZ or not but, from briefly checking the radar replay, it appears to have remained just outside the ATZ.

Subsequent to the Airprox, the pilot of [the Apache] estimated that the minimum separation between the aircraft was around 500m and at a similar level. After checking the flight path recording on the Apache, the pilot was certain that they had remained in the ATZ and believed that the glider traffic may well have been in the ATZ as well, given their proximity. A few minutes after the Airprox, the transponder from the glider turned off while still orbiting just outside the ATZ to the southwest. [The Middle Wallop controller] was visual with the glider at this point and was monitoring its movement as there was a Gazelle inbound to RW35 as radar traffic. They briefly checked the WAM system which indicated that the glider was [Arcus callsign], which was confirmed when the pilot of [the Arcus] called at 1509 to say that they were above the ATZ, but may descend into the ATZ while routing to the northeast. They were provided with a Basic Service, the Wallop QNH and an ATZ transit if required as there was now no conflicting traffic. [The pilot of the Arcus] called changing en-route at 1513 when around 4NM north-northeast of Middle Wallop.

The events described have not been checked for accuracy against the appropriate RTF recording.

Factual Background

The weather at Middle Wallop was recorded as follows:

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METAR EGVP 031450Z 10009KT 9999 FEW037 12/02 Q1027 NOSIG RMK BLU BLU
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Analysis and Investigation

NATS Unit Investigation

Having interviewed the controller involved, the controller confirmed the initial report was an accurate sequence of events.

- The controller was asked [if they] could confirm the glider entered the ATZ.
- The statement from the pilot of the Apache helicopter was taken from their DASOR.
- The handling pilot/aircraft commander (QHI) observed the glider first.
- The glider activity and a Gazelle in the radar pattern were pre-notified by Air Traffic Control.

In conclusion, the controller confirmed that attempts were made to contact the inbound aircraft by direct transmission and through co-ordination with an adjacent aerodrome (Boscombe Down). Neither were successful.

The radar image showed that the glider had been traveling up from the southwest past Boscombe ATZ before passing close to, if not into, Middle Wallop ATZ. The track showed a pattern of spiralling, probably chasing a thermal. [There had been a] lack of communication with two ATS units in what is busy airspace for military traffic. [The NATS Unit investigator] was unable to make contact with the glider pilot. The controller exhibited good visual scanning and interactions with the information available on the ATM.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and neither aircraft was observed on radar at the time of CPA. The pilot of the Arcus kindly supplied GPS track data of their flight and the UKAB Secretariat has obtained track data for the Apache. The diagram was constructed and the separation at CPA determined by combining these separate data sources.

At the moment of CPA, the pilot of the Arcus had been descending and turning to the right and appeared to have remained outside the Middle Wallop ATZ. The Arcus pilot flew over the Middle Wallop ATZ at 1506:44, approximately 16min after CPA, and subsequently descended into the ATZ, with permission, as they were crossing.

The Apache and Arcus 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] An aircraft operated on or in the vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in operation.[2]

Comments

JHC

A detailed DASOR investigation was conducted following this event, led by the Air Safety Team at Middle Wallop.

The risk of collision for this incident was low due to the Apache pilot being visual throughout. There are a few inaccuracies/misleading comments from the Arcus pilot that should be noted for the GA community. Middle Wallop ATC does not have ADS-B and could not have used this for controlling purposes even if they did have this information. If a glider pilot is indeed squawking 7000 this does not allow ATC to "know who they were, exactly where they were and at what height they were at". This misinformation is potentially dangerous if this is a common perception within the gliding community. A 7000 squawk is a conspicuity squawk and does not aid identification at all.

As the Apache pilot was manoeuvring in the visual circuit, they had turned off their Fire Control Radar and therefore did not have any traffic avoidance SA within the cockpit. They relied on a visual lookout to spot any conflictions.

BGA

Where the legally-required Flight Radio Telephony Operator's Licence (FRTOL) is held and cockpit workload permits, glider pilots are encouraged to inform the Controlling Aerodrome ATC Unit if flying in a MATZ or CMATZ.

Summary

An Airprox was reported when an Apache and an Arcus flew into proximity 2NM southwest of Middle Wallop at 1440Z on Monday 3rd April 2023. Both pilots were operating under VFR in VMC, the Apache pilot in receipt of an ACS from Middle Wallop and the Arcus pilot not in receipt of an ATS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, GPS and ADS-B track data, reports from the air traffic controller 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 Apache. A member with particular knowledge of military helicopter operations explained that the pilot had been engaged in One Engine Inoperative training and had flown multiple circuits at Middle Wallop. As such, it was considered that their workload in the cockpit had been high when they had been passed a caution by the Middle Wallop controller concerning traffic in the vicinity. The Apache pilot had subsequently visually acquired the Arcus. Members considered the position of the Arcus as provided to the Apache pilot, and where it had been visually acquired, and concluded that this had been, approximately, in the moments just before CPA.

[1] (UK) SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.
[2] (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome. MAA RA 2307 paragraph 17.

Members would return to their deliberations on the relative positions of the aircraft later when they would come to consider the narrative provided by the pilot of the Arcus. Members noted that the separation between the Apache and the Arcus had been such that the pilot of the Apache, whilst concerned by the proximity of the Arcus (**CF5**), had assessed that no avoiding action had been necessary and had elected to continue their circuit.

Turning their attention to the actions of the Middle Wallop controller, members noted that they had noticed unknown traffic on the ATM. This traffic had been displaying a 7000 squawk and had been tracking towards the Middle Wallop ATZ just above the circuit height of the Apache. Members were in agreement that the Middle Wallop controller would not have had any further information regarding the traffic approaching the ATZ but had nevertheless provided sufficient Traffic Information to the pilot of the Apache. The passage of Traffic Information had been timely enough for the Apache pilot to have visually acquired the Arcus and to have considered the safest course of action. Members noted that, once the Apache pilot had identified the traffic as a glider, the Middle Wallop controller had subsequently passed Traffic Information regarding the glider to another pilot that had departed from Middle Wallop shortly afterwards and also to the Middle Wallop Talkdown controller. The Middle Wallop controller had attempted to contact the Arcus pilot on the Middle Wallop frequency without success and members agreed that there had been nothing further that they could have done.

Members next considered the actions of the pilot of the Arcus. Noting that they had been gradually descending, a member with particular knowledge of gliding operations explained that, faced with diminishing lift, a glider pilot would be eagerly seeking another thermal to be able to maintain altitude. In this instance, the recorded track of the Arcus pilot appeared to show that thermal activity had been present to the southwest of the Middle Wallop ATZ at that time. However, members were surprised that the track of the Arcus pilot had taken them through the Boscombe Down CMATZ and to the very edge of the Middle Wallop ATZ without having made contact with either the Boscombe Down or Middle Wallop controllers. With the knowledge that the Arcus had been equipped with a radio and that the pilot of the Arcus had held a licence to operate the radio, members agreed that it would have been most prudent to have made contact with either controller for the benefit of their own Situational Awareness and for that of the controllers and for other pilots in the area (**CF1**). Given that they had been operating in an area marked on navigational charts as having intense helicopter activity, it was considered that the pilot of the Arcus had had generic Situational Awareness of the potential to encounter traffic (**CF2)**.

Members returned to their previous thoughts regarding the relative positions of the aircraft portrayed in the narratives provided by each pilot. The pilot of the Arcus had described their visual acquisition of the Apache as having been when the Apache pilot had made an initial turn after having taken-off. Members noted that the Arcus pilot had been aware that the Apache had been heading west, towards them, but in the Arcus pilot's words "*had thought no more about it*". Members were in agreement that, given that the pilot of the Arcus had not made contact with the Middle Wallop controller and, consequently, had not had specific awareness of the intentions of the Apache pilot, they had not appreciated the potential conflict with the Apache nor the concern that they had caused to the Apache pilot by their presence at the edge of the ATZ (**CF4**). It was surmised that the pilot of the Arcus, having reported the CPA as being 2NM horizontally, had not been aware of the proximity of the Apache that had been tracking toward them and had not been aware of the actual CPA.

Whilst members applauded the fitting of a transponder, radio and an EC device to the Arcus, members wished to highlight that, in this particular encounter, there had been no compatibility with the EC equipment in operation fitted to the Apache (**CF3**). Further, that it must never be assumed that any aircraft would be detected, nor that the intentions of the pilot be gleaned without such having been communicated, no matter how their aircraft might be equipped.

Concluding their deliberations, members were in agreement that it had been the timely passing of Traffic Information by the Middle Wallop controller that had enabled the Apache pilot to have visually acquired the Arcus. Members were satisfied that the separation between the aircraft had been such that there had not been a risk of collision but agreed that there had been a degradation of safety. Members were in agreement that the pilot of the Arcus had, essentially, not shared their responsibility for collision

avoidance equally with the Apache pilot and had operated in such proximity to the Apache as to have created a collision hazard. As such, the Board assigned Risk Category C to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2023045			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Flight Elements			
	• Tactical Planning and Execution			
1	Human Factors	• Accuracy of Communication	Events involving flight crew using inaccurate communication - wrong or incomplete information provided	Ineffective communication of intentions
	• 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	• Lack of Individual Risk Perception	Events involving flight crew not fully appreciating the risk of a particular course of action	Pilot flew close enough to cause concern
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 Assessment[3]

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

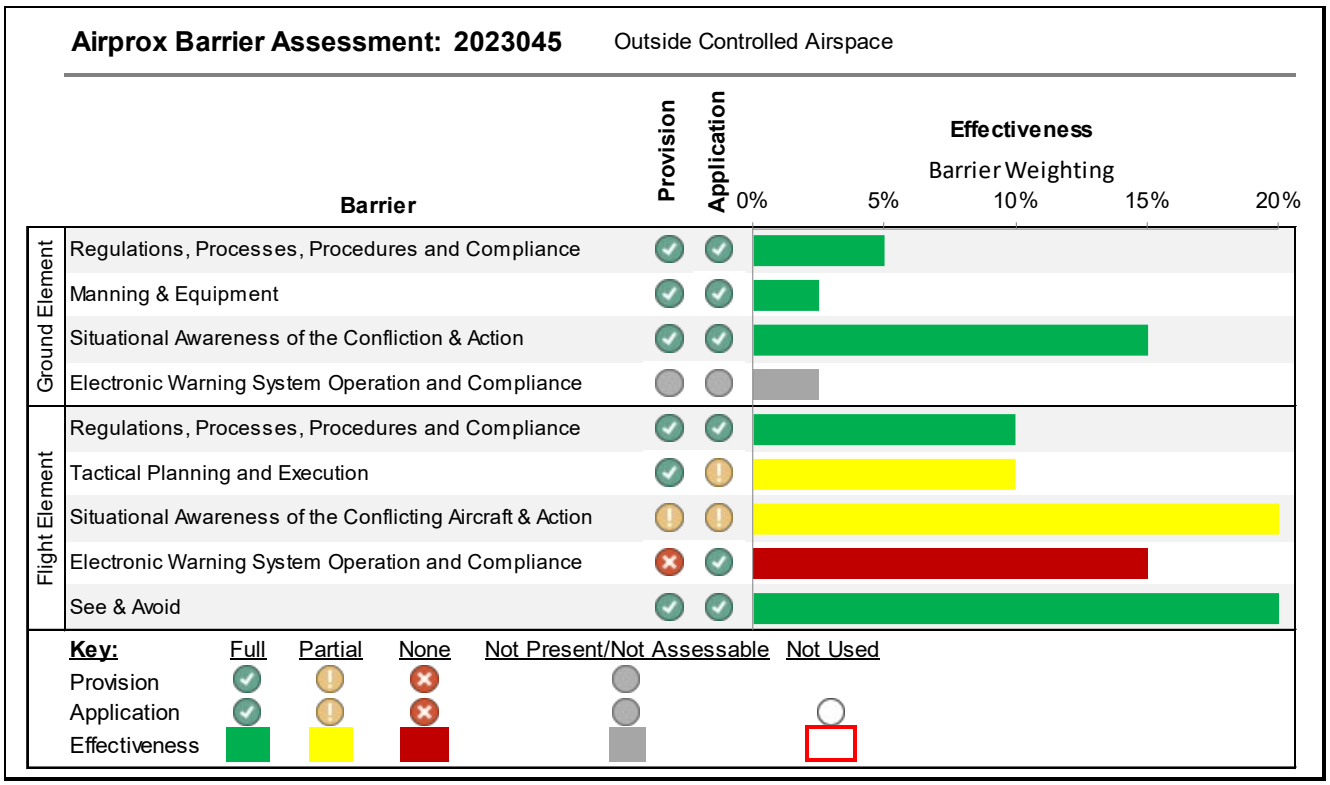
Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the pilot of the Arcus had not transmitted their intention to approach the Middle Wallop ATZ.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the pilot of the Arcus had had generic Situational Awareness of the likelihood of encountering traffic operating in the Boscombe CMATZ and Middle Wallop ATZ.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the EC devices fitted to each aircraft would not have been expected to have detected 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.


Airprox Barrier Assessment: 2023045
Outside Controlled Airspace
Barrier
Provision
Application
Effectiveness
Barrier Weighting
0%
5%
10%
15%
20%
Ground Element
Regulations, Processes, Procedures and Compliance
Manning & Equipment
Situational Awareness of the Confliction & Action
Electronic Warning System Operation and Compliance
Flight Element
Regulations, Processes, Procedures and Compliance
Tactical Planning and Execution
Situational Awareness of the Conflicting Aircraft & Action
Electronic Warning System Operation and Compliance
See & Avoid
Key:
Full
Partial
None
Not Present/Not Assessable
Not Used
Provision
Application
Effectiveness