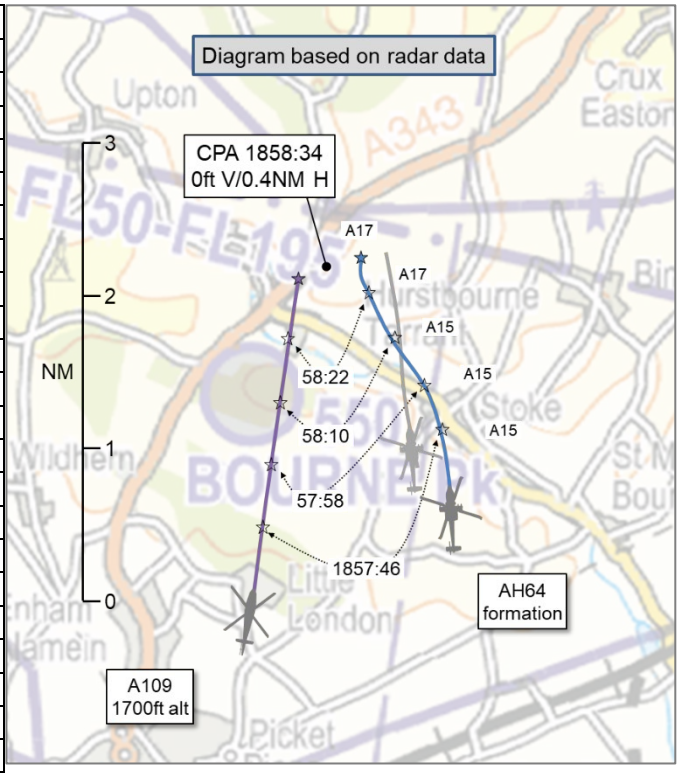
AIRPROX REPORT No 2024276

Date: 12 Nov 2024 Time: 1859Z (Night) Position: 5117N 00127W Location: Hurstbourne Tarrant

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	AH64	A109
Operator	HQ JAC	Civ Comm
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic (PSR only)	Basic
Provider	Middle Wallop	Farnborough
Altitude/FL	1700ft	1700ft
Transponder	A, C, S	A, C, S
Reported		
Colours	Green	Blue
Lighting	Formation, anti-col	Nav, anti-col
Conditions	VMC	VMC
Visibility	NR	>10km
Altitude/FL	1500ft	1750ft
Altimeter	QNH (NR hPa)	QNH (NK hPa)
Heading	360°	~010°
Speed	100kt	~140kt
ACAS/TAS	Not fitted	Not fitted
Separation at CPA		
Reported	NR	~150ft V/1000m H
Recorded	0ft V/0.4NM (~740m) H	



THE AH64 PILOT reports leading a formation of 2 x AH64 conducting pairs refresher training in Night Rotary Region (NRR) 1, operating on a tow-line running south-to-north between Andover and Hungerford. [The other AH64 pilot] was cleared to approach from echelon right for an excessive closure demonstration. The manoeuvre saw [it] climb over and through their 6 o'clock to establish echelon left with 200ft vertical separation [above]. On resuming heading 360°, [they] observed an unusual strobe pattern converging onto them from the left at a similar altitude, tracking north at an estimated range of 300m from [the other AH64]. [They] called the aircraft to [the other AH64 pilot, who] turned back onto 360° to avoid further converging with the unidentified aircraft. An awareness call was made to the formation by [the other AH64] handling pilot. Upon interrogation with the aircraft's [targeting sensors], [the unidentified aircraft] was assessed to be an A109. The A109 passed at speed with no apparent change in direction or altitude. A call was made to Middle Wallop Approach, who confirmed they were not in communication with the unidentified aircraft but suggested, through checking unofficial means, that the aircraft was an A109. The formation resumed and the sortie completed without further incident. After flight, [a web-based flight tracking application] was interrogated which plotted the A109 entering the NRR at 1849Z. Its track routed due north, on a direct converging track with the [AH64] formation, for 9min. There was no observable deviation from its track or altitude prior to, or as a result of coming into proximity with, the formation. Additional factors: [the AH64 formation] was operating under a Basic Service, speaking to Middle Wallop Approach on UHF. Middle Wallop had an unserviceable SSR. The formation had one serviceable Fire Control Radar which was in use throughout. Each aircraft was carrying one PED with the capability to display ADS-B in information, however, this was not enabled or cleared for use [at the time].

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

THE A109 PILOT reports in transit when Farnborough informed them of traffic (2 military helicopters). After being notified, they established visual contact and reported back to Farnborough as such. When they were initially seen they believed they were on a converging course from the right but they also

believed they would cross well ahead. They appeared to manoeuvre and changed speed, which left them on a converging course. The A109 pilot started to manoeuvre to stay clear at which point they also manoeuvred and changed speed significantly so they crossed behind. The A109 pilot continued on to their destination. Visual contact was maintained from initial sighting until they fell well behind.

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

THE MIDDLE WALLOP CONTROLLER reports that at the time of the event the only aircraft on Approach frequency were [the AH64 formation] in receipt of a Basic Service. At approximately 1900 the controller received a call from [an AH64 pilot] asking "Do you have other aircraft on approach frequency?" to which the controller replied "No". [The AH64 pilot] then informed the controller, "An aircraft has just flown through our formation".

THE FARNBOROUGH OJTI reports working as OJTI to a 'mid-hours' trainee. Traffic Information was passed to [A109 C/S] who reported visual and remained clear. The [AH64s] were not receiving a service from Farnborough and the OJTI had no further recollection of the event.

Factual Background

The weather at Middle Wallop was recorded as follows:

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METAR EGVP 121920Z 02012KT 9999 BKN027 BKN036 09/05 Q1036 NOSIG RMK BLU BLU=
METAR EGVP 121850Z 02011KT 9999 BKN036 09/05 Q1035 NOSIG RMK BLU BLU=
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The UK AIP Part 2 (ENR) 2.2 (Other Regulated Airspace) section 2 (Military Aerodrome Traffic Zones) provides the following guidance:

> 2.1.1 At certain military aerodromes, Military Aerodrome Traffic Zones (MATZ) have been established to provide a volume of airspace within which increased protection may be given to aircraft in the critical stages of circuit, approach and climb-out. A MATZ acquires the status of the airspace classification within which it lies; however, additional mandatory ATC requirements are invariably specified for military pilots. In the airspace outside the Aerodrome Traffic Zone (ATZ), observation of MATZ procedures is not compulsory for civil pilots.
>
> 2.2.2 […]. In the interests of flight safety and good airmanship, it is strongly recommended that all pilots not previously receiving an ATS obtain a MATZ penetration 'approval' from the MATZ operating authority prior to entering a MATZ. It is recognised that most MATZ crossing/penetration 'approvals' will be obtained via RTF by pilots in receipt of a UK FIS; however, it should be possible for a pilot to request a MATZ crossing/penetration 'approval' without the use of radio (i.e. by prior agreement via telephone). In accordance with Class G Airspace classification and the rules of UK FIS, pilots are ultimately responsible for maintaining their own separation against other airspace users within the MATZ. […].

Analysis and Investigation

UKAB Secretariat

The AH64 and A109 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 overtaking then the AH64 pilots had right of way and the A109 pilot was required to keep out of the way of the other aircraft by altering course to the right.[2]

NATS Ltd Occurrence Investigation

Executive Summary: At the time of event the only aircraft on Middle Wallop Approach frequency were a pair of Apaches ([AH64 formation C/S] formation) flying in formation in receipt of a Basic Service. At approximately 1900, the controller received a call from [AH64 formation C/S] asking "Do

[1] (UK) SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.
[2] (UK) SERA.3210 Right-of-way (c)(3) Overtaking. MAA RA 2307 paragraph 14.

you have other aircraft were on approach frequency"? To which the controller replied "No". [AH64 formation C/S] then informed the controller, "An aircraft has just flown through our formation".

Farnborough LARS transcript:

1850:10 "[A109 C/S], *squawk 0430 Basic service, Farnborough QNH 1035*"
Read back as "*7430, and 1035* [A109 C/S]"

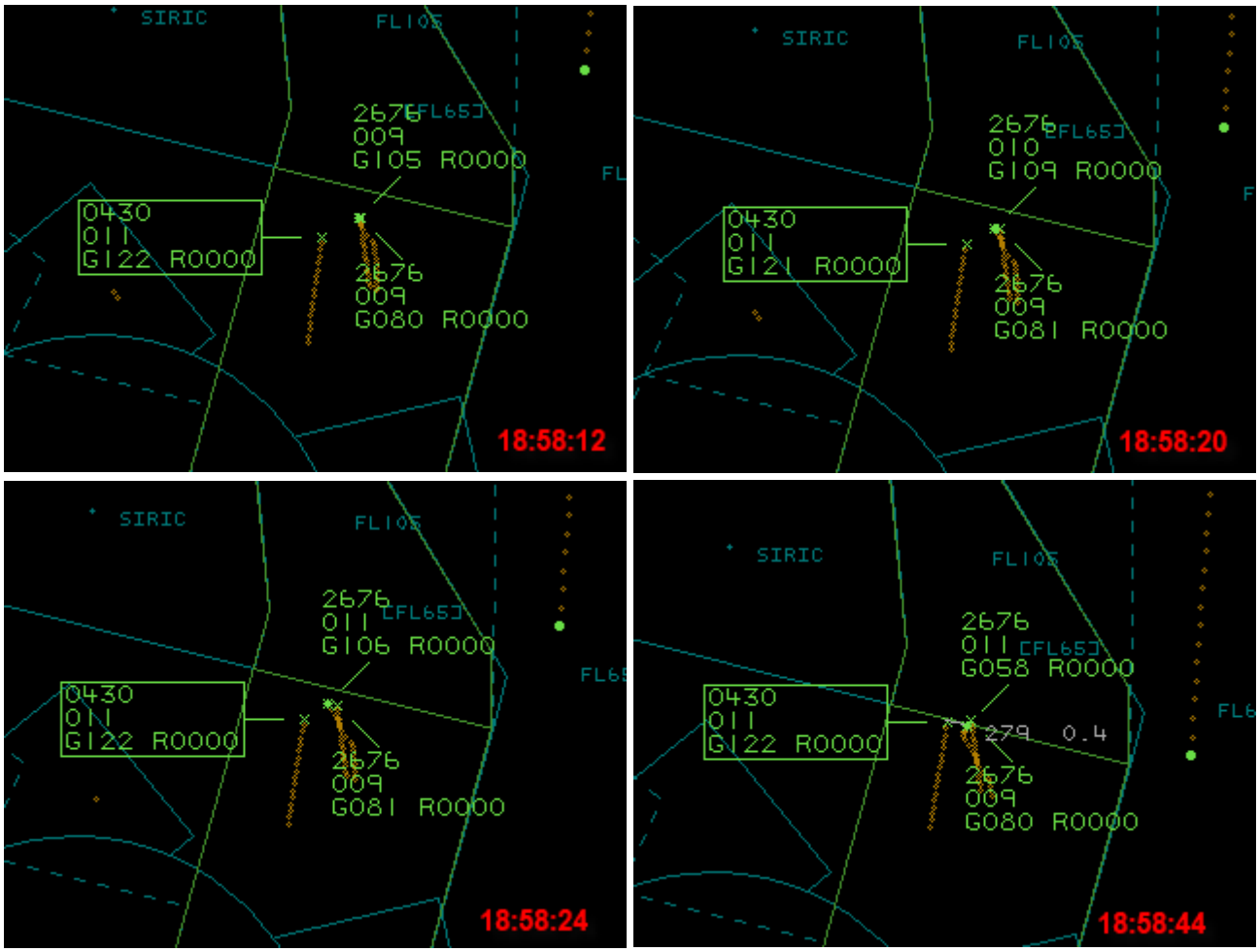
1852:10 "[A109 C/S] *confirm squawking 0430 nothing shown on radar*". "*Was that for* [A109 C/S]?" "*Affirm, just confirm squawking 0430 nothing shown on radar*." "*0430* [A109 C/S]"

1855:45 (new controller) "[A109 C/S], *there is some military traffic manoeuvring northeast of you by a couple of miles similar level*" "*I was visual with that traffic, I've lost them in the … yeah so I've got them back* [A109 C/S]"

1900:41 "[A109 C/S] *requesting frequency change to Oxford 125.090 please*?" "[A109 C/S] *roger, squawk conspicuity, 125.090 goodbye*." "*Squawk Conspicuity and free call Oxford, thanks for your help, goodbye* [A109 C/S]"

All aircraft involved were under a Basic Service in class G airspace and retained responsibility for terrain and traffic avoidance.

Investigation: LARS screen shots in attached document [reproduced below]. DASOR [DASOR reference number] ongoing.



Conclusions: No reports on either frequency of an Airprox or avoiding action being taken. The Apache ([AH64 No.1 C/S]) did perform pre-emptive manoeuvres to avoid the closing aircraft. Both

Apache pilots stated that the A109 did not change speed, direction or height before during or after the incident. The A109 [pilot] had received and confirmed visual on the Apache formation minutes prior (1855:45) but then did nothing with this information. All [pilots] involved were under a Basic service in Class G airspace and retained responsibility for terrain and traffic avoidance.

Comments

JAC

The manoeuvre conducted is an important demonstration to show a student the difficulty in pick-up rates of closure flying on the monocular FLIR system. For a period of time, lookout during the demonstration would have been solely on the lead aircraft with limited-to-no lookout to the rear. The formation was operating under a Basic Service from Middle Wallop and therefore solely responsible for terrain and traffic avoidance.

Despite the serviceability at Middle Wallop (PSR only), the crews would still be expecting military aircraft to check-in on Middle Wallop Approach in that area for deconfliction, and the formation were monitoring the LL Common Frequency, as the main night VFR threat was assessed as the local HEMS, who normally make blind calls on the frequency. It is surprising the A109 pilot made no attempt to amend their converging course even after Traffic Information of 2 x military [helicopters] was passed and subsequently reporting visual before CPA.

Crews noted that ADS-B in may have aided in building situational awareness of the A109 (it is not known whether the A109 had ADS-B out) prior to commencing the demo. The AH64s each carry a PED which has the capability for ADS-B but this was not enabled. An investigation recommendation has been [made] to look at the use of ADS-B as a barrier to MAC.

Summary

An Airprox was reported when an AH64 formation and an A109 flew into proximity near Hurstbourne Tarrant at 1859Z on Tuesday 12th November 2024. The pilots were operating under VFR in VMC in receipt of a Basic Service, the AH64 pilots from Middle Wallop (and service limited to PSR only) and the A109 pilot from Farnborough.

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.

The Board first discussed the provision of the FIS to the AH64 crews and the wisdom of maintaining a PSR only Basic Service with Middle Wallop when a full Basic Service, or indeed Traffic Service, had been available from Farnborough. The JAC advisor noted that the UK Military Low Flying Handbook stipulated that military rotary wing pilots operating in NRR1 should obtain a service from Middle Wallop when operating west of the A34 road. This had been done to mitigate mid-air collision by allocating a section of the NRR1 to each of the 3 military helicopter Main Operating Bases; Middle Wallop to the west of the A34, Odiham to the east of the A34 and Benson to the north of the M4. The basis of this regulation had been that the threat of mid-air collision between military helicopters operating at low-level at night, potentially with lights out due to tactical considerations, had been greater than that between military helicopters and civilian helicopters, required to be lit at night, and that deconfliction could be facilitated by being required to operate on a frequency specified by geographical location. The A109 pilot could not be expected to have been aware of this military regulation and had, in any case, obtained a Basic Service from Farnborough and had been given Traffic Information on the AH64 formation, which they had seen. Members discussed the degree to which the A109 pilot could have been considered to have been overtaking the AH64 formation, and consequently the requirement for them to have passed to the right of the AH64s. Members noted that a minimum horizontal separation of 0.4NM by day was not equivalent to such separation by night and that, although the A109 pilot had

maintained visual separation, they had passed in such proximity that there had been no appreciation of the potential for the AH64 formation to have manoeuvred rapidly, even at night and especially as the AH64 formation had had no situational awareness of the approaching A109 (**CF5**).

The Middle Wallop controller had not been required to monitor the AH64 formation under a Basic Service (**CF1**) and, in any case, would not have had aircraft altitude information. The Farnborough STCA had not been utilised due to the aircrafts' SSR codes (**CF2**) but the Farnborough controller had provided Traffic Information in accordance with the provisions of a Basic Service, i.e. that they had 'information that indicates that there is aerial activity in a particular location that may affect a flight' or that they considered 'that a definite risk of collision exists, [and that] a warning shall be issued …'.[3]

The Board noted that, prior to the Airprox, the A109 pilot had transited through the Middle Wallop MATZ but had not contacted the Middle Wallop controller as was advised in the UK AIP ENR 2.2 Section 2. Members acknowledged that there had been no requirement for a civilian pilot to do so, but wondered whether the A109 pilot had been aware of the potential for unlit military helicopters and, without TCAS or a TAS, the consequent requirement to mitigate such a threat in order to conduct their flight safely (**CF3**). A helicopter member questioned why the A109 pilot had elected to transit below MSA at night. Having been passed Traffic Information on the AH64 formation, and having seen them, members wondered why the A109 pilot had elected to pass at such proximity whilst at the same level, that had caused the AH64 pilot to be concern at the potential for mid-air collision (**CF6**). The Board agreed that whilst the A109 pilot had been unconcerned, without an understanding of the AH64 formation's planned manoeuvring they would have been better placed by affording a greater degree of separation (**CF4**). In the event, the subordinate AH64 element pilot had seen the A109 in time to prevent a manoeuvre into conflict, Risk C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024276			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Situational Awareness and Action			
1	Contextual	• ANS Flight Information Provision	Provision of ANS flight information	The ATCO/FISO was not required to monitor the flight under a Basic Service
	• Electronic Warning System Operation and Compliance			
2	Technical	• Conflict Alert System Failure	Conflict Alert System did not function as expected	The Conflict Alert system did not function or was not utilised in this situation
	Flight Elements			
	• Tactical Planning and Execution			
3	Human Factors	• Accuracy of Communication	Events involving flight crew using inaccurate communication - wrong or incomplete information provided	Ineffective communication of intentions
4	Human Factors	• Insufficient Decision/Plan	Events involving flight crew not making a sufficiently detailed decision or plan to meet the needs of the situation	Inadequate plan adaption
	• Situational Awareness of the Conflicting Aircraft and Action			
5	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			
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

[3] CAP774 (UK Flight Information Services), Chapter 2 (Basic Service), paragraphs 2.6 and 2.8.

Degree of Risk: C.

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:

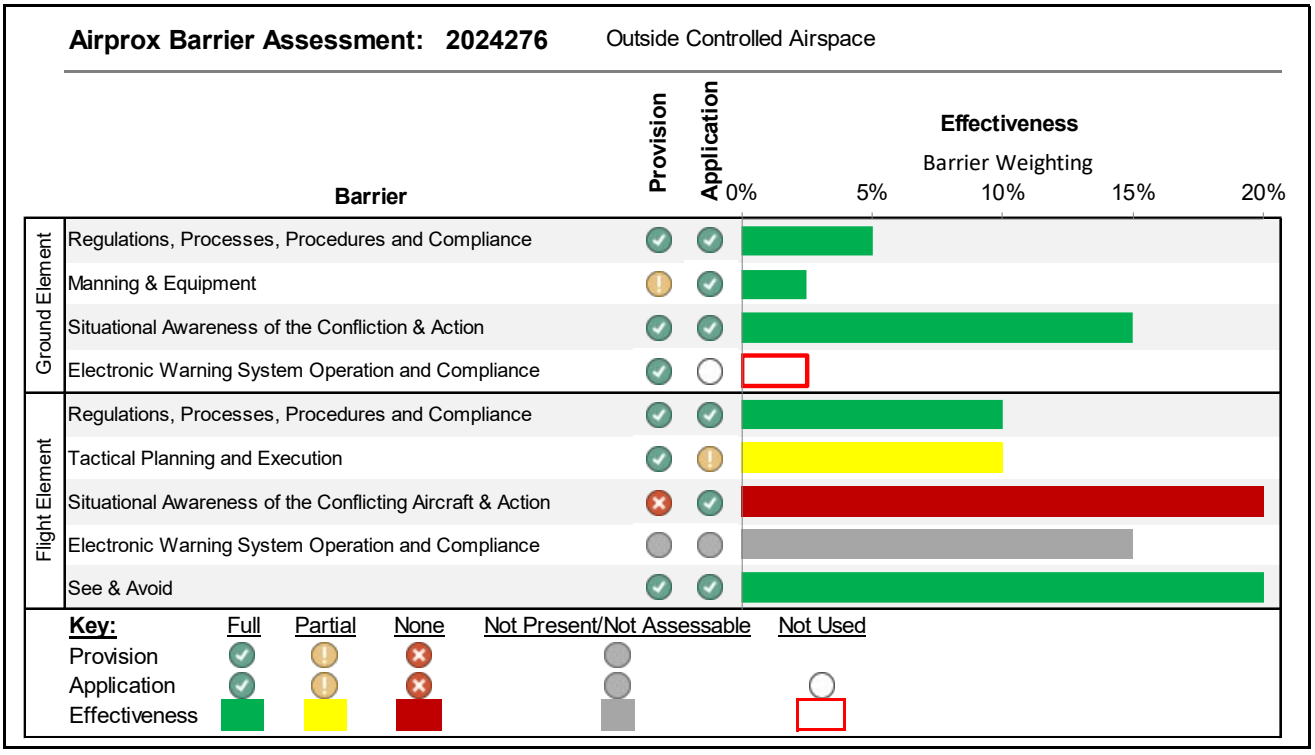
Ground Elements:

Electronic Warning System Operation and Compliance were assessed as **not used** because the A109 squawk had been outside the Farnborough select frame for STCA warning and alert.

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the A109 pilot had elected to overtake the AH64 formation at the same altitude and in such proximity as to cause them concern.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the AH64 crews had had no situational awareness on the A109 until they had sighted it.



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