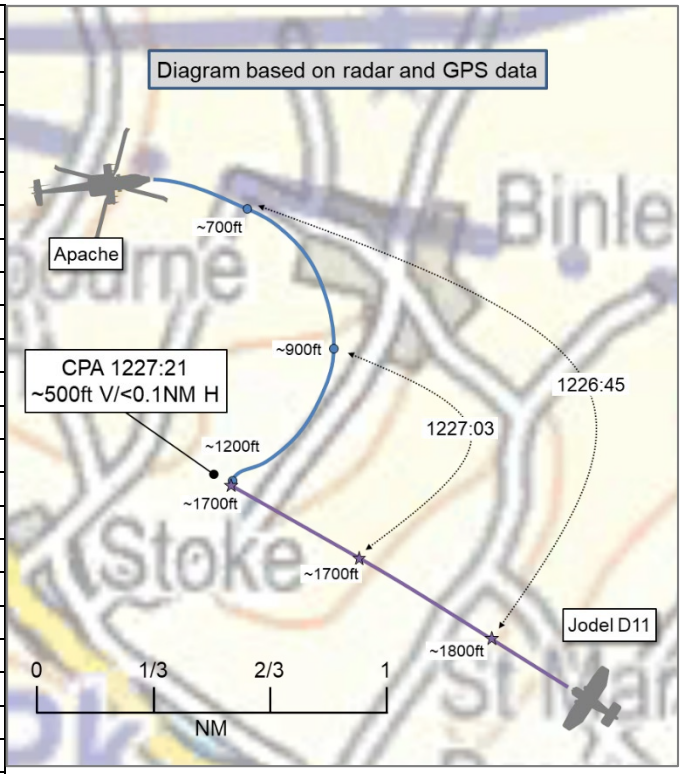
AIRPROX REPORT No 2023067

Date: 25 Apr 2023 Time: 1227Z Position: 5116N 00125W Location: 4NM NE Andover

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Apache	Jodel D11
Operator	HQ JHC	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Basic
Provider	Wallop Approach	Boscombe Down
Altitude/FL	~1200ft	~1700ft
Transponder	A, C, S	A, C, S
Reported		
Colours	Green, grey	Red, white
Lighting	NR	None
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1300ft	2000ft
Altimeter	NR	RPS (1015 hPa)
Heading	NR	304°
Speed	80kt	80kt
ACAS/TAS	Unknown	SkyEcho
Alert	Unknown	None
Separation at CPA		
Reported	100ft V/100m H	20ft V/0NM H
Recorded	~500ft V/<0.1NM H	



THE APACHE PILOT reports that, following completion of their primary tasks on a training sortie, a period of revision was used to complete practice forced landings to a field in the vicinity of NE Andover (near Hurstbourne Tarrant village). Following the climb-out from a flare recovery at 40ft AGL, the Apache was climbed back up to 1500ft AGL to re-attempt the exercise. The Apache was climbed using a continuous turn from the overshoot in order to [visually] clear the area behind the aircraft, having already identified the day as being particularly busy for general aviation. At approximately 1300ft, the HP was looking into the turn whilst the NHP was looking further round into the turn, at which point the HP noticed a light-aircraft (Chipmunk in approximate style) converging from the left, approximately 100-200ft above and <100m laterally. The HP pilot called the light-aircraft and inputted a swift avoiding turn down and left. Upon completing a 180° turn, three aircraft were identified in the vicinity of the exercise area. It was unclear if the light-aircraft [pilot] had witnessed the occurrence.

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

THE JODEL D11 PILOT reports that they had changed frequency to Boscombe Down 126.700MHz and received a Basic Service. The radio was quite active and they could see contacts on their [EC device] overlaid onto SkyDemon. ATC was talking to a [noteworthy] callsign which they assumed [had been a pilot surveying] power lines.

Out of nowhere, an Apache from the north was underneath them, [close enough that they] could have touched it. This was in the area east of Burbage and River Hill. They informed Boscombe Down that an Apache had just flown under them by 20-30ft. The ATC response was 'I told him you were there' [they recalled]. [The Jodel D11 pilot] was not advised that there was something so close. There was a NOTAM published for the area but not activated until later that evening.

The pilot assessed that there had been a risk of collision.

THE MIDDLE WALLOP CONTROLLER reports that [the Apache pilot] was operating NE of Andover on a Basic Service on Wallop Approach. No report was made to Air Traffic over the radio or after the aircraft recovered to Middle Wallop.

THE BOSCOMBE DOWN APPROACH CONTROLLER reports that they believe that they had been the Approach controller working bandboxed frequencies. Due to the time since the event, they have no recollection of what happened. No Airprox was reported on frequency.

THE BOSCOMBE DOWN SUPERVISOR reports that they had been undergoing a routine standards check and had been in the Approach Control Room at the time. They have no recollection of this event and to the best of their recollection, the Approach controller did not mention there had been a close call.

Factual Background

The weather at Middle Wallop was recorded as follows:

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METAR EGVP 251220Z 06007KT CAVOK 11/M03 Q1018 NOSIG RMK BLU BLU
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Analysis and Investigation

Military ATM

Utilising occurrence reports and information from the local investigation, outlined below are the key events that preceded the Airprox. Where available, they are supported by screenshots to indicate the positions of the relevant aircraft at each stage. The screenshots are taken from NATS radars as Unit radar recording is currently not available at MOD Boscombe Down. As NATS radars are not available to the controllers, they may not be entirely representative of what the controller was presented.

Whilst the Jodel D11 was displayed throughout on NATS radars, the Apache was not displayed until 1227:18, 4sec prior to the CPA. It is unknown whether the Boscombe Down Watchman radar displayed the Apache to the Boscombe Down Zone controller. However, based upon discussion with the unit regarding the radar coverage in that area, it is expected that the Apache would have displayed only when operating above 1000ft AGL.

The Boscombe Down Zone position was bandboxed with the Boscombe Down Approach position at the time of the Airprox. The bandboxed operation was in accordance with local orders and being conducted due to there being no Boscombe Down activity and a low intensity of the Lower Airspace Radar Service task.

Sequence of Events:

At 1224:42, the pilot of the Jodel D11 contacted the Boscombe Down Zone controller, informing them of their routeing and requesting a Basic Service. A Boscombe Down conspicuity SSR code of 2650 was issued and a Basic Service was provided along with the Portland QNH.

At 1226:47, the Boscombe Down Zone controller provided Traffic Information to the Jodel D11 pilot, "*traffic believed to be you has traffic north one mile, tracking south, indicating nine hundred feet below, climbing*" (see Figure 1). The Traffic Information was not acknowledged by the pilot of the Jodel D11.

CPA [between the Apache and the Jodel D11] was measured as 0.1NM and 500ft.

1227:24, the Jodel D11 pilot reported to the Boscombe Down Zone controller "*I've just had an Apache go underneath me about twenty foot!*". This report was acknowledged and responded to at 1227:36 by the Boscombe Down Zone controller "*Roger, I did call that traffic believed to be to you*".

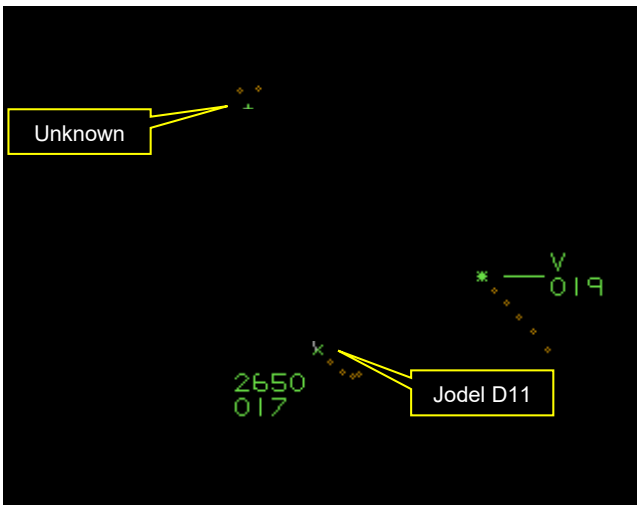


Figure 1 – 1226:47. Traffic Information was provided by the Boscombe Down Zone controller.

Local BM Investigation:

As a result of the Airprox not being declared to the Boscombe Down Zone controller, and then subsequent delay in notification, the controller's recollection of the event was very limited. Traffic Information was provided to the pilot of the Jodel D11 regarding low-level traffic in the vicinity, with the presumption being that that Traffic Information was regarding the Apache. Without a local radar replay function, this presumption could not be confirmed, nor could clarification on whether the Apache was displayed on radar. For these reasons, MOD Boscombe Down was unable to conduct a local investigation that could identify the cause of the Airprox.

2 Gp BM Analysis:

Without a radar replay that accurately illustrates the position of both the Jodel D11 and Apache in the period prior to the Airprox, a conclusive summary regarding the controller's actions cannot be made. Based on the evidence available and presumption that the Traffic Information that was provided was regarding the Apache, then the Boscombe Down Zone controller fulfilled the requirements of the Basic Service being provided. No further BM related causal/aggravating factors were identified by 2 Gp BM.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and both aircraft could be positively identified from Mode S data. Radar returns from the Apache were observed once it had climbed above approximately 1000ft. The aircraft were displayed on radar to have been at Flight Levels. An appropriate conversion factor was applied to determine their altitude.

The pilot of the Jodel D11 had kindly supplied GPS track data for their flight. The UKAB Secretariat has obtained GPS track data for the Apache. The diagram was constructed and the CPA determined by combining these separate data sources.

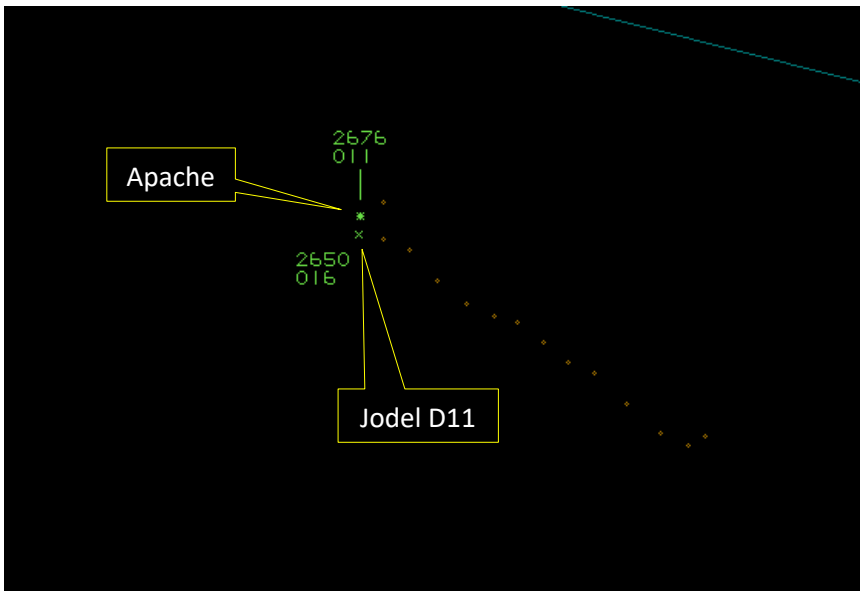


Figure 2 – CPA at 1227:21

The Apache and Jodel D11 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 Jodel D11 pilot was required to give way to the Apache.[2]

Comments

JHC

This incident shows the dangers of operating in Class G airspace. At the time of this Airprox, JHC aircraft were not permitted to use Salisbury Plain Training Area (SPTA) as they normally would to conduct PFLs into fields. As a direct result of this incident, all Apache aircraft were directed to no longer conduct general-handling (GH) sorties in Class G airspace. Fortunately, there is a gradual re-opening of SPTA, so there should not be a repeat of this incident. This re-opening allows military aircraft to conduct GH sorties away from mixed-aviation in a fairly sterile environment.

AOPA

An effective lookout, including above and below, is of paramount importance. As in this case, helicopters in the climb from below can be difficult to see as they blend in with the scenery below. If they are not sighted, ask the ATS provider for more information. The reporting of an Airprox on frequency, when it occurs, will assist with the subsequent investigation.

Summary

An Airprox was reported when an Apache and a Jodel D11 flew into proximity 4NM northeast of Andover at 1227Z on Tuesday 25th April 2023. Both pilots were operating under VFR in VMC, the Apache pilot in receipt of a Basic Service from Middle Wallop Approach and the Jodel D11 pilot in receipt of a Basic Service from Boscombe Down.

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.

[1] (UK) SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.
[2] (UK) SERA.3210 Right-of-way (c)(2) Converging. MAA RA 2307 paragraph 12.

The Board first considered the actions of the pilot of the Apache. A member with specific knowledge of military helicopter operations explained that particular circumstances had been such that the pilot of the Apache had, unusually, conducted this sortie in Class G airspace. Members referred to the pilot's narrative report and noted that they had been aware that the area had been 'particularly busy for general aviation'. Noting that the pilot of the Apache had been operating under a Basic Service from Middle Wallop, members suggested that a higher level of service may have been a more prudent choice. There had not been a requirement for the Middle Wallop controller to have monitored the flight under the terms of a Basic Service (**CF1**) and members had no further comments to make on the Middle Wallop controller's actions.

Members agreed that the pilot of the Apache had not had situational awareness of the Jodel D11 (**CF3**) until it was sighted during their climbing turn. Given that immediate avoiding action had been necessary, members concluded that the Jodel D11 had been visually acquired late (**CF5**). Nevertheless, members commended the Apache pilot's quick reaction to have increased separation.

In consideration of the aspect of electronic conspicuity (EC), members noted that the equipment fitted to the Jodel D11 would not have been expected to have detected the presence of the Apache. Similarly, the equipment fitted to the Apache (in operation at the time) would not have been expected to have detected the presence of the Jodel D11 (**CF4**).

Turning their attention to the actions of the pilot of the Jodel D11, members noted that they had been operating under a Basic Service from Boscombe Down. Acknowledging that the Boscombe Down Zone controller had not been required to have monitored the flight, they had nonetheless passed Traffic Information to the pilot of the Jodel D11. However, the pilot of the Jodel D11 reported that they had not been aware that Traffic Information had been passed. Consequently, members were in agreement that the pilot of the Jodel D11 had not appropriately monitored communications (**CF2**), and had not been aware of the presence of the Apache. Members noted that it had not been until the moment of CPA that the Apache had been sighted, and that that effectively constituted a non-sighting (**CF6**).

Members next considered the actions of the Boscombe Zone controller, and wondered whether the Apache would have been observable on the controller's radar equipment. It was explained to members that an aircraft would, typically, be observable once above 1000ft. Examining the timeline of the event, it was surmised that the Apache may have appeared on the radar screen moments before the Boscombe Zone controller had validated and verified the Jodel D11. Members noted the phrasing used by the controller, viz., "*traffic believed to be you has traffic north one mile, tracking south, indicating nine hundred feet below, climbing*". It could not be conclusively determined that it had been the Apache that had been the subject of that information, or another aircraft operating in the area at the time. Nevertheless, the Boscombe Down Zone controller was commended for having passed information that may have assisted the pilot of the Jodel D11.

Summarising their discussions, members were in agreement that safety had been reduced below the norm by the pilot of the Apache not having situational awareness of the Jodel D11 and visually acquiring it late, and the pilot of the Jodel D11 not hearing the Traffic Information on a contact ahead of them and not visually acquiring the Apache until the moment of CPA. Turning to the question of the risk of collision, some members suggested that the aforementioned factors had been so significant that the encounter had presented a genuine risk of collision. Other members were satisfied that the estimated vertical separation between the aircraft had been sufficient that there had been no risk of collision. A vote was conducted and the latter view, that there had not been a risk of collision, prevailed. As such, the Board assigned Risk Category C to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2023067			
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
	Flight Elements			
	• Situational Awareness of the Conflicting Aircraft and Action			
2	Human Factors	• Monitoring of Communications	Events involving flight crew that did not appropriately monitor communications	
3	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			
4	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			
5	Human Factors	• Identification/ Recognition	Events involving flight crew not fully identifying or recognising the reality of a situation	Late sighting by one or both pilots
6	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

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:

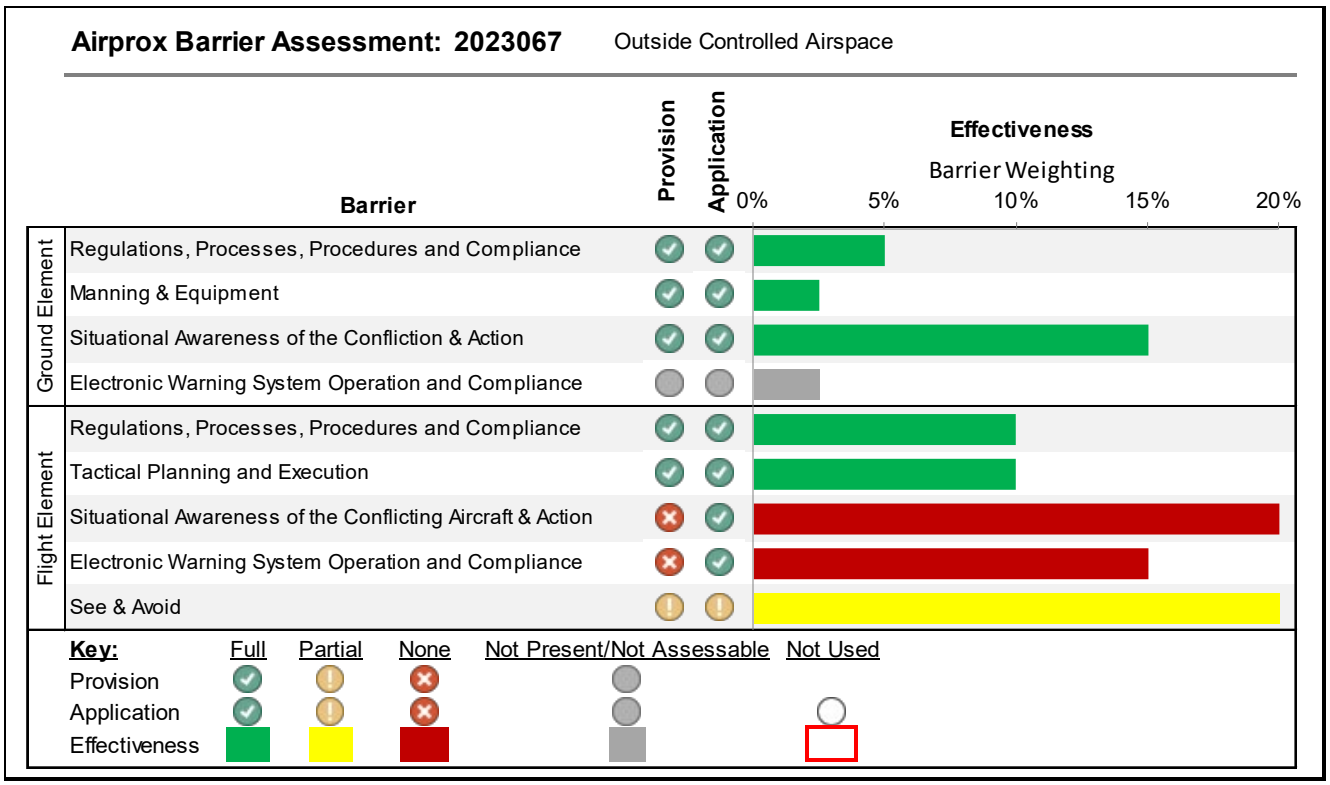
Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the pilot of the Apache had not had any situational awareness of the presence of the Jodel D11 until it had been visually acquired.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the EC equipment fitted to the Jodel D11 would not have been expected to have detected the presence of the Apache.

See and Avoid were assessed as **partially effective** because the pilot of the Jodel D11 had not visually acquired the Apache until the moment of CPA.

[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: 2023067
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