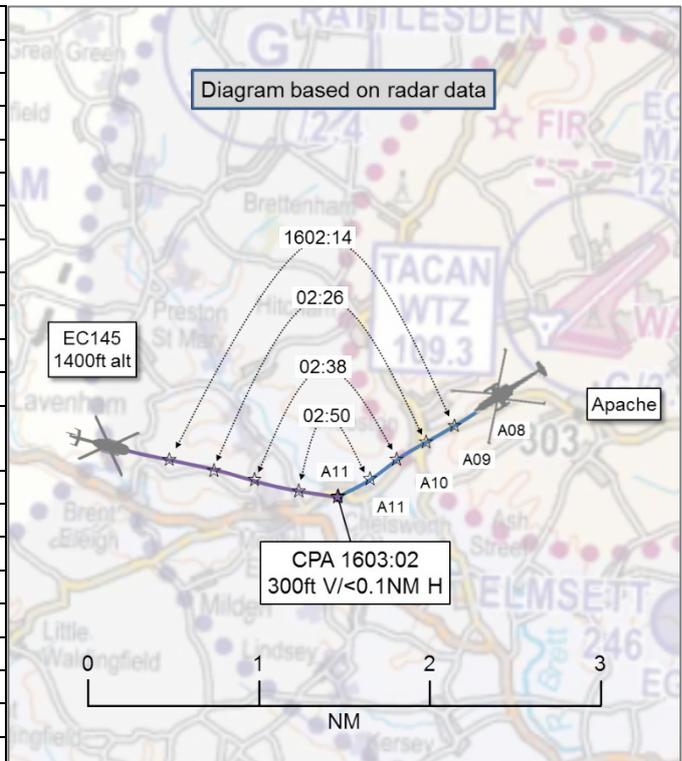


**AIRPROX REPORT No 2020038**

Date: 20 May 2020 Time: 1603Z Position: 5206N 00053E Location: 3NM SW Wattisham

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	Apache	EC145
Operator	HQ JHC	HEMS
Airspace	London FIR	London FIR
Class	G	G
Rules	IFR	VFR
Service	Traffic	Basic
Provider	Wattisham	Wattisham
Altitude/FL	1100ft	1400ft
Transponder	A, C, S	A, C, S
Reported		
Colours	Green	Yellow
Lighting	'lights', strobes	Nav, strobe, landing
Conditions	VMC	VMC
Visibility	40km	>10km
Altitude/FL	800ft	1500ft
Altimeter	QFE (1010hPa)	QNH (1020hPa)
Heading	230°	104°
Speed	100kt	120kt
ACAS/TAS	Not fitted	TAS
Alert	N/A	TA
Separation		
Reported	150ft V/0m H	300ft V/50m H
Recorded	300ft V/<0.1NM H	



**THE APACHE NON-HANDLING PILOT (NHP)** reports that they were departing from Wattisham RW23<sup>1</sup> with an IFR clearance to “maintain runway track and climb to height 1500ft”. This was acknowledged and read back to the Tower controller. On climb out in VMC the crew changed to the Approach frequency, conducted a transponder altitude check at approximately 400ft height and obtained a Traffic Service. Shortly afterwards, Traffic Information was passed regarding [a HEMS helicopter operating under an ‘Alpha’ callsign], 3NM to the west. The NHP saw the HEMS helicopter and assessed that it was higher and would pass in front. The Apache continued to climb as per the clearance with the NHP going ‘eyes in and out’ in order to assist and monitor the Handling Pilot (HP). After a short period of time, circa 20 - 30sec, the NHP regained visual contact with the HEMS helicopter and ordered the HP to stop climb at height 800ft and maintain runway track. A transmission was made on the Approach frequency to reflect this but the HEMS helicopter made a transmission at the same time, making it difficult for the Approach controller to understand. The HEMS helicopter passed approximately 150ft above. Once passed and a further clearance gained, the Apache crew continued the climb and departed on route with no further incident.

The pilot assessed the risk of collision as ‘High’.

**THE EC145 PILOT** reports that they had departed Cambridge airport on a HEMS mission to Ipswich. The routing took the aircraft through ‘Wattisham airspace’ passing approximately 2NM south of the runway. Wattisham ATC placed them on a Basic Service and gave a clearance to transit on a direct track to the scene of the HEMS task. At this stage, the pilot monitoring had notified ATC that they would transit at 1,500ft QNH. After entering the MATZ, Wattisham ATC notified them of departing traffic and shortly afterwards the departing traffic was heard to say "visual with [EC145 C/S] and will stop climb". It took a little longer for the EC145 crew to visually acquire the departing traffic and, not long after that,

<sup>1</sup> The crew were conducting an instrument rating test.

an audible traffic advisory alert was heard. The traffic was first seen in the left 10 'o' clock at 1NM and the pilot flying elected to maintain altitude and track.

After landing at the HEMS site, the crew discussed the event and decided to call Wattisham ATC on the land line. The crew believed there was a low risk of collision since both call-signs were visual with each other. They were, however, surprised that Wattisham ATC had cleared the military helicopter for departure rather than waiting until the HEMS EC145 had cleared the immediate area. The pilot monitoring spoke to the duty approach controller who stated that he had no concerns with regards to clearances or this event because the departing military traffic had called visual and had already stated their intention to stop climbing.

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

**THE WATTISHAM APPROACH CONTROLLER** reports that the EC145 pilot free-called him on the Approach frequency at 1555Z and requested a Basic Service and MATZ and ATZ penetration on a direct routing to Ipswich. A Basic Service was agreed, MATZ penetration approved and the pilot told to stand-by for ATZ transit approval while the controller requested it from the ADC. An ATZ transit was subsequently approved by ADC, with the routing skirting the southwestern edge [of the ATZ], crossing the climb-out of the runway in use, RW23. The EC145 was flying at 1400ft on the QNH 1020hPa. Generic Traffic Information on the visual circuit being active on RW23RH was passed, along with information about an Apache shortly to depart IFR to the north. At about 1600Z, the ADC called him with climb-out details for the Apache, which had requested an IFR departure clearance to climb on runway track to height 1500ft before turning right, own navigation, to the north climbing to altitude 5000ft en-route Marham. An approval to climb straight ahead to height 1500ft was given, and the Approach controller said he would "do the rest" once the Apache was airborne, mindful of the ADC's workload at the time. He briefly considered imposing a "call for release" given the possibility of the EC145's and the Apache's flight-paths crossing at some stage. However, taking into account the SOP at Wattisham that based aircraft departing under IFR are to request a Traffic Service (with Deconfliction Service available), and that there was a reasonable expectation that the Apache pilot would request such a service (met conditions at the time were 40km visibility, FEW048, BLU NOSIG), and that the EC145 was still well west of Lavenham, he elected not to. With the relative speeds of the two helicopters taken into account, he considered there was still plenty of time to pass Traffic Information once the Apache was airborne, as did ADC when questioned. On getting airborne, the Apache pilot called the Approach controller requesting a Traffic Service. The service was agreed and 'clockcode' Traffic Information passed on the EC145. The EC145 pilot was also informed about the Apache being airborne. The Apache pilot reported visual with the EC145, and requested to stop climb at height 800ft to avoid, which was approved. With the Apache pilot reporting visual with the EC145, the Approach controller did not deem it necessary to update the Traffic Information and, once clear, the Apache continued on the previous clearance. The controller noted that no reference to an Airprox was mentioned on the radio; it was only after a subsequent phone conversation with the pilot that he learned he would be submitting such a report.

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

## Factual Background

The weather at Wattisham was recorded as follows:

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METAR EGUW 201622Z 18009KT 9999 FEW048 SCT250 24/13 Q1020 NOSIG RMK BLU BLU=
METAR EGUW 201550Z 17010KT 9999 FEW048 BKN250 24/13 Q1020 NOSIG RMK BLU BLU=
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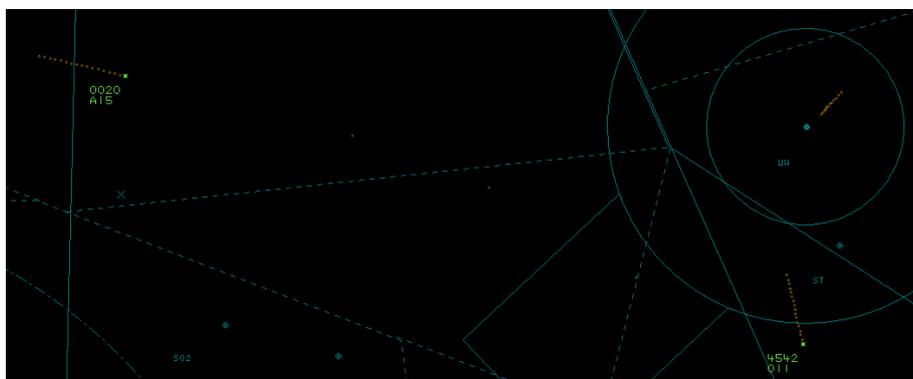
## Analysis and Investigation

### UKAB Secretariat

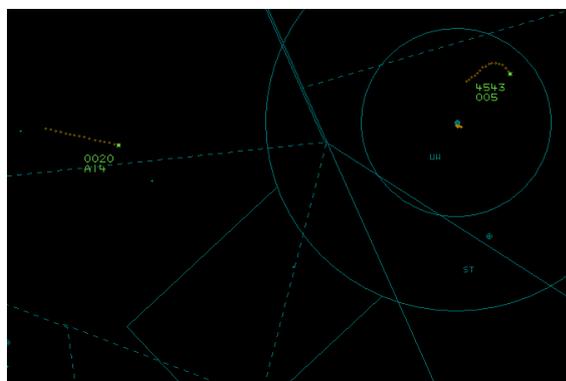
The Apache and EC145 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard<sup>2</sup>. If the incident geometry

<sup>2</sup> SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.

is considered as converging then the Apache pilot was required to give way to the EC145<sup>3</sup>. An Air System that is obliged by these Rules of the Air to keep out of the way of another should avoid passing over, under or in front of the other, unless it passes well clear and takes into account the effect of Air System wake turbulence<sup>4</sup>. Selected radar screen-shots as follows (EC145 level shown as altitude until Figure 5 where both levels are wrt SPS):



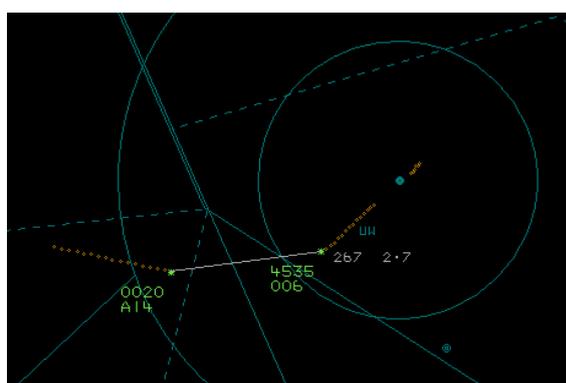
1: 1555:30 – EC145 (0020) MATZ penetration approved



2: 1559:47 – Apache cleared for T/O



3: 1601:26 – TI on EC145 passed to Apache (4535) (TI on Apache passed to EC145 at 1602:00)



4: 1602:14 – Apache pilot reports EC145 in sight



5: 1602:55 – Apache pilot reports EC145 in sight, maintaining 800ft with the 'Helimed above'

### Wattisham Apache Unit Occurrence Investigation

During the conduct of an instrument rating test, and having been granted a clearance by ATC, [Apache C/S] conducted a climb out under a Traffic Service. CAP 774 chapter 3 states "A Traffic Service is a surveillance based ATS, where in addition to the provisions of a Basic Service, the controller provides specific surveillance-derived traffic information to assist the pilot in avoiding other

<sup>3</sup> SERA.3210 Right-of-way (c)(2) Converging. MAA RA 2307 paragraph 12.

<sup>4</sup> MAA RA 2307 paragraph 5.

traffic. Controllers may provide headings and/or levels for the purposes of positioning and/or sequencing; however, the controller is not required to achieve deconfliction minima, and the pilot remains responsible for collision avoidance." Although operating under simulated instrument conditions, [Apache C/S] remained VMC and given the weather conditions would be operating VMC throughout the sortie. ATC passed the whereabouts of [EC145 C/S] to [Apache C/S], the NHP visually identified [EC145 C/S] and informed ATC that he had done so. Assessment by the NHP was that [EC145 C/S] would pass in front of [Apache C/S], given that this was deemed not to be an immediate confliction, NHP went heads in to conduct NHP duties. During climb out, the HP would be expected to remain eyes in at all times due to the simulated conditions of the test and would offer limited or no lookout. [Apache C/S] had a serviceable FCR with C Scope enabled but did not note indications.

[EC145 C/S] continued transit of Wattisham MATZ, both aircraft were operating on the same App frequency, however there is no report that a visual ID call was made by [EC145 C/S]. After a period of approximately 20-30 seconds, NHP [Apache C/S] regained visual ID of the [EC145 C/S], their assessment was that it would cause a loss of safe separation and ordered a stop climb at 800ft. [Apache C/S] transmitted on the approach frequency of the action taken. [EC145 C/S] simultaneously transmitted, meaning that the transmissions were unreadable by ATC. [EC145 C/S] was assessed to pass 150ft above [Apache C/S]. Once safe separation was ensured, [Apache C/S] continued the sortie without further incident.

NHP of [Apache C/S], was aware of the service given under a Traffic service, but there was a perception that ATC would not allow the two aircraft to continue on a collision course. ATC passed all the required information and were content that both aircraft were visual with one another. There was no expectation for the controller to offer deconfliction advice.

Cause: Following the initial sighting of [EC145 C/S], the aircraft commander of [Apache C/S] perceived that there was no risk of collision. He then went eyes in to conduct NHP duties for a period of 20-30 secs. The elapsed time in this case led to closure and potential loss of safe separation.

Recommendation [1]: Isolated incident, aircrew receive sufficient training on the importance of lookout and spatial disorientation.

Causal Factor: Aircrew were aware of the limitations of the Traffic Service but there was a perception that ATC would still give deconfliction advice if they believed a risk of collision existed.

Recommendation [2]: Apache aircrew to be refreshed on Basic, Traffic and Deconfliction Service and limitations during next 4 worlds brief.

Causal Factor: Given the proximity of [EC145 C/S] and the level of Traffic Service, insufficient time and emphasis applied to lookout.

Recommendation [3]: As per recommendation 1.

Observations: Whilst operating within [Wattisham] MATZ, there was a perception that a greater level of protection is afforded to pilots even though operating under a Traffic service, where no separation or deconfliction advice is provided unless it is requested.

## Comments

### JHC

It is acknowledged that the Approach Controller discharged their duty in providing TI to the Apache and that subsequently the crew, having reporting visual, were responsible for maintaining separation. However, the information gathered in this report points to a number of contributory factors that may have been at play. JHC welcomes the Board members views on these factors and hopes to expand on the preliminary recommendations borne out of the local investigation.

## Summary

An Airprox was reported when an Apache and an EC145 flew into proximity 3NM southwest of Wattisham at 1603Z on Wednesday 20<sup>th</sup> May 2020. Both pilots were operating in VMC, the Apache pilot under IFR in receipt of a Traffic Service and the EC145 pilot under VFR in receipt of a Basic Service, both from Wattisham Approach.

### **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.

Due to the exceptional circumstances presented by the coronavirus pandemic, this incident was assessed as part of a 'virtual' UK Airprox Board meeting where members provided a combination of written contributions and dial-in/VTC comments. Although not all Board members were present for the entirety of the meeting and, as a result, the usual wide-ranging discussions involving all Board members were more limited, sufficient engagement was achieved to enable a formal assessment to be agreed along with the following associated comments.

The Board first discussed the ATC aspects of the Airprox. The NATS Advisor briefed the Board that, given the relative recency of the event and previously mentioned challenges presented by the coronavirus pandemic, NATS ATC staff had not yet completed the NATS Safety Investigation Report but that he had discussed the matter at length and could brief the Board. He noted that the Approach and Tower controllers were both dual rated and familiar with Wattisham. The Approach controller was told by the EC145 pilot that they would be crossing the Wattisham MATZ at altitude 1400ft and was given the Wattisham QNH, which differed by 1hPa from that already set. He coordinated a potential ATZ crossing with the Tower controller, reporting that the EC145 would be at height 1000ft (equating to altitude 1283ft with airfield elevation 283ft) and about 2½ min later issued a clearance for the Apache to climb straight ahead to height 1500ft on departure (equating to altitude 1783ft) and that he would 'do the rest' once it was airborne. Members discussed the Approach controller's rationale for that course of action, as described in his narrative report. On the one hand, the Apache crew were responsible for collision avoidance in Class G, which in this case would be discharged through the provision of Traffic Information, visual acquisition and action iaw the appropriate regulation. On the other hand, although Board members agreed that the responsibility ultimately fell on the Apache crew, it was felt that in this instance the Approach controller's clearance had, to a degree, contributed towards the circumstances of the Airprox (**CF1**). Members felt that a call for release when the Apache was fully ready to depart may have been a more prudent course of action and would have enabled the Approach controller to more accurately judge the likely relative positions of the two aircraft given the EC145 was expected to transit through the climb-out at the edge of the ATZ. That would also have enabled Traffic Information to be passed by the ADC controller prior to departure, which Board members felt would have been preferable to passing it in the very early stages of the climb when pilot workload was high (**CF2**). Nonetheless, the Approach controller passed Traffic Information to the Apache crew at the first available opportunity on frequency and the Apache NHP reported visual with the EC145. The Board then discussed the Apache crew's actions. Having reported visual with the EC145, converging on the right, it was the Apache crew's responsibility then to give way to it, which they did not (**CF3**). The Board discussed the factors that may have contributed to this lack of action including perhaps a perception that the IFR clearance also provided a degree of priority over other traffic. It was also noted that the Tower controller's clearance to the Apache crew contained the phrase '... after departure, due traffic, climb straight ahead ...' and some members felt that this may have created a sense in the Apache crew of ATC 'protection', that they were perhaps in some way coordinated against other traffic. In the event, the Apache NHP was passed Traffic Information and saw the EC145 but did not adapt the IFR departure plan in order to take appropriate action (**CF4**). Members felt that the Apache NHP's direction to the HP to level-off amounted to avoiding action and the Apache had passed almost directly underneath the EC145 (**CF5**). The Board agreed that the Apache NHP had not assimilated the Traffic Information conflict information (**CF6**) or the visual conflict information and had flown close enough to the EC145 to

cause its pilot concern (**CF7**, **CF10**), probably because he was otherwise engaged in the task of monitoring the IRT candidate's performance as they departed Wattisham (**CF8**). Turning to risk, the Board agreed with the EC145 pilot's analysis that there had been a low risk of collision, even though the EC145 crew had received a traffic alert (**CF9**), because each captain was visual with the other aircraft. Finally, the Board noted that the HEMS task can rapidly increase in complexity, especially near the tasked location, and that many HEMS operators mandate a Traffic Service in Class G whenever possible.

## **PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**

### Contributory Factors:

2020038			
CF	Factor	Description	Amplification
<b>Ground Elements</b>			
<b>• Situational Awareness and Action</b>			
1	Human Factors	• Inappropriate Clearance	The ANS clearance contributed to the Airprox
2	Human Factors	• ANS Traffic Information Provision	TI not provided, inaccurate, inadequate, or late
<b>Flight Elements</b>			
<b>• Regulations, Processes, Procedures and Compliance</b>			
3	Human Factors	• Flight Operations Documentation and Publications	Regulations and/or procedures not complied with
<b>• Tactical Planning and Execution</b>			
4	Human Factors	• Insufficient Decision/Plan	Inadequate plan adaptation
5	Human Factors	• Action Performed Incorrectly	Incorrect or ineffective execution
<b>• Situational Awareness of the Conflicting Aircraft and Action</b>			
6	Human Factors	• Understanding/Comprehension	Pilot did not assimilate conflict information
7	Human Factors	• Lack of Action	Pilot flew close enough to cause concern despite Situational Awareness
8	Human Factors	• Distraction - Job Related	Pilot engaged in other tasks
<b>• Electronic Warning System Operation and Compliance</b>			
9	Contextual	• ACAS/TCAS TA	
<b>• See and Avoid</b>			
10	Human Factors	• Lack of Action	Pilot flew close enough to cause concern

Degree of Risk: C.

Recommendation: Nil.

### Safety Barrier Assessment<sup>5</sup>

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 ATC clearance to the Apache crew contributed to the circumstances of the Airprox.

<sup>5</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

**Flight Elements:**

**Regulations, Processes, Procedures and Compliance** were assessed as **ineffective** because the Apache crew did not give way to the EC145, converging from the right, but closed to a range at which avoiding action was required.

**Tactical Planning and Execution** was assessed as **partially effective** because the Apache crew did not adapt their planned instrument departure in a timely manner when it became apparent that the EC145 was converging on the right.

**Situational Awareness of the Conflicting Aircraft and Action** was assessed as **partially effective** because the Apache crew did not assimilate the converging EC145 and alter course to give way but instead took avoiding action to remain clear.

**See and Avoid** were assessed as **partially effective** because although the Apache captain saw the approaching EC145, he did not take timely action to give way, resulting in an undesirable vertical separation as the Apache passed directly below the EC145.

Airprox Barrier Assessment: 2020038		Outside Controlled Airspace		Effectiveness				
Barrier		Provision	Application	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	✓	⚠					
<b>Key:</b>		Full	Partial	None	Not Present/Not Assessable	Not Used		
Provision	✓	⚠	✗	○				
Application	✓	⚠	✗	○				
Effectiveness								