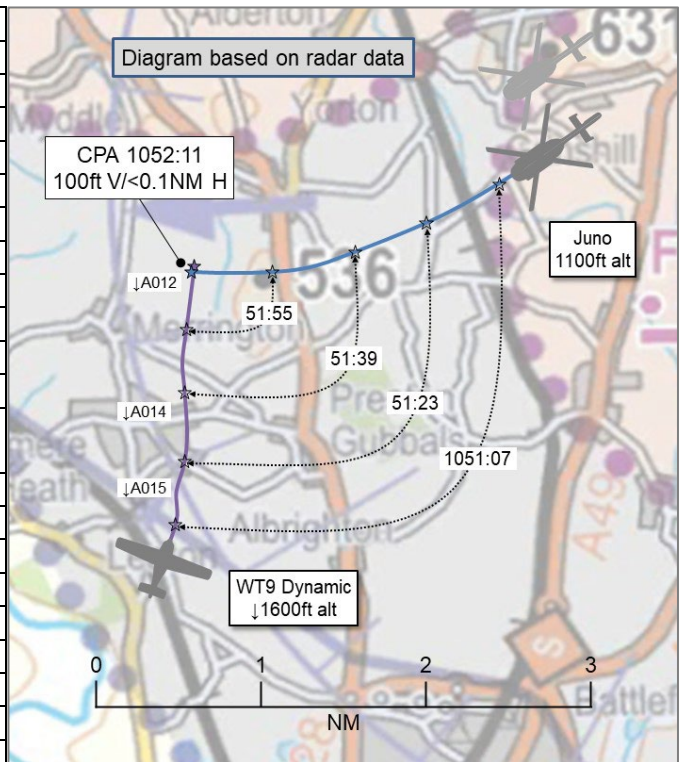


AIRPROX REPORT No 2022004

Date: 20 Jan 2022 Time: 1052Z Position: 5247N 00246W Location: 4NM west of Shawbury

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Juno	WT9 Dynamic
Operator	HQ Air (Ops)	Civ FW
Airspace	Shawbury MATZ	Shawbury MATZ
Class	G	G
Rules	VFR	VFR
Service	Basic	Establ'ing contact
Provider	Shawbury LL	Shawbury Zone
Altitude/FL	1100ft	1200ft
Transponder	A, C, S	A, C, S
Reported		
Colours	Black, yellow	White
Lighting	HISLs, strobes, nav, landing light	Strobes
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1000ft	1500ft
Altimeter	QFE (1030hPa)	QNH (1033hPa)
Heading	260°	NR
Speed	90kt	NR
ACAS/TAS	TAS	Not fitted
Alert	None	N/A
Separation at CPA		
Reported	50ft V/50m H	20ft V/100m H
Recorded	100ft V/<0.1NM H	



THE JUNO PILOT reports during a formation departure from RW36 at RAF Shawbury and exiting the ATZ to the west, a civilian single-engine light fixed-wing aircraft was seen to pass underneath the lead aircraft by less than 50ft as the formation exited Harmer Hill gate. The pilot of the No2 formation aircraft reported that the civilian aircraft entered a steep dive to pass underneath the lead aircraft prior to resuming a northerly routing towards Sleaf airfield. The civilian aircraft was unsighted by the lead aircraft's pilot and no associated ACAS alerts were received with no traffic reported from ATC. An Airprox was reported to RAF Shawbury on the Low Level frequency at 0952 and the sortie continued without further incident.

The pilot assessed the risk of collision as 'Very High'.

THE WT9 DYNAMIC PILOT reports that Shawbury called them to advise of 2 helicopter contacts. They scanned left-to-right and saw them approaching from the right. They instinctively pushed the stick forward and the helicopters passed above and behind them.

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

THE SHAWBURY TOWER CONTROLLER reports that a call on the land-line was received from the Shawbury Supervisor with Traffic Information on a civil aircraft south of the airfield by approximately 6 miles transiting to Sleaf, not below 1400ft QFE. [The Juno formation] was transiting, in formation, to exit the airfield to the west via Harmer Hill at 1000ft QFE. Just prior to [the Juno pilot] calling Harmer Hill, Stud 4, the pilot of an aircraft called to cross RW36 to operate area right. After this call, [the Juno pilot] proceeded to call 'Harmer Hill, Stud 4'. The controller had a quick check of the ATM to check on the potentially conflicting civil traffic; at this point they did not believe there was a risk of collision and didn't notice that the civil aircraft had begun to descend. They replied to [the Juno pilot], 'Roger, Stud 4' sending them to their next frequency.

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

THE SHAWBURY LOW LEVEL CONTROLLER reports that they were carrying out the Approach and Low Level task. Traffic levels were low. Filming was taking place in the Approach Control Room. The Zone controller called them with Traffic Information on an aircraft that was approximately 7NM east-southeast of Shawbury routing to Sleaf via Shrewsbury at 1700ft QNH, routing through the MATZ. The controller had no traffic conducting radar approaches and the altitude was approximately 400ft above the height of RW VFR departures and arrivals, so they approved the MATZ transit. When the transit was 3NM south of Shawbury, they passed Traffic Information to the Tower controller, stating that it was not below 1400ft QFE for now. The Tower controller stated that a formation was departing to the west and that that was the only traffic to affect. As the film crew was packing away, the controller saw the formation approach the western gate. The formation was indicating 300ft below the Sleaf inbound. The pilots checked-in on stud 4 "callsign 1, callsign 2" but did not speak to the controller (Shawbury Low Level) directly. They could see the conflicting traffic was very close to the formation now and made the decision not to call the traffic as they believed the reason the pilot had not spoken to them was that they had seen the conflicting traffic and the controller did not want to cause a distraction. The squawks of the 3 aircraft all merged and it was not possible to see exactly where they were or who was at what height/altitude. As the tracks separated, the Sleaf inbound was indicating 200ft below the formation. A second later, the formation leader declared an Airprox. The controller called Tower to ask if Traffic Information had been passed to the formation – the controller stated that they had not. They then spoke with the Zone controller who said that they had called the formation to the Sleaf inbound but that the pilot had not acknowledged. The Supervisor was not in the room at the time and the Low Level controller informed them of the Airprox on their return.

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

THE SHAWBURY ZONE CONTROLLER reports that it was a busy period in Zone; [the WT9] was one of their circa 10 VFR tracks on frequency. [The WT9] was flying at 1700ft QNH recovering to Sleaf from the south-east on a Basic Service. It is commonplace to put these tracks at 2400ft QNH to overfly the Shawbury Aerodrome Traffic Zone (ATZ), however, [the WT9 pilot] could not make higher so the controller instructed them to avoid the Shawbury ATZ. [The WT9] routed south of the Shawbury ATZ and the controller passed Traffic Information on [the WT9] to their Radar Approach controller (who was band-boxed with Shawbury Low Level). The Air Traffic Control Supervisor overheard the discussion and briefed the Shawbury Aerodrome Controller on the Zone controller's behalf. When [the WT9 pilot] called visual with Sleaf Aerodrome, the controller warned them of a formation of helicopters departing Shawbury westbound through Harmer Hill Visual Reporting Point; the helicopters at the time were indicating 300ft below and 3NM away but converging laterally. They then asked [the WT9 pilot] to squawk 7000 and free-call Sleaf. [The WT9 pilot] did not acknowledge their Traffic Information or the instruction to squawk 7000. The controller noticed the aircraft squawk 7000 so believed that their message had been received and they moved on to other tasks – it is not uncommon for [a pilot] not to acknowledge, especially when they are close to making an approach and when they know that the controller is busy on the radio. When the departing helicopters called their colleague on Shawbury Low Level, the Zone controller heard them acknowledge an Airprox – they looked and saw that [the WT9] had descended through the helicopters' [level].

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

THE SHAWBURY SUPERVISOR reports that they were dividing their attention between LARS and RA/LL for the period leading up to the Airprox. They heard the Traffic Information being passed to RA/LL from LARS, so passed this to Tower to aid the Zone controller, who was busy. They believe they passed the aircraft's Traffic Information as not below 1400ft QNH initially, but immediately called back Tower and updated this to 1700ft QNH or not below 1400ft QFE – what they had heard from Zone. Their attention was divided between RA frequencies and Zone frequencies before they had to leave the Approach room to brief the other BMUE/Supervisor on something. At this point, the civil aircraft was still south of Shawbury ATZ by a mile, they believe. When they returned soon after, the LL controller reported to them that an Airprox had been reported on stud 4.

Factual Background

The weather at Shawbury was recorded as follows:

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METAR EGOS 201050Z 33004KT 9999 BKN045 03/M00 Q1039 NOSIG RMK BLU BLU=
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Analysis and Investigation

Military ATM

The Zone controller was operating with a medium-to-high workload with circa 10 VFR tracks on frequency. The WT9 pilot was on recovery to Sleaf airfield and had requested a transit of the Shawbury MATZ at 1700ft. The Zone controller approved the transit provided they maintain 2 miles separation from the Shawbury ATZ. The Zone controller passed Traffic Information to the Approach controller and, when the WT9 pilot reported visual with Sleaf, they were given Traffic Information, advised to change their squawk and change en-route. This was not acknowledged by the WT9 pilot.

The Aerodrome controller was operating with a medium workload with 4 aircraft on frequency. They had received Traffic Information calls from both the Supervisor and the Approach controller and had advised both that they would have the pair of Junos departing to the west. Traffic Information was not passed to the Juno formation lead pilot prior to their departure and change of frequency to Approach.

The Approach controller was also band-boxing the Low Level task and reported their workload to be low with 3 aircraft on frequency. After receiving Traffic Information regarding the WT9 from the Zone controller they approved the transit and provided the Aerodrome controller with the same Traffic Information in turn. They reported that they heard the Juno pilots checking-in on the frequency but did not immediately contact the Approach controller. The Approach controller observed the conflict between the Juno formation and the WT9, however, opted not to pass Traffic Information to the lead Juno pilot as they believed they were likely manoeuvring to avoid the WT9 as their check-in on frequency was not complete.

Figures 1-7 show the positions of the Juno formation and the WT9 at relevant times during the Airprox. The screenshots are taken from a replay using the NATS radars which are utilised by Shawbury therefore, representative of the picture available to the Shawbury controllers.

The WT9 pilot was routing towards Sleaf whilst maintaining outside the Shawbury ATZ (see Figure 1). The Juno pilots appeared to be transiting westerly. The Aerodrome and Approach controllers had both had Traffic Information passed to them by either the Zone controller or Supervisor regarding the WT9 transit. The WT9 pilot reported visual with Sleaf and requested to change frequency. The separation decreased to 3.3NM (see Figure 2).

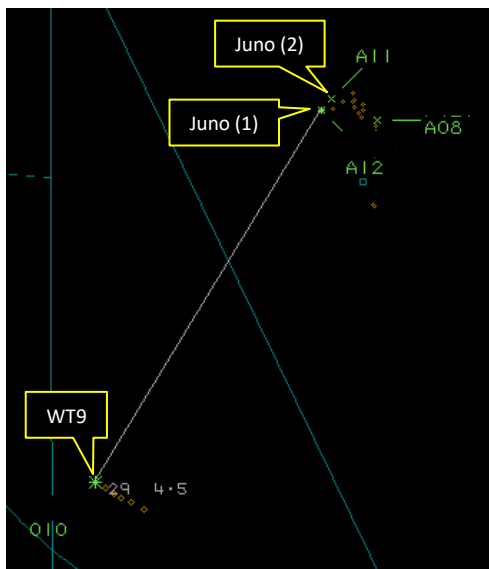


Figure 1

WT9 routing as expected and Junos transiting towards westerly departure

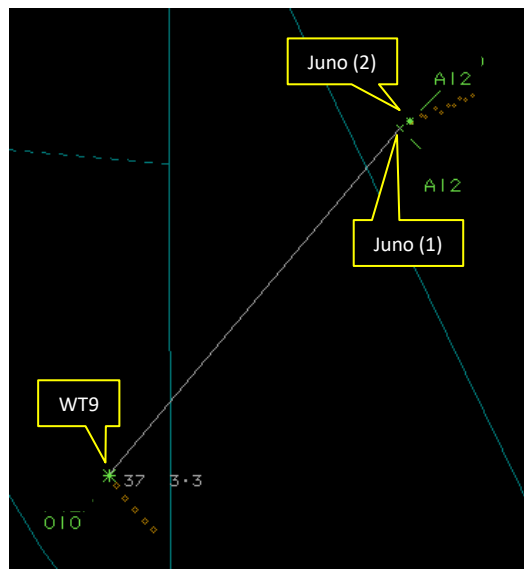


Figure 2

WT9 pilot reported visual with destination

Twenty-one seconds later, Traffic Information was passed highlighting that there was a formation of helicopters northeast, 3NM indicating three hundred feet below. They were then advised to squawk 7000 and change to their en-route frequency. This is not acknowledged by the WT9 pilot. Separation decreased to 2.4NM and 400ft from the lead aircraft (see Figure 3). Twenty-three seconds later, the lead Juno pilot reported switching to stud 4 following their departure from the airfield. Separation decreased to 1.5NM and 400ft. The Aerodrome controller did not pass Traffic Information to the Juno pilot (see Figure 4).

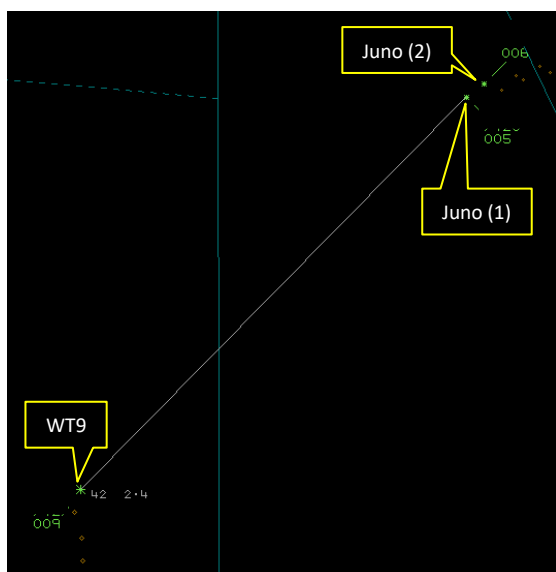


Figure 3

Traffic Information passed to the WT9 pilot

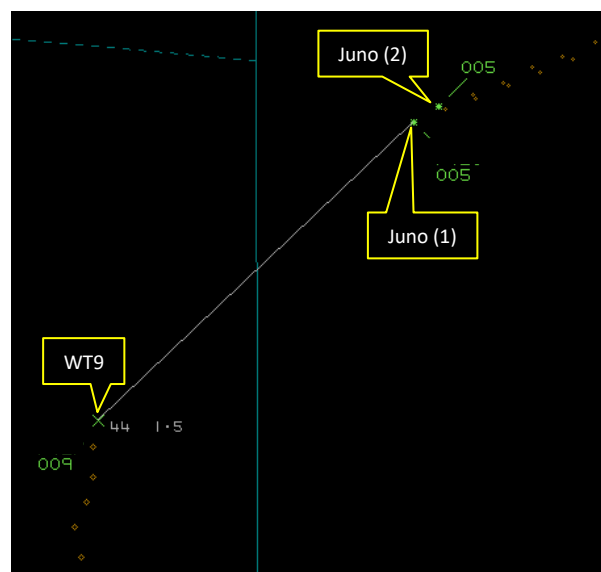


Figure 4

Lead Juno pilot reported changing to stud 4

Eighteen seconds later, the Juno pilots began their check in on the Low Level frequency, however, this was not complete. The Approach controller opted to not pass Traffic Information to the Juno pilot. Separation decreased to 0.7NM and 300ft from the lead aircraft (see Figure 5). CPA occurred 20 seconds later. Separation was measured at 0.0NM and 100ft for what is believed to be the Juno formation lead and the WT9 and 0.1NM and 0ft between the WT9 and the formation trail See Figure 6).

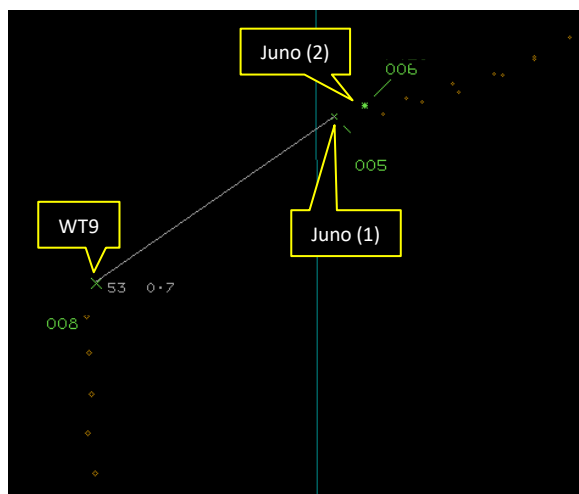


Figure 5

Juno pilots begin to check-in on LL frequency

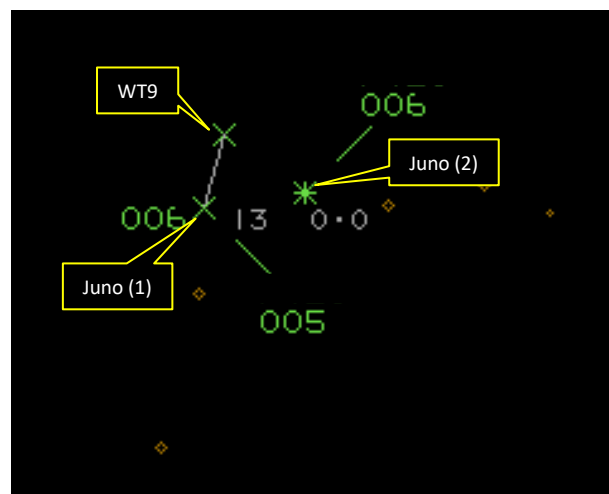


Figure 6

CPA

RAF Shawbury convened an OSI¹ to investigate the Airprox between the WT9 and the pair of Junos which identified a number of causal factors and gave a number of recommendations.

Although information was passed between the relevant ATC personnel, the information at times was not entirely accurate of the situation but, although where there were inaccuracies, these were later rectified. The Aerodrome controller did not pass any Traffic Information to the Juno pilots about the WT9 MATZ transit. As the Junos departed for their westerly departure, the Aerodrome controller, upon checking the ATM, did not perceive the WT9 to be considered as a factor despite having been told that the WT9 was inbound to Sleaf with no agreement to maintain a level.

The Approach controller chose not to pass Traffic Information to the Juno pilots as they did not complete their check-in on frequency after their change from the Tower frequency. The lead Juno pilot did not observe the WT9, and any Traffic Information could have been useful. Although the WT9 was given Traffic Information, it was not complete as the direction of travel was omitted which should have been included to allow the WT9 pilot to alter their course or remain on frequency if required.

UKAB Secretariat

The Juno and WT9 Dynamic pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.² If the incident geometry is considered as converging then the WT9 Dynamic pilot was required to give way to the Juno.³

Occurrence Investigation

An OSI was convened on 28 Feb 22, following the occurrence on 20 Jan when a formation of 2 Juno helicopters, departing RAF Shawbury (SHY) to the west, had a very near miss with a light civilian air system (AS) approaching Sleaf from the south as they all crossed Harmer Hill, the gate through which SHY-based AS enter/exit the western 'training' area.

As there were no obvious indication(s) of technical faults, the investigating team was instructed to focus on the human factors that contributed to and caused the incident and proffer recommendations based on the findings that should serve to mitigate against future recurrence of this type. During the conduct of the investigation, a number of personnel were interviewed, including the aircrew involved, the ATC controllers and Supervisor and personnel from Airbus Helicopters UK. No obvious technical issues were found and, in speaking to those directly and indirectly involved, it

¹ Occurrence Safety Investigation.

² (UK) SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.

³ (UK) SERA.3210 Right-of-way (c)(2) Converging. MAA RA 2307 paragraph 12.

became apparent that this was a case of human factors failures of various types aligning to eventually trigger the events of the day.

In addition to identifying the Human Factors involved, the 'LoSS Other Air Users' BowTie was consulted in order to highlight any failed Barriers/Activities. The team concluded that the failings/weaknesses of the following did contribute to the event:

Flying Regulations and Procedures – 1FTS Local Flying Regulations (use of transponder); Air Ops Intervention Training and Currency (ADC use of ATM); Air Ops Procedures (MATZ Crossers).

Of note, the incident occurred 6 weeks prior to the OSI being convened, which limited the information available to the investigators.

Recommendations:

1. That the use of the Aerodrome Traffic Monitor (ATM), in particular level occupancy, is formally included in ADC trg (LTOs). This could have helped with conflict identification leading to the provision of a traffic information call.
2. Online and published Sleaf joining procedures should be amended to include a map of the area showing the RAF Shawbury Western Gates and their heights. Additionally, intensity of traffic and the mention of previous Airprox in the vicinity of the gates should be emphasised.
3. Establish and implement a robust procedure to ensure that information on conflicting traffic in and out of Sleaf is relayed to Shawbury West Gate traffic.
4. Review formation squawk procedures with regard to ACAS.
5. Ensure that radio calls are in compliance with CAP 413 and/or local orders.
6. Remind ATC of the implications when deviating from the SHY procedure for crossing the MATZ, in particular, in the vicinity of Sleaf and the VFR Gates.
7. Section 4 of the ATC Trg Handbook, para 7 (Sleaf Operations) to be reviewed to include potential impact of the proximity of the Western Gates to RWY 36 (Sleaf) approach lane.
8. Remove unnecessary personnel in the Approach Room when live controlling is taking place in order to reduce the impact on the 'Op Bubble' of personnel.
9. Simplify the MATZ Crossing Procedure by directing all traffic to operate on the SHY QFE.
10. Full review of the VFR Gate system.

Comments

HQ Air Command

This Airprox was subject to an Occurrence Safety Investigation by trained Occurrence Investigators. The investigation highlighted areas of weakness in the BowTie analysis for MAC that had been previously assumed robust, such as MATZ crossing procedures, procedures for aircraft joining Sleaf and the transponder setting procedures for aircraft in formation. The formation pilots were unaware of the WT9; the traffic was not called by ATC to the formation and the use of TAS as a barrier was ineffective on this occasion as both formation aircraft were squawking and it is assumed any TAS alerts were dismissed by the crews as Shawbury aircraft. This left the See and Avoid barrier to the WT9, the pilot of which was given enough Traffic Information by ATC to visually acquire the Junos and take avoiding action. The investigation made 10 recommendations covering: review of ATC controller training and procedures, in particular MATZ crossing pressure setting and Sleaf arrivals; an amendment to the online Sleaf joining procedures to include a map of the RAF

Shawbury Western Gates and their heights; a full review of the Shawbury VFR departures and a review of formation squawk procedures. This Airprox has highlighted the importance of providing aircrew full and accurate situational awareness with respect to other air users and the importance of robust procedures to separate air traffic within busy airspace. It has also highlighted that assumptions in the BowTie analysis were incorrect and that the barriers that should have prevented this were weakened; this has provided an important opportunity to revisit risk management and re-establish robust procedures within a very busy flying area.

AOPA

This event shows how important the timely passing of Traffic Information is to all pilots and that lookout remains a primary barrier to mid-air collision. Even though it is not mandated under a Basic Service to point out traffic, CAP 774 states that *'If a controller.... considers that a definite risk of collision exists, a warning shall be issued to the pilot.'*⁴

Whilst approaching to land at an airfield, the workload increases – well done to the WT9 pilot for having the spare capacity and lookout skills to take action to increase the separation.

It is heartening to see Shawbury operating procedures and publications are being amended, the General Aviation community looks forward to their publication in civilian documentation.

Summary

An Airprox was reported when a Juno and a WT9 Dynamic flew into proximity 4NM west of Shawbury at 1052Z on Thursday 20th January 2022. Both pilots were operating under VFR in VMC, the Juno pilot was establishing contact with Shawbury Low Level and the WT9 Dynamic pilot was in receipt of a Basic Service from Shawbury Zone.

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 considered the actions of the Juno pilot and noted that they had been in receipt of an Aerodrome Control Service from the Shawbury Tower controller but had changed to the Low Level frequency immediately prior to CPA. The Board also noted that neither the Shawbury Tower controller nor the Shawbury Low Level controller had passed Traffic Information on the WT9 to the Juno pilot, and that the Juno's TAS had also not provided the pilot with a warning of the presence of the WT9. Members were unsure if the lack of warning from the TAS had been due to a detection issue or if the cockpit selections made by the Juno pilot had inhibited any possible alert; given the findings and recommendations of the Shawbury investigation, the Board concluded that formation procedures had had an influence on the efficacy of the Electronic Warning System Barrier and that this had been contributory to the Airprox (**CF8**). Noting the absence of a TAS warning and Traffic Information from the controller(s), the Board agreed that the Juno pilot had not had any situational awareness of the presence of the WT9 (**CF7**) and had thus been relying on lookout for the detection of potential threats to their aircraft. Although the pilot of the subordinate aircraft in the Juno formation sighted the WT9 as it passed underneath the lead Juno, the pilot of the lead Juno had not seen the WT9 and the Board considered this to have also been contributory to the Airprox (**CF10**).

Turning to the actions of the WT9 pilot, the Board heard from a GA pilot member that there is no requirement for civilian pilots to contact the associated military ATCU when transiting through a MATZ, and so the Board was encouraged by the actions of the WT9 pilot in doing so as it is the Board's view that this is undoubtedly a better option than not contacting the unit when inside the MATZ. Members noted that the Shawbury Zone controller had passed Traffic Information to the WT9 pilot on the Junos

⁴ CAP774, Ch2, para 2.8, (UK) SERA.9005(b)(2) and GM1 (UK) SERA.9005(b)(2).

approximately 1min prior to CPA (assuming the time reference on the recorded RTF to be the same as that of the radar replay) and that the WT9 pilot then scanned in that area and sighted the Junos. However, members considered that this sighting of the helicopters had been relatively late (**CF9**) as their only option had been to 'instinctively push the stick forward' to ensure separation. The Board then discussed the use of the 'Gate' system by Shawbury-based aircraft and again referred to the findings and recommendations of the Shawbury investigation. The Board concluded that there is no/insufficient information published to the wider aviation community on the use and location of the Shawbury 'Gates', which naturally hinders the ability of other pilots to take account of the 'Gates' in their planning cycle. This became particularly important in this Airprox because the WT9 pilot was routing to join RW36 at Sleaf and passed very close to the western 'Gate', about which they knew nothing. Therefore, the Board agreed that this lack of information published to the wider aviation community on the Shawbury 'Gates' had been contributory to the Airprox (**CF5, CF6**).

The Board then considered the actions of the Shawbury controllers and ATC Supervisor. Members noted that the Low level controller had also been working the Approach frequency but that this had not been considered to be a factor due to the workload being manageable. However, members also noted that the Zone controller, who had been providing a Basic Service to the WT9 pilot, had been working approximately 10 tracks and that their workload had been high enough to warrant the Supervisor assisting them by passing Traffic Information on the WT9 transiting the MATZ to the Tower controller. The Board heard from a military controller member that this would likely have alerted the Supervisor to the potential for a conflict between the WT9 inbound to Sleaf and the departing Junos. However, the member could not explain why the Supervisor had then chosen to leave the Approach control room to confer with a colleague on an unrelated matter when any potential for conflict between the Junos and the WT9 remained. The Board therefore agreed that the supervision had been sub-optimal and that this had contributed to the Airprox (**CF2**). Looking at the actions of the controllers, the Board noted that Traffic Information on the WT9 had been passed from the Zone controller to the Low level controller, and from the Supervisor (on behalf of the Zone controller) to the Tower controller. Thus, the Low Level controller, Zone controller and Tower controller all had sufficient situational awareness of the WT9's flight profile (inbound to Sleaf) and that, at some point, the pilot would have been descending to effect their arrival. However, controller members felt – and other Board members agreed – that Traffic Information on the WT9 should have been passed, either by the Tower controller or the Low Level controller, to the Juno pilots on their departure and the fact that it had not been passed had been contributory to the Airprox (**CF1, CF3**). Whilst members noted that the Juno formation had only just checked-in on the Low Level frequency immediately prior (~18sec) to CPA, military controller members were unanimous in their view that the Low Level controller should have passed Traffic Information to the formation immediately, and not assumed that the reason they had not contacted the controller had been that they had been avoiding the WT9, as this had not been the case (**CF4**).

Finally, the Board considered the risk involved in this event. Members noted that both pilots' estimation of separation were similar and that the recorded radar data had showed there to be very little lateral separation. However, the recorded vertical separation showed the WT9 to be higher than the Juno, which did not correspond with the pilots' reports that the WT9 had passed underneath the helicopter. Therefore, the Board concluded that there had been some lag in the Mode C data and consequently the pilots' estimates were likely to be the more accurate. The Board quickly agreed that this had been a very close encounter and that there had been a risk of collision (**CF11**). However, opinion was divided as to whether or not the aircraft had missed each other purely by chance, or that the control inputs of the WT9 pilot had had an influence on the CPA. Some members felt that the instinctive nature of the WT9 pilot's control input meant that it was likely that this had had little effect on CPA, while others felt that they had manoeuvred to prevent a likely collision, so the Chair put it to the vote. By a margin of 7 votes to 3, the Board assigned a Risk Category A to this event – serious risk of collision.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISKContributory Factors:

2022004				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Ground Elements				
• Regulations, Processes, Procedures and Compliance				
1	Human Factors	• ATM Regulatory Deviation	An event involving a deviation from an Air Traffic Management Regulation.	Regulations and/or procedures not fully complied with
• Manning and Equipment				
2	Human Factors	• ATM Leadership and Supervision	An event related to the leadership and supervision of ATM activities.	
• Situational Awareness and Action				
3	Human Factors	• ANS Traffic Information Provision	Provision of ANS traffic information	TI not provided, inaccurate, inadequate, or late
4	Human Factors	• Expectation/ Assumption	Events involving an individual or a crew/ team acting on the basis of expectation or assumptions of a situation that is different from the reality	
Flight Elements				
• Regulations, Processes, Procedures and Compliance				
5	Organisational	• Flight Operations Documentation and Publications	Flight Operations Documentation and Publications	Inadequate regulations or procedures
• Tactical Planning and Execution				
6	Organisational	• Flight Planning Information Sources	An event involving incorrect flight planning sources during the preparation for a flight.	
• Situational Awareness of the Conflicting Aircraft and Action				
7	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				
8	Human Factors	• Response to Warning System	An event involving the incorrect response of flight crew following the operation of an aircraft warning system	CWS misinterpreted, not optimally actioned or CWS alert expected but none reported
• See and Avoid				
9	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
10	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
• Outcome Events				
11	Contextual	• Near Airborne Collision with Aircraft	An event involving a near collision by an aircraft with an aircraft, balloon, dirigible or other piloted air vehicles	

Degree of Risk: A

Safety Barrier Assessment⁵

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

Ground Elements:

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

Regulations, Processes, Procedures and Compliance were assessed as **ineffective** because no Traffic Information on the WT9 was passed to the Juno formation by either the Shawbury ADC or the Shawbury Low Level controller.

Manning and Equipment were assessed as **partially effective** because the ATC Supervisor, having recognised that the Zone controller was busy and that potential for conflict between the WT9 and Juno formation was present, chose not to remain in the Approach Room until the potential for conflict had passed.

Situational Awareness of the Confliction and Action were assessed as **ineffective** because no Traffic Information on the WT9 was passed to the Juno formation by either the Shawbury ADC or the Shawbury Low Level controller.

Electronic Warning System Operation and Compliance were assessed as **not used** because controllers at RAF Shawbury do not routinely include tracks in receipt of a Basic Service in the alert parameters for STCA.

Flight Elements:

Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because local routing points in use at RAF Shawbury – in this case the Western Gate – are not promulgated to the wider aviation community.

Tactical Planning and Execution was assessed as **partially effective** because information regarding RAF Shawbury departure/arrival gates was not available to the WT9 pilot.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the Juno pilot did not have any situational awareness of the presence of the WT9 in the vicinity of the Western Gate.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the TAS on the Juno did not provide an alert of the presence of the WT9.

See and Avoid were assessed as **partially effective** because the Juno pilot did not see the WT9 and the WT9 pilot only saw the Juno formation at a late stage, requiring immediate action to increase separation.

