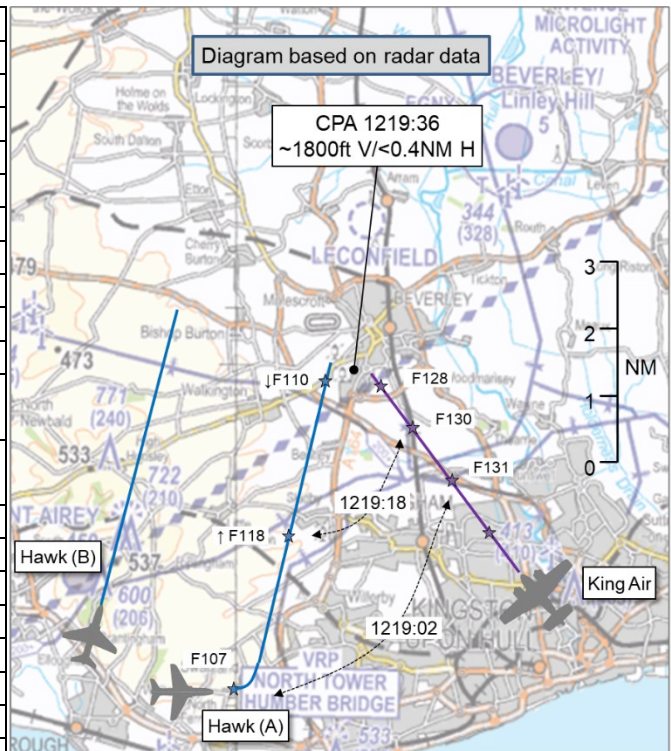


AIRPROX REPORT No 2024122

Date: 11 Jun 2024 Time: 1220Z Position: 5350N 00026W Location: Beverley

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Hawk(A)	King Air
Operator	HQ Air (Trg)	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Traffic	Traffic
Provider	Swanwick Mil	Humberside
Altitude/FL	~FL110	FL128
Transponder	A, C, S	A, C, S
Reported		
Colours	Black	White, brown, black
Lighting	Navigation, strobes	HISL, beacon, navigation,
Conditions	VMC	VMC
Visibility	>10km	NR
Altitude/FL	NR	~FL100
Altimeter	RPS (1014hPa)	SPS (1013hPa)
Heading	010°	140°
Speed	NR	130kt
ACAS/TAS	TCAS I	Not fitted
Alert	TA	N/A
Separation at CPA		
Reported	600ft V/<1NM H	Not seen
Recorded	~1800ft V/<0.4NM H	



THE HAWK PILOT reports that they had been flying the lead aircraft in a Basic Fighter Manoeuvres (BFM) training sortie in the Vale of York south area. Upon completion of the serial and resetting for the next, a climb was initiated back to datum altitude. They had received a warning on TCAS that showed a contact at very close range to the right, only 700ft above. This cued their eyes onto a King Air aircraft inside 1NM on a convergent heading. Avoiding action (a bunt) was initiated to ensure safe separation. On review of the tapes, the high aspect BFM serial had begun at 1215 and terminated at 1218:57. TCAS had intermittently shown a contact closing from the south during the fight, initially at a range of around 15NM. These fleeting indications only lasted a few seconds and went unnoticed by the pilot during the fight with their focus being outside the cockpit. The fight descended from being above to below the contact inside 5NM before a knock-it-off was called. At no point during the course of the serial was Traffic Information called on the King Air by Swanwick.

Observation by the Hawk pilot: during BFM, TCAS alerts generated by the wingman are frequent, which the pilot believes can lead to a degree of desensitisation during this discipline. Thankfully, as the formation transitioned to the marshalling phase post-fight, the pilot had taken the time to interrogate the final TCAS warning which alerted them to the presence of another aircraft.

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

THE KING AIR PILOT reports that they were conducting a category 1 flight test under a permit to fly and had been carrying out ‘All Engines Operating Performance Climbs’ with 3 crew (two pilots and a flight test engineer). The aircraft had been operating under a Traffic Service from Humberside. Humberside had reported 2 Hawks manoeuvring in the vicinity (they believe) initially 5NM to the north of their position. On the report of the Hawks from ATC, the two pilots looked for the traffic with initially just 1 Hawk visible. The crew decided to turn the aircraft onto southeast for the next test point to increase

the distance between them and the Hawks. On positioning approximately 5min/7-10NM to the southeast, the aircraft was turned back onto northwest. The pilot believed that 1 of the Hawks was spotted again by the crew to the north with their aircraft turned again onto southeast to maintain distance. One of the Hawks had then routed south with significant relative closure and the two aircraft (the Hawk and King Air) subsequently having an Airprox. At the point of the Airprox, the minimum separation with the Airprox Hawk was not seen. Immediately following the Airprox, the two Hawks had been seen heading southwest. The King Air TCAS had been inhibited for programmatic reasons (the maturity of the modification programme) which had formed part of the flight conditions and detailed in the Permit-to-Fly. A risk analysis for the flight test had been conducted prior to flight which included mitigating the mid-air collision risk, including pilot crew composition and currency, highly desirable Traffic Service and a dedicated crew member for data recording.

THE SWANWICK MILITARY CONTROLLER reports that at around 1500 they had been informed by the Swanwick Mil East Supervisor that they had received a phone call from a pilot from Leeming surrounding an occurrence that happened whilst they had been screening a trainee. The report had been that a pair of Hawks had got close to another aircraft and Traffic [Information] hadn't been called. To provide clarity to this report, the Swanwick Military controller had decided to [review] the radar replay. The replay showed the trainee call [the] Traffic to the Hawk formation at 1159 and received an acknowledgement from the pilot. Between 1217 and 1219, the trainee [dealt with] a range-crossing clearance for a single F35 to cross D207 Holbeach Range. Whilst this had been ongoing, the unknown traffic and the Hawk formation came within 1NM and 500ft. Traffic was not updated. As the microphones are not live until one transmits or makes a phone call, the conversation between the Swanwick Military controller and the trainee had not been recorded. From recollection, during the period they had been discussing the following: Scanning Y70 and Class C airspace above to ensure the F35 had a safe transit through controlled airspace, obtaining a range crossing clearance, passing it to the pilot; the subsequent handover to the next agency and the reason it couldn't be a silent handover; allocating and handing over a 2-ship of USAF F35's to Swanwick Mil North.

THE HUMBERSIDE AIR TRAFFIC SERVICES MANAGER reports that they had received an email on 21st June 24 from the Airprox Board regarding an alleged Airprox between the Hawk formation and the King Air on the 11th of June 24 at 1215. Until this point the unit had been unaware of the Airprox as none of the pilots had reported it to the unit either at the time or post the event verbally on RT, via telephone or by written report. Therefore, no SARMS/ECCAIRS reports had been filed. SARMS and ECCAIRS reports were subsequently filed by the controller upon their return to work.

HUMBERSIDE SAFETY INVESTIGATION reports that an email was received on 21st June 24 from the Airprox Board regarding an alleged Airprox between [Hawk(A) C/S] and [King Air C/S] on the 11th June 24 at ~1215. [...]. The controller had just returned from a period of absence of more than 60 days [...]. In accordance with unit requirements, the controller underwent an assessment the previous day with a Unit Examiner; they were assessed as competent.

The King Air pilot had been operating under a Traffic Service, with a squawk code of 4267, carrying out flight operations to the north of Humberside airport, at various levels from 2000ft to FL190. The pilot had been advised that the D323 complex overland area had been active, the base of which is FL150, so they [confirmed that they] would operate west of this area. Two military aircraft squawk codes, 6040 and 6041, both had the same callsign [Hawk formation C/S] on their mode S returns, had been operating with a military radar unit. All three aircraft had been operating in Class G airspace in the Vale of York AIAA (Area of Intense Aerial Activity). The King Air pilot had departed [departure airfield] at 1124 and had been provided with a Traffic Service and had been informed of the activity status of D323 as their requested levels and operating area may have conflicted.

At 1150, the King Air pilot had been advised of the Hawk formation position and level.

At 1158 a controller handover took place. During the handover the King Air pilot was again advised of the military aircraft, and informed that they were seen to be operating between FL60 and FL190.

At 1202:50 The Hawk formation had been at FL149 and FL151, 15NM northwest of the King Air at FL157.

At 1204:00 The Hawk formation had been 8NM northwest of the King Air at FL121/FL129 with the King Air at FL148 the aircraft were turning away with the King Air tracking southeast and the Hawk formation heading northwest.

At 1206:35 12NM apart with the Hawk formation at FL136/FL153 and the King Air at FL143.

At 1212:00 17NM apart with the Hawk formation at FL110/FL118 and the King Air at FL130. The Hawk formation continued to operate carrying out high G manoeuvres, occasionally the altitude reporting dropped out due to the data not being able to maintain an update.

At 1216 The King Air pilot had been advised of the traffic again operating between FL50 and FL180, this was acknowledged by the pilot.

At 1217 [Exchange with unrelated aircraft].

At 1218 The Hawk formation had been carrying out high G manoeuvres 4NM west-southwest at FL177/FL128 with the King Air at FL145.

At 1219 With the Hawk formation at FL110/FL112 2NM SW tracking northeast, Traffic Information had been passed to the King Air pilot who reported visual with one and then the transmission was clipped. The Hawk formation levels were indicating a rapid change of altitude/level at that time. The distance between the aircraft at the time the King Air pilot had called visual had been approximately 0.5NM horizontally and 900ft+ vertically.

Throughout the period of the recording, the controller had been continually moving the transponder labels on the situational display as the high G manoeuvres by the military aircraft had been causing them to merge. This had shown good situational awareness by the controller in order to pass pertinent information to the King Air pilot.

Investigation

An email had been received on 21st June 24 regarding a reported Airprox which had occurred on 11th June in the vicinity of Walkington, Beverley involving a Hawk formation [C/S...] and a King Air [C/S ...] at 1215. No Airprox had been reported to the unit by RT or telephone that day. A review of the RT and radar recordings was undertaken by an assessor and the ATSM. The controller concerned had been on their days off, returning Wednesday 26th June and had been asked to file the appropriate occurrence reports upon their return. On Friday 5th July, an assessor talked through the veristore recording with the controller as they had no recollection of the occurrence owing to nothing having been formally reported at the time or after landing and only being made aware of it some considerable time later. As part of the investigation, a review of the FPS and the radar log book had also been undertaken. The controller had commenced duty at 0800 that day and had been rostered until 1600, according to the radar log book their operational duty periods had been as follows: on console 0900-1030, break 1030-1200, on console at 1200-1259. They had finished duty the previous day at 1600 and for this cycle had been rostered 24hrs. At the time of the incident the controller had 5 aircraft on frequency, the breakdown in services had been: 1 x TS, 4 x BS. The controller had just returned from a period of absence of more than 60 days [...]. In accordance with unit requirements, they had undergone an assessment the previous day with a Unit Examiner, they had been assessed as competent.

Conclusion

The Hawk Formation and King Air pilots were both operating in Class G airspace and in the Vale of York AIAA. Traffic Information had been passed in accordance with CAP774 to the King Air pilot.

Incident causal factor - Swanwick Military capacity.

Factual Background

The weather at Humberside was recorded as follows:

```
METAR EGNJ 111150Z 35010KT 9999 FEW020 SCT032 BKN038 13/05 Q1018=  
METAR EGNJ 111250Z 35012KT 9999 FEW020 SCT032 BKN038 13/06 Q1019=
```

Analysis and Investigation

Military ATM

The Swanwick Mil controller was under training with an instructor screening the session during the Airprox period.

Sequence of Events

At 1159, the Hawk formation had been provided Traffic Information regarding the King Air as it conducted its southeasterly leg of the air test profile.

Following that Traffic Information call, the Swanwick Mil controller had then engaged with planning for a controlled airspace crossing to the south along with an associated special use area crossing. The nature of the training session had resulted in this planning activity taking a considerable period of time with the special use area crossing clearance requested between 1217 and 1219.

At 1216:24, the King Air had turned onto its north-westerly leg of the air test profile.

At 1217:47, the King Air's north-westerly track had reduced the lateral separation to within 5NM. Whilst vertical separation had still existed, the Hawk formation had been operating within a block and therefore had been able to descend as required in accordance with the Basic Fighter Manoeuvre sortie. The Swanwick Mil controller had been engaged with obtaining the special use area crossing clearance and did not provide the Hawk formation pilots with Traffic Information on the King Air.

Local BM Investigation(s)

A local investigation was conducted by 78 Sqn (Swanwick Mil) following the event to identify the Air Traffic Service provision related causal/aggravating factors. The outcome of the investigation had been that the Airprox occurred due to an ATS provision error brought through incorrect division of attention by the Swanwick Mil controller. Two causal factors were identified, with the following action taken:

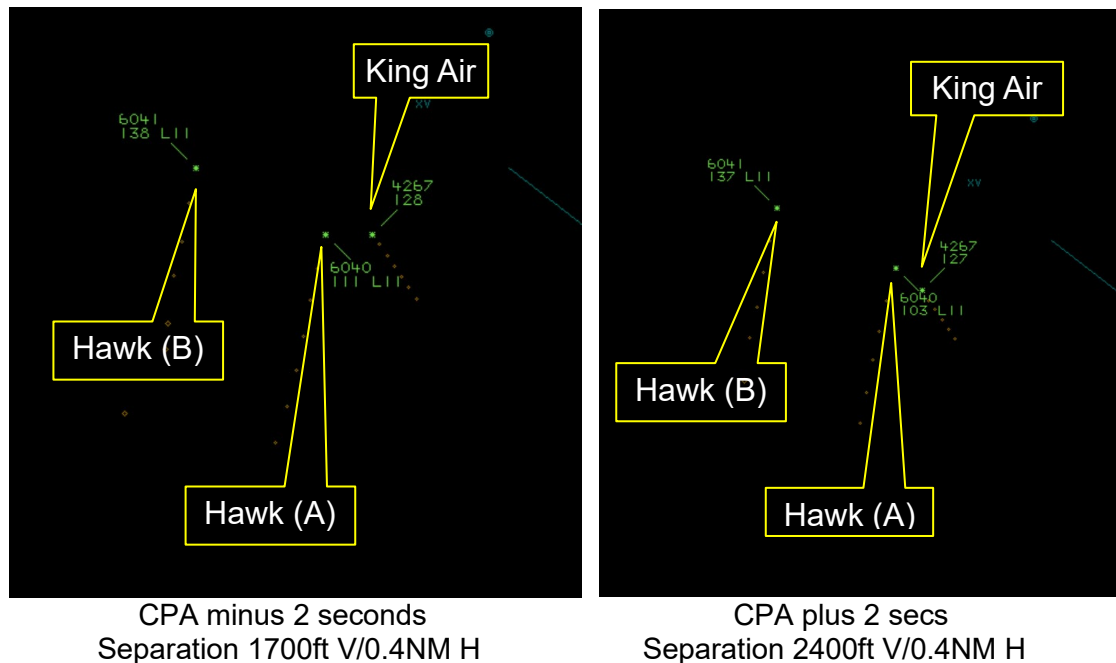
- a. Whilst obtaining the special use area crossing clearance the controller [did not] adequately divide their attention and monitor the position of the King Air in relation to the Hawk formation.
 - i. Additional training was provided, specifically targeted on division of attention.
- b. The Swanwick Mil Instructor [did not] intervene appropriately after becoming focused on the training discussion.
 - i. Additional intervention training was delivered across all Swanwick Mil controllers, as this Airprox had been identified as one of a number of similar events involving sub-standard intervention.

2 Gp BM Analysis

The local investigation by 78 Sqn accurately identified how the provision of Traffic Information had been ineffective in providing the Hawk pilot with suitable situational awareness regarding the King

Air's profile. The lack of Traffic Information had been as a result of both poor division of attention and incorrect prioritisation being given to the training discussions.

UKAB Secretariat



The Hawk and King Air 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

Comments

HQ Air Command

Where possible, military fast jets are operated in segregated airspace to minimise the risk of MAC with non-exercise participants. This airspace is in short supply and the Hawks here operated in the Class G Vale of York AIAA as an alternative. Despite receiving a radar service and scanning TCAS to mitigate the MAC risk, the human factors vulnerabilities of this option were exposed on this occasion; the King Air had not been called to the Hawks by ATC and the pilots had been prioritising MAC mitigations within their own training serial. Once that training was complete, the Hawk pilot correctly prioritised looking out for other aircraft, aided by TCAS. Supervisory lessons from the occurrence have been identified by Swanwick and the Hawk pilots have been reminded of their MAC mitigation responsibilities in Class G airspace.

AOPA

The King Air undertook proper pre-flight TEM concerning use of Air Traffic Services in Class G airspace. It is unfortunate that, although Traffic Information was passed, it hadn't been timely enough to avoid an Airprox occurring, nor did the relevant Air Traffic units talk to each other to ensure separation.

Summary

An Airprox was reported when a Hawk and a King Air flew into proximity at Beverley at 1220Z on Tuesday 11th June 2024. Both pilots were operating under VFR in VMC, the King Air pilot in receipt of

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

a Traffic Service from Humberside and the Hawk pilot in receipt of a Traffic Service from Swanwick Military.

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 firstly considered the actions of the Hawk pilot, noting the formation aspect and high-energy format for their flight. They recognised that this activity had been taking place outside a restricted airspace block, which is not ideal, but accepted that this is not always possible and that they had secured a Traffic Service to allow for the best possible situational awareness support whilst operating within the busy Area of Intense Aerial Activity. Members agreed that the carriage and use of electronic conspicuity equipment is a further useful tool in building situational awareness, but that in this case the opportunity to interrogate that data source had been framed by the ongoing exercise, with the pilot having acted as soon as they had felt able to do so and, having identified the King Air in their proximity, had enabled a late-sighting and the performance of an avoidance manoeuvre to increase separation between the two aircraft.

Turning to the actions of the King Air pilot, members recognised that such flights are necessary and important, and that the crew had gone to great lengths to ensure they had had sufficient onboard resource to aid in maintaining their situational awareness whilst simultaneously conducting a largely 'heads-in' exercise and had secured a Traffic Service to add an additional layer of support. Members challenged the chosen operating area for this work, accepting that there are always constraints in place, but felt that an Area of Intense Aerial Activity was always going to add additional challenge to their task. Members noted that the onboard electronic conspicuity equipment had been disabled as a feature of their flight but wondered whether portable equipment could be substituted in such cases.

In reviewing the contribution by the respective Air Traffic Control agencies, members recognised that the Humberside controller had provided timely and accurate Traffic Information and been attentive to the developing situation. The Board felt that in the Swanwick Military case, although the controller had passed Traffic Information, they had allowed themselves to become distracted by other tasks and this had led to the late passing of Traffic Information at the most critical time. The Board noted that the Military investigation had highlighted this distraction issue and had used the lessons learned for wider educational purposes amongst its controlling team.

Members were also keen to remind all pilots that calling an Airprox over RT at the time of the event enables data capture and supports a thorough understanding and investigation for greater lesson-learning.

In conclusion, members agreed that although there had been some missed opportunities to improve situational awareness, the separation between the aircraft had been such that normal safety standards and margins had pertained. Members were satisfied that there had not been a risk of collision and assigned Risk Category E to this event.

Members agreed on the following contributory factors:

- CF1:** Late Traffic Information had been passed by the Swanwick Military controller.
- CF2:** The Swanwick Military controller had been distracted by other tasks.
- CF3:** The Hawk pilot had been distracted (from their electronic conspicuity equipment) by other tasks.
- CF4:** The Hawk pilot had achieved late situational awareness.

CF5: The Hawk pilot had received a Traffic Alert from their electronic conspicuity equipment.

CF6: The Hawk pilot, having been distracted by other tasks, had not optimally actioned the Traffic Alert they had received via their electronic conspicuity equipment.

CF7: The Hawk pilot had achieved only a late-sighting of the King Air.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024122			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Ground Elements				
• Situational Awareness and Action				
1	Human Factors	• ANS Traffic Information Provision	Provision of ANS traffic information	TI not provided, inaccurate, inadequate, or late
2	Human Factors	• Task Monitoring	Events involving an individual or a crew/team not appropriately monitoring their performance of a task	Controller engaged in other tasks
Flight Elements				
• Situational Awareness of the Conflicting Aircraft and Action				
3	Human Factors	• Interpretation of Automation or Flight Deck Information	Interpretation of Automation or Flight Deck Information by the flight crew.	Pilot engaged in other tasks
4	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				
5	Contextual	• ACAS/TCAS TA	An event involving a genuine airborne collision avoidance system/traffic alert and collision avoidance system traffic advisory warning triggered	
6	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				
7	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

Degree of Risk: E.

Safety Barrier Assessment²

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 **partially effective** because the Swanwick Mil Controller had been engaged in other tasks and had passed late Traffic Information to the Hawk pilot.

Flight Elements:

² The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the Hawk pilot had been engaged in other tasks and had achieved only late situational awareness of the King Air.

Electronic Warning System Operation and Compliance were assessed as **partially effective** because although the Hawk pilot had received a Traffic Alert, they had not actioned it optimally.

See and Avoid were assessed as **partially effective** because the Hawk pilot had achieved only a late sighting of the King Air.

Airprox Barrier Assessment: 2024122		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 Conflicting Aircraft & 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:							
	<u>Full</u>	<u>Partial</u>	<u>None</u>	<u>Not Present/Not Assessable</u>	<u>Not Used</u>		
Provision	✓	⚠	✗	●	○		
Application	✓	⚠	✗	●	○		
Effectiveness							