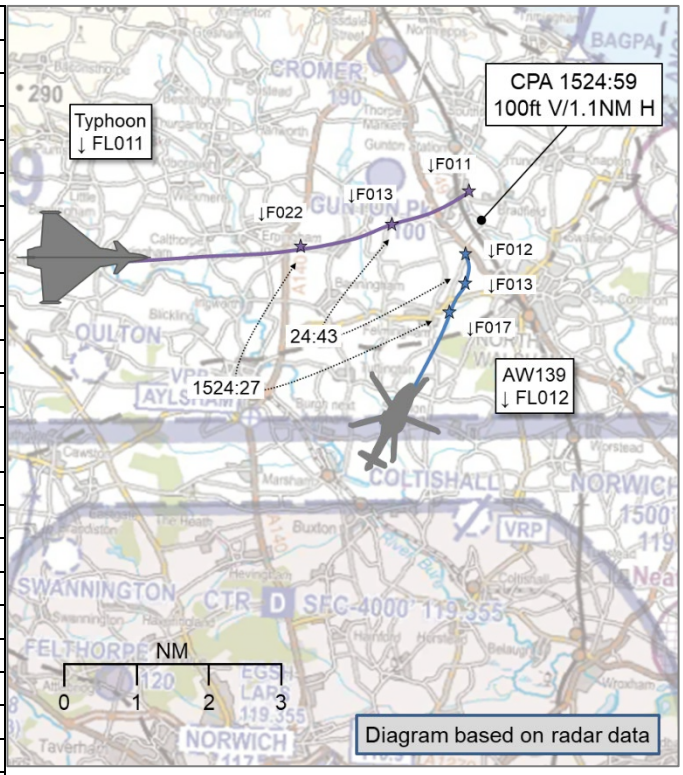
AIRPROX REPORT No 2021191

Date: 21 Sep 2021 Time: 1525Z Position: 5249N 00121E Location: 10NM north Norwich

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	AW139	Typhoon
Operator	Civ Comm	HQ Air (Ops)
Airspace	London FIR	London FIR
Class	G	G
Rules	IFR	VFR
Service	Traffic	Traffic
Provider	Norwich	Swanwick (Mil)
Altitude/FL	FL011	FL012
Transponder	A, C, S	A, C, S
Reported		
Colours	White, Blue, Red	Grey
Lighting	Strobes, Anti-col, Landing, Nav	NR
Conditions	VMC	VMC
Visibility	5-10km	>10km
Altitude/FL	2000ft	NR
Altimeter	RPS (1025hPa)	RPS
Heading	025°	ENE
Speed	140kt	350kt
ACAS/TAS	TCAS I	Not fitted
Alert	TA	N/A
Separation at CPA		
Reported	0ft V/0.5NM H	NR
Recorded	100ft V/1.1NM H	



THE AW139 PILOT reports that they were established in the cruise at 2000ft RPS under a Traffic Service en-route to HMR 3, when Norwich Approach warned them of a fast-moving contact in their 11 o'clock, 4000ft above descending. They changed their TCAS 1 setting to expanded range, picked up the contact and as they did not have visual contact requested descent to 1500ft. They received other warning calls from Norwich and noting the rate of descent of the opposing traffic on TCAS increased their rate of descent. Passing through approximately 1700ft they received a TCAS TA. Approaching 1600ft they became visual with a fast-jet contact in their 10 o'clock range approximately 1NM tracking east. They turned left toward the contact aiming to pass astern. Norwich confirmed that it was a single aircraft and not a pair. As they levelled at 1500ft the fast-jet, believed to be a Typhoon also levelled at a similar altitude then turned north before clearing to the west. The closest point of approach was judged and confirmed by the Norwich controller to have been 0.5NM.

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

THE TYPHOON PILOT reports that a civilian helicopter reported an Airprox against the Typhoon; the time of the Airprox was initially reported as 1523z on 21 Sep 21. At that time, the Typhoon was descending through 6000ft AMSL heading ENE at a position approximately 10NM west of the helicopter's reported position. At about that time, and before entering low-level, the Typhoon pilot communicated with the helicopter on the low-level common frequency [they believed] and Swanwick Mil's report of the traffic was relayed by [Typhoon 2 C/S]. A minute later, the Typhoon established at low-level. A tape review of Typhoon 2's IFF interrogation showed the 2 aircraft at least 1NM apart. A few days after landing the captain of the Typhoon learned that the helicopter crew had reported an Airprox.

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

THE NORWICH CONTROLLER reports [AW139 C/S] was at 2000ft under a Traffic Service outside CAS. The controller called traffic, west of the helicopter 6NM fast moving, indicating FL57 descending. This information was acknowledged by the pilot. The controller updated the Traffic Information when the conflicting traffic was at 4NM and 2000ft above. The AW139 pilot requested a descent to 1500ft. This request was approved. The fast-jet continued its descent towards the helicopter. Traffic Information was updated again at 2NM. The AW139 pilot reported visual with the fast-jet, which turned just in front of the helicopter approximately 0.3NM away at the same level. The controller phoned the controlling authority of the fast-jet, Swanwick Military, to confirm that the jet was flying solo. It was confirmed that it was. This information was passed to the helicopter pilot. The pilot advised the controller that they would be filing an Airprox.

THE SWANWICK MIL CONTROLLER reports that they were working a pair of Typhoons that were general handling surface to FL200 in East Anglia MTA. The pair had split and during this time the controller had taken another pair of Typhoons into the D323 complex. One of the [second pair of Typhoons] freecalled in D323 for recovery back to Coningsby. At this time they issued a squawk to the aircraft and as their attention was on that air system, the Airprox Typhoon began a descent north of Norwich. The controller had not noticed the other air system already tracking north out of Norwich showing FL016 on Mode C. As they was working through the process of identifying the [non-Airprox Typhoon] and giving the weather information they scanned around the other two Typhoon tracks they were working. It was at that time they noticed the other air system [the AW139] and called traffic to the Typhoon but separation was already lost at this time. The [Typhoon C/S] turned and the two air systems diverged and standard separation was maintained.

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

THE SWANWICK MIL SUPERVISOR reports that they did not witness this incident as they believed they were carrying out admin tasks.

Factual Background

The weather at Norwich was recorded as follows:

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METAR COR EGSH 211520Z 27007KT 240V320 9999 SCT035 20/12 Q1029 NOSIG=
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Analysis and Investigation

Norwich Investigation

[AW139 C/S] was receiving a Traffic Service in VMC in Class G airspace north of Norwich CAS having departed Norwich Airport en-route to the North Sea, the ATCO gave [AW139 C/S] Traffic Information on a single fast-jet to the north west at 6NM and 4000ft above. The ATCO continued to monitor the fast jet and updated the Traffic Information 45sec later at which point the pilot of [AW139 C/S] elected to descend to 1500ft to avoid the potential confliction. The ATCO then rang RAF(U) Swanwick to establish the fast jet's intentions and was informed that the Typhoon was operating in the block 'surface to 20,000ft' the ATCO asked if it was a singleton; this information was confirmed by RAF(U) Swanwick and passed to the pilot of [AW139 C/S]. The Typhoon transited north of the AW139 and once the AW139 reached the coastline reported to the Norwich ATCO that they would be filing an Airprox.

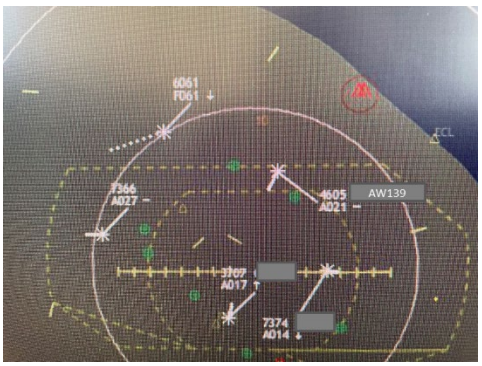

Figure 1:1523:30 – Traffic Information passed

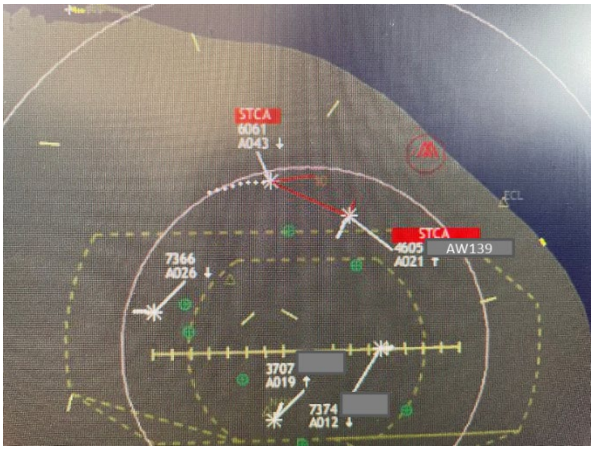

Figure 2: 1524:15 – Traffic Information updated

Figure 3: 1524:30 – Call to Swanwick(Mil)

Figure 4: 1524:50

Recommendation

The East Anglian Airspace Users Working Group is a good forum to increase safety and understanding of all operators. A representative from the North Sea Helo Operators should be invited to attend. Lines of communication between RAF(U) Swanwick and RAF Coningsby to be strengthened to ensure all parties are aware of each other's needs and operations. NAL HAO to initiate briefings for ATCOs at RAF(U) Swanwick and RAF Coningsby aircrew, with a subsequent invite for RAF personnel to visit NAL ATC.

CAA ATSI

CAA ATSI provided some radar screenshots using the NATS radars (not the radar used by the Norwich controller), tied together with the RT recording provided by Norwich ATC.

At **1521:30** the AW139 pilot (squawk 4605) called Norwich Radar on departure, passing 1900ft. The Norwich Radar controller instructed them to climb to 2000ft on the Yarmouth RPS and advised that it would be a Traffic Service on leaving controlled airspace which was read back correctly by the pilot. The Typhoon (squawk 6061) was 15NM west of Norwich at this time.

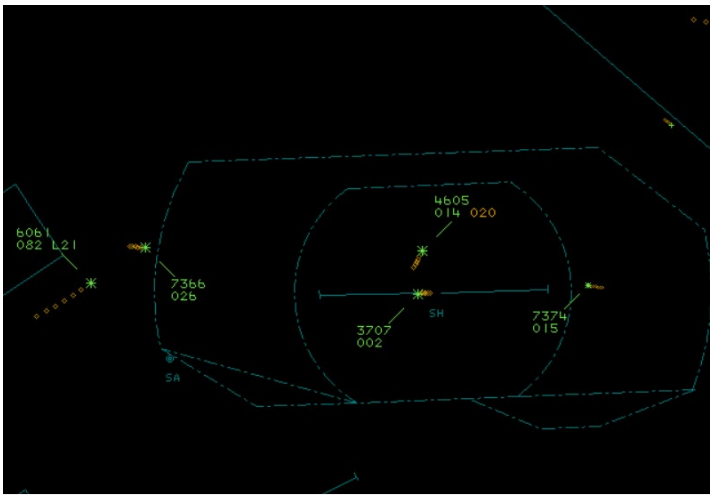

Figure 5

At **1523:37** the Norwich controller passed the following Traffic Information; "*there is traffic er in your, correction, west of you now range of 6 miles, fast moving, believed to be military fast jets crossing left to right, currently they are indicating FL57 but they are descending*". The pilot replied; "*er roger – looking*":

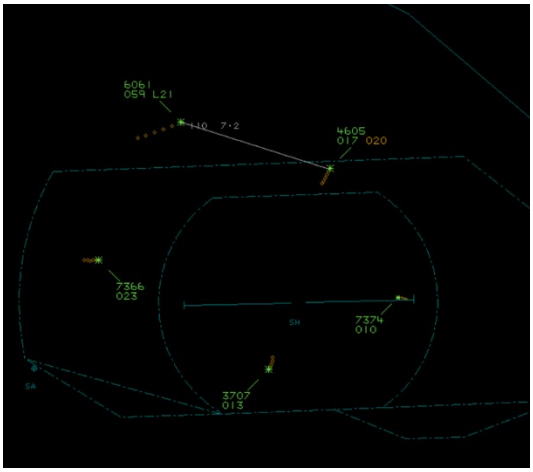

Figure 6

At **1524:12** the Norwich controller passed updated Traffic Information: *"that traffic now in your left, 9 o' clock – 4 miles, crossing left to right, still fast moving, 2000ft above but descending"*. The pilot requested to drop to 1500ft which was approved by the controller:

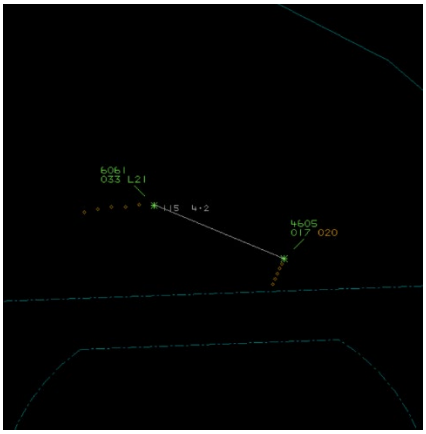

Figure 7

At **1524:30** the controller again updated the Traffic Information: "*that traffic now in your left 10 o'clock 2 miles, manoeuvring (???) currently at a similar level just turning to the north east*":

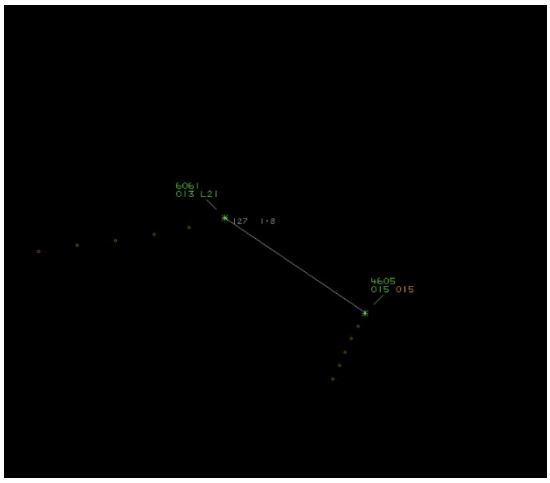

Figure 8

The pilot confirmed that they were visual with one. The controller went on to say that they were checking with Swanwick Mil to determine if it was a single aircraft, to which the pilot replied *"roger, he's current, er passing the same level just in front of us now"*. The controller then confirmed that it was a single aircraft and the pilot replied *"that's copied- we're good visual – he's right in front of us now".*

Figure 9 : 1525 CPA

Military ATM

The Typhoon was under a Traffic Service from Swanwick Mil and at the time of the Airprox was in the descent to low-level. Prior to entering low-level, the Typhoon pilot reported that they communicated with the AW139 on the low-level common frequency and had received Traffic Information from Swanwick Mil which was relayed to their playmate. No estimated separation was reported.

The Swanwick Mil controller reported that they were providing a Traffic Service to the Typhoon and their playmate who were operating from the surface up to FL200 as well as to another Typhoon. During the lead up to and during the Airprox the controller was in the process of identifying the other Typhoon which had freecalled for recovery from the Managed Danger Area 323. Traffic Information was passed to the Typhoon after the Airprox had occurred.

The Supervisor did not witness the event as they believed they were carrying out admin duties.

Figures 1 – 3 show the positions of the AW139 and the Typhoon at relevant times during the Airprox. The screenshots are taken from a replay using the NATS Radars, which are available to the Swanwick controller however, it is not a direct copy of the controller's screen therefore, may not be entirely representative of the picture available to the Swanwick controller at the time.

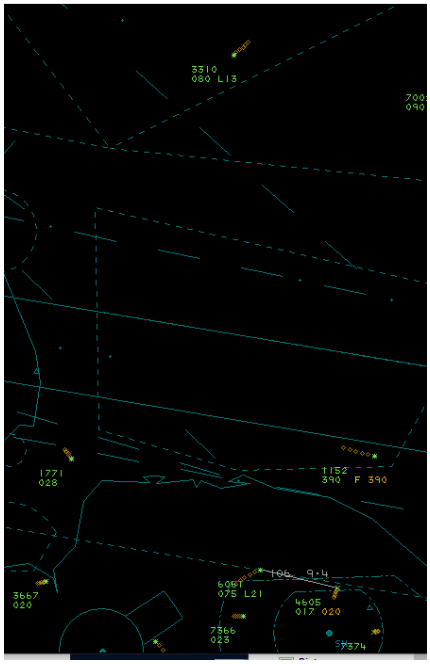

Figure 10: The position of the freecalling Typhoon in MDA 323 squawking 3310.

At 1518:50 the Swanwick Mil controller recieved a freecall from another Typhoon that reported they would be recovering to base with a technical issue in approximately five minutes time. Separation between the AW139 and Typhoon was measured at 9.4NM and 5800ft.

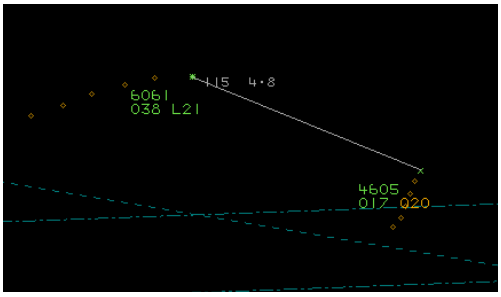

Figure 11:
Separation decreased below 5NM.

By 1524:03 separation had decreased to 4.8NM and 2100ft. During this time the Swanwick Mil controller was passing the local weather to the other Typhoon under their control to allow them to confirm a type of recovery.

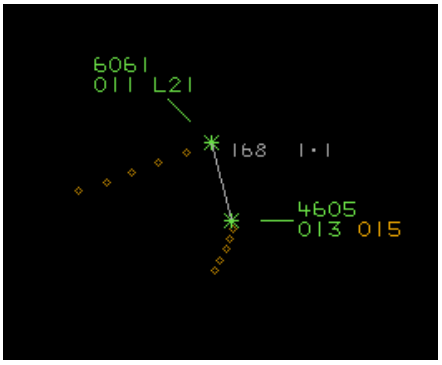

Figure 12: CPA.

At 1524:55 Traffic Information was passed to the Typhoon from the Swanwick Mil controller. CPA was measured at 1.1NM and 200ft.

By the controller's own admission their focus was on the freecalling Typhoon and they did not recognise the developing situation between the AW139 and the Typhoon until after standard separation was lost. It can be understood why priority was given to the freecalling Typhoon considering they had reported that they would be recovering to base with a technical issue. However, the controller should have divided their attention between all the aircraft under their control prioritising control action before administrative transmissions.

UKAB Secretariat

Although the Typhoon pilot reported speaking to the AW139 pilot on the VHF low-level frequency, when subsequently questioned, the AW139 pilot reported that they had not been aware of the frequency and had not spoken to the Typhoon pilot. Unfortunately the VHF low-level frequency is not recorded and so it was not known what aircraft the Typhoon pilot had spoken to.

The AW139 and Typhoon 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 Typhoon pilot was required to give way to the AW139.[2]

Comments

HQ Air Command

This Airprox was subject to a Local Investigation. Unfortunately, Traffic Information on the AW139 wasn't passed to the Typhoon pilot. The Swanwick Mil controller, who had only recently been endorsed, prioritised too much of their focus on a non-Airprox Typhoon departing the danger area and missed the conflict as the Airprox unfolded until it had passed. As the air picture became increasingly complicated within such congested airspace, the supervisor could have had more oversight of the situation given the controller's inexperience.

Due to the regular Traffic Information passed by Norwich and the AW139's TCAS, the AW139 crew were able to visually acquire the Typhoon. The pilot of the Typhoon made a call on the VHF Low Level Common Frequency and communicated their position to another user, which they believed to be the AW139. This was not the case as the AW139 was not on this frequency at the time. Low Level Common frequency is an excellent tool to build SA regarding other users below 2000ft AGL.

[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.

However, around the East Anglian airspace, it is reasonable to expect that users will be in receipt of an Air Traffic Service, owing to the proximity of LARS providers.

HQ Air Command fully supports the recommendations made by the Norwich investigation team and will be following this up with the organisers of the East Anglia Regional Airspace User Working Group. Communication and understanding the airspace, the users and the constraints cannot be underestimated when trying to mitigate Mid-Air Collision and it is encouraging to read "NAL HAO to initiate briefings for ATCOs at RAF(U) Swanwick and RAF Coningsby aircrew, with a subsequent invite for RAF personnel to visit NAL ATC."

Due to the distances within which the aircraft passed and that the AW139 pilot was visual with the Typhoon, the risk of collision was low. However, it does highlight the risks associated with working within that busy fillet of Class G airspace.

Summary

An Airprox was reported when an AW139 and a Typhoon flew into proximity 10NM north of Norwich at 1525Z on Tuesday 21st September 2021. The AW139 pilot was operating under IFR in VMC and in receipt of a Traffic Service from Norwich, the Typhoon pilot was VFR in VMC and in receipt of a Traffic Service from Swanwick Mil.

PART B: SUMMARY OF THE BOARD'S DELIBERATIONS

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. The Board agreed that the factors detailed in Part C had contributed to this Airprox.

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.

In their discussion of this Airprox the Board agreed that whilst the Airprox met all the requirements for reporting, normal safety standards and parameters had pertained and accordingly assigned a Risk Category E. However, during the course of their discussions they noted that with the busy helicopter routes that run from Norwich to the off-shore platforms the Typhoon pilot may have been better served to have called Norwich ATC as they descended to low-level in the area. Had they done so, the Airprox may have been completely averted because both pilots would have received accurate information on the other aircraft. The military members reminded the Board that the Typhoon was operated by a single pilot and that as such, workload could be high. However, members noted that the Typhoon pilot had called on the VHF low-level common frequency and thought that a better option would have been to call Norwich instead given that the North Sea helicopters always operated with a radar-based surveillance service as a mitigation to MAC whenever possible. Members welcomed the recommendation by Norwich that representatives from RAF Coningsby would be invited to the East Anglia Regional Airspace Working Group and hoped that such liaison would improve all parties' knowledge on the operations of each other. The Board also assigned the following contributory factors to the Airprox:

CF1. The Swanwick Mil Supervisor was engaged in admin tasks and so did not monitor the controller.

CF2, CF3, CF4. The Swanwick Mil controller was engaged in other tasks and so did not detect the conflict and therefore did not pass Traffic Information to the Typhoon pilot.

CF5. The STCA alerted at Norwich.

CF6. The Typhoon pilot could have called Norwich ATC when descending to low-level and routing close to the Norwich CAS.

CF7. The Typhoon pilot had no situational awareness on the AW139.

CF8. The AW139 pilot was concerned by the proximity of the Typhoon as seen on their TCAS.

CF9. The AW139 pilot received a TCAS TA.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2021191			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Manning and Equipment			
1	Human Factors	• ATM Leadership and Supervision	An event related to the leadership and supervision of ATM activities.	
	• Situational Awareness and Action			
2	Human Factors	• ANS Traffic Information Provision	Provision of ANS traffic information	TI not provided, inaccurate, inadequate, or late
3	Human Factors	• Conflict Detection - Not Detected	An event involving Air Navigation Services conflict not being detected.	
4	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
	• Electronic Warning System Operation and Compliance			
5	Technical	• STCA Warning	An event involving the triggering of a Short Term Conflict Alert (STCA) Warning	
	Flight Elements			
	• Tactical Planning and Execution			
6	Human Factors	• Communications by Flight Crew with ANS	An event related to the communications between the flight crew and the air navigation service.	Pilot did not request appropriate ATS service or communicate with appropriate provider
	• 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 or only generic, Situational Awareness
8	Human Factors	• Unnecessary Action	Events involving flight crew performing an action that was not required	Pilot was concerned by the proximity of the other aircraft
	• Electronic Warning System Operation and Compliance			
9	Contextual	• ACAS/TCAS TA	An event involving a genuine airborne collision avoidance system/traffic alert and collision avoidance system traffic advisory warning triggered	

Degree of Risk: E.

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:

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

Ground Elements:

Manning and Equipment were assessed as **partially effective** because the Swanwick Mil Supervisor was engaged in administrative tasks and so did not monitor the inexperienced controller.

Situational Awareness of the Confliction and Action were assessed as **partially effective** because the Swanwick Mil controller did not detect the confliction and did not pass Traffic Information.

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the Typhoon pilot could have called Norwich ATC as they descended into low-level.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the Typhoon pilot had no situational awareness of the AW139.