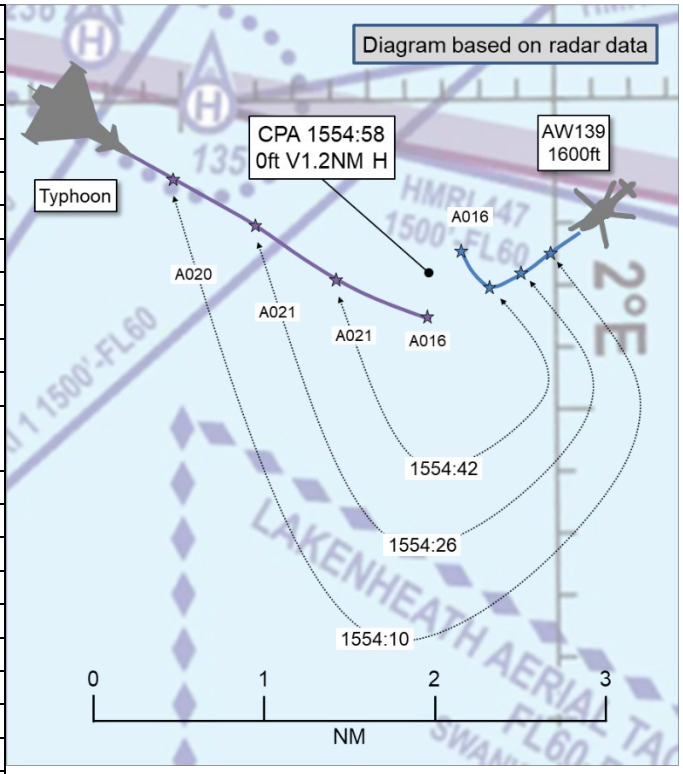
AIRPROX REPORT No 2023041

Date: 05 Apr 2023 Time: 1555Z Position: 5257N 00157E Location: 30NM NE 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	Deconfliction	Traffic
Provider	Anglia Radar	Swanwick Mil
Altitude/FL	1600ft	1600ft
Transponder	A, C, S	A, C
Reported		
Colours	White, red, blue	Grey
Lighting	Landing, nav, strobes	NR
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1500ft	1000ft
Altimeter	RPS (1014hPa)	NR
Heading	236°	NR
Speed	140kt	420kt
ACAS/TAS	TCAS I	NR
Alert	TA	NR
Separation at CPA		
Reported	0ft V/0.5NM H	NR V/NR H
Recorded	0ft V/1.2NM H	



THE AW139(4) PILOT reports that, whilst they were in the cruise towards Norwich, the crew was cognisant of an aircraft on TCAS, [when they had been] approximately at the Hewett Field. A company aircraft was given avoiding action. Later, [the pilot of AW139(4)] was given immediate avoiding action from their original track of 236° onto heading 360°. Whilst in the turn, the PM sitting in the left seat saw a fighter jet pass at the same level and approximately 0.5NM from them (confirmed from the aircraft's TCAS screen scale). This proximity would definitely have been closer had they not been given the avoiding action. The jet icon remained at 1500ft and within 5NM of their aircraft, but in their 6 o'clock. They were then told by Anglia [Radar] to resume their track towards Norwich.

About 1min later, they were given further immediate deconfliction action back onto north, with a further turn clockwise back towards their original track. At that point, the Anglia Radar controller apologised, and stated that they could no longer maintain separation and downgraded them to a Traffic Service. The jet(s) moved west and climbed so [the pilot of AW139(4)] descended to 500ft and continued towards Norwich with no further incidents.

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

THE TYPHOON(4) PILOT reports that on 6 April 2023 [they were informed that] an Airprox had been raised [concerning] a fighter aircraft in their operating area from a sortie the previous day. [The Typhoon(3)/(4) flight] was the closest of all Typhoons at the times notified.

On extensive inspection of mission debrief materials it was determined that neither of the formation [aircraft] were within 10NM of the specified location (Hewett Field) at the reported time of the incident (1550). The crews reviewed the tapes at length and the closest they knowingly came to rotary traffic was at 1557:13 at which time [Typhoon(4)] was westbound at 1000ft AMSL having gained radar-contact with a track manoeuvring away, 500ft above and no closer than 4NM. [The pilot of Typhoon(4)]

manoeuvred to the southwest to maximise deconfliction. This was coincident, and in agreement with, traffic calls from Swanwick Military from whom the formation was receiving a Traffic Service throughout.

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

THE ANGLIA RADAR CONTROLLER reports [that it had been] a quiet session on Anglia Radar. They had [AW139(1)] following [AW139(2)] with a slow catch-up and convergence. This was resolved by putting speed control on both aircraft. The catch-up was still happening, but at 6.5NM, [AW139(1) pilot] reported [that they were] visual with [AW139(2)] and happy to maintain their own deconfliction. Traffic Information was passed to [the pilot of AW139(2)] and speed control was cancelled. After this, their attention turned to the two helicopters that they had closer to Norwich when they saw that a military aircraft had descended low-level in the vicinity of [AW139(3)]. They passed Traffic Information to [the pilot of AW139(3)] at 6NM and instructed that "if not sighted, avoiding action turn right heading of 290°" (they can't be sure of the exact heading). As this was read back, they saw another low-level jet in proximity to [AW139(4)] at a range of 2NM. They immediately gave [the pilot of AW139(4)] avoiding action to turn to the north. After this, they noticed that [the pilot of AW139(3)] had not in fact taken the turn (thinking that maybe they had been visual with the military aircraft) but noticed that [the pilot of AW139(2)] to the north had taken the turn. Knowing that [the pilot of AW139(1)] behind [AW139(2)] was visual with them, [the Anglia Radar controller] continued to try to deconflict [AW139(3)] and [AW139(4)] from the two military jets, giving avoiding action another couple of times before advising that they could no longer provide deconfliction advice and reduced both aircraft to a Traffic Service. [The pilot of AW139(4)] advised that the military aircraft was about 0.5NM, same height and that they would be filing an Airprox. Both military aircraft were on Swanwick Military squawks, but [the Anglia Radar controller] didn't have time to call Swanwick Military to coordinate anything. A colleague came to help and called the military who eventually managed to get the aircraft to climb away.

THE SWANWICK MILITARY CONTROLLER reports that they had taken over the position with two Typhoons manoeuvring surface to FL160, with two more Typhoons joining initially looking to work FL170-190 on a discrete frequency north and northeast of Norwich while conducting manoeuvres. They were internally trying to arrange new levels between themselves. To avoid any confusion, [the Swanwick Military controller] gave all aircraft the same block with internal deconfliction, as they were all working together. During this time, the Norwich [controller] rang and asked for Traffic Information regarding the four Typhoons. [The Swanwick Military controller] gave them the levels and [the Norwich controller] asked if they could remain south of Y70 [a line between SUPEL and BODSO that passes through the north of the Hewett HTZ] and not below FL90. They informed the Norwich [controller] that they would negotiate with the [pilots] who would be a factor and get back to them. After giving Traffic Information to the one pilot that would be a factor, the pilot asked if they could do one more intercept before holding for the Norwich inbound. [The Swanwick Military controller] assessed that this would be safe and approved it. On completion of the intercept they gave an updated traffic call and phoned the Norwich [controller] to advise them that the Typhoons were now not below FL90.

Whilst their attention had been focused on the Norwich inbound, the Anglia Radar [controller] had phoned to ask for Traffic Information on their squawks northeast of Norwich. After informing them, [the Anglia Radar controller] told them they had gone into avoiding action with a helicopter inbound to Norwich. On being notified of this, [the Swanwick Military controller's] attention was drawn back to the Typhoons operating at around 1500ft off the coast. They passed Traffic Information [on the helicopters] and [the Swanwick Military controller] was told it would be relayed by the flight lead as the low-level aircraft was more than likely out of comms [range]. Having called a second track believed to be a helicopter, and the previous track, the [pilot of the] lead aircraft called radar contact. On completion of the final intercept, the [pilot of the] lead aircraft asked for a suitable heading to climb away from the traffic. [The Swanwick Military controller] advised them that a rough heading either northwest or southeast would be safe. The [pilot] then took a southeast heading and climbed to medium level. Shortly after, the Anglia Radar [controller] phoned back to inform that one of the helicopter pilots may be filing an Airprox, this was later confirmed by a further phone call to another controller.

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

Factual Background

The weather at Norwich was recorded as follows:

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METAR COR EGSH 051550Z 20009KT 160V230 CAVOK 13/02 Q1017 NOSIG
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Analysis and Investigation

NATS Aberdeen Unit Investigation

The pilot of [AW139(4)] informed the Anglia Radar controller that they intended to file an Airprox following an encounter with an unknown military fast jet in Class G airspace. Minimum separation between the two aircraft was recorded as 100ft/1.17NM.

Timeline of the event:

1543

Two military aircraft ([Typhoon(3) and (4)] displaying 6063 and 6064 SSR codes [respectively]) were manoeuvring in the vicinity of Cromer radar between Norwich Airport and the coastline, generally between FL080 and FL100. These aircraft were not constantly visible on the Anglia Radar controller's lower surveillance display, most likely due to their manoeuvres and close proximity to the radar overhead. The location was too far south to be displayed on the controller's upper display which shows Claxby radar data.

1548

Two additional military aircraft ([Typhoons (2) and (1)] displaying 6065 and 6066 SSR codes [respectively]) joined the same area from the west at FL170/FL180, but descended shortly afterwards.

1550

[Typhoon(3)] was at 110°/30NM from Cromer radar head tracking east-southeast. [Typhoons (4),(2) and (1)] were at or above FL100, generally within 10NM of Cromer radar.

1552

The Anglia Radar controller was dealing with a catch-up situation between [AW139(1)] and [AW139(2)], both at 2500ft in the north of the sector. The pilot of [AW139(1)] confirmed they had [AW139(2)] in sight, which satisfied the deconfliction requirements under the MoU that exists between NATS and the North Sea helicopter operators.

[Typhoon(3)] was then 22NM east of Cromer radar tracking northwest at 2100ft and [Typhoon(4)] was at 100°/11NM from Cromer radar at FL069, tracking east. [AW139(4)] was 9NM northeast of [Typhoon(3)] at 1500ft, tracking southwest.

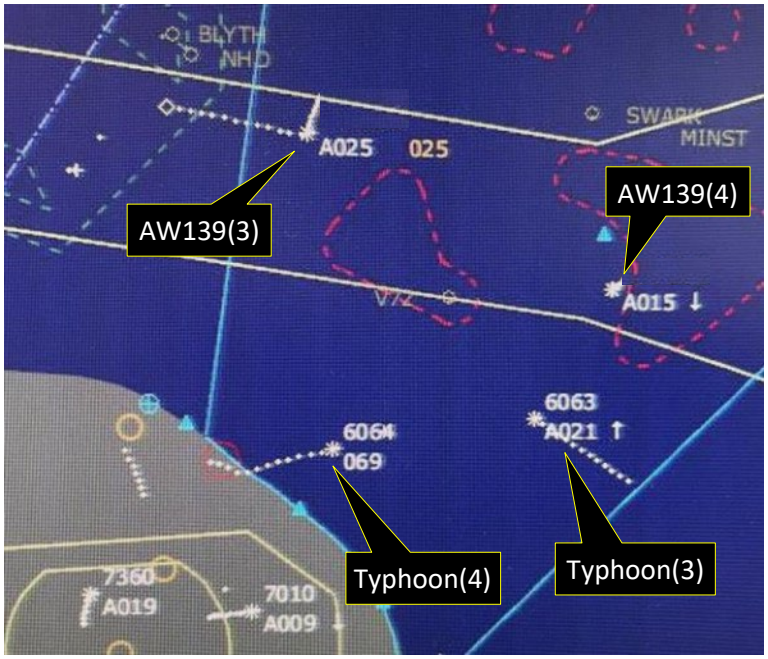


Figure 1 - 1552:00

1552:42

Anglia Radar: "[AW139(2)] no speed restriction now."
[AW139(2)]: "[AW139(2) callsign]"
Anglia Radar: "[AW139(1)] no speed restriction."
[AW139(1)]: "[AW139(1) callsign]"

1553:00

[Typhoon(3)] was at position 080°/16NM from Cromer radar at 2000ft. [Typhoon(4)] was approaching [Typhoon(3)] from behind at 3200ft and descending, appearing to formate with [Typhoon(3)] as they tracked northwest. [AW139(3)] was 13NM northwest of [Typhoon(3)] at 2500ft, tracking 200°. [Typhoons (2) and (1)] were still operating between Norwich Airport and the north Norfolk coast at FL135 and above.

1553:40

[Typhoon(3)] was at position 060°/12NM from Cromer radar at 2300ft tracking west. [Typhoon(4)] was at position 080°/12NM from Cromer radar at 2000ft in a right turn. [AW139(3)] was 8NM north northwest of [Typhoon(3)] at 2500ft tracking 200°. [AW139(4)] was 9NM east of [Typhoon(4)] at 1500ft tracking 240°.

1553:54

[Typhoon(3)] was at 2300ft and [Typhoon(4)] at 2100ft.
Anglia Radar: "[AW139(2)]* two aircraft…er…military aircraft in your 10 o'clock at a range of seven miles low level, one of them is in your 11 o'clock now at 6 miles indicating 2200ft if not sighted avoiding action turn right heading 250°."
[AW139(2)]: "Right 250, [AW139(2) callsign]."

* Note: This instruction was intended for [the pilot of AW139(3)] as [Typhoon(3)] was converging with them from the east, however the controller erroneously used the callsign of [AW139(2)], with the pilot of [AW139(2)] responding.

1554:20

[The pilot of Typhoon(4)] turned back towards [AW139(4)]. Separation between [AW139(4)] and [Typhoon(4)] was then 4.73NM/525ft.
Anglia Radar: "[AW139(4)] avoiding action turn immediately right heading north."
[AW139(4)]: "Turn right immediately heading north, [AW139(4) callsign], looking for traffic."
Anglia Radar: "[AW139(4)] that traffic is west of you by five miles indicating 2000ft."
[AW139(4)]: "Looking."

1554:36

[The pilot of AW139(2)] commenced a right turn at 2500ft bringing the aircraft into the track of [AW139(1)], which was 5.4NM northwest of [AW139(2)].

1554:48

[Typhoon(4)] was descending through 1700ft and separation was then 2.32NM/225ft.
[AW139(4)]: "[AW139(4)] visual with the traffic."
Anglia Radar: "Roger with that traffic in sight then you can resume your own navigation, thank you."
[AW139(4)] "Yeah, we'll stay north for a while, he's just coming down our left side, it's a fighter jet."

1554:50

Red RDP STCA Safety Net activated between [AW139(4)] and [Typhoon(4)].

1554:55

Anglia Radar: "[AW139(3)] that previously mentioned traffic has now climbed in your 12 o'clock at FL90 indicated."
[AW139(3)]: "That's copied, thank you [AW139(3) callsign]"

1554:58

[AW139(4)] and [Typhoon(4)] Closest Point of Approach was 1.17NM/100ft.

1555:00

Orange RDP STCA Safety Net activated between [AW139(1)] and [AW139(2)]. [AW139(1)] was in [AW139(2)]'s 2 o'clock position with a separation of 4.27NM/0ft.

1555:17

Orange STCA alert disappeared.

1555:23

Red RDP STCA Safety Net activated between [AW139(1)] and [AW139(2)].

1555:29

[AW139(2)]: "And Anglia [AW139(2) callsign], was that traffic affecting us?"
Anglia Radar: "[AW139(2)] Anglia radar, negative continue, in fact, turn left heading, back to Norwich."
[AW139(2)]: "Back to Norwich [AW139(2) callsign]."
Anglia Radar: "And [AW139(1)] you still visual with that [company] aircraft?"
[AW139(1)]: "Yeah, [AW139(1)] affirm we've got him visual, we'll just slow down another 10kts so he can get out of our way."
Anglia Radar: "Thank you."

This ensured the requirements for visual deconfliction between [AW139(2)] and [AW139(1)] were still met.

1556

The [AW139(4) and Typhoon(4)] confliction was now resolved as [AW139(4)] tracked north. [AW139(3)] was at position 030° and 10NM from Cromer radar at 2500ft tracking 190°. [AW139(2)] was starting a left turn towards Norwich. [Typhoon(3)] was at position 330° and 5NM from Cromer radar at FL090 tracking west.

1556:05

Donna Nook range controller called the Anglia Radar [controller] to advise the range was now closed.

1556:06

[AW139(2)]/[AW139(1)] Closest Point of Approach – 1.61NM/0ft

1556:28

[AW139(4)]: "[AW139(4)] now back on track to Norwich. That jet was the same height as us within about half a mile or thereabouts."
Anglia Radar: "[AW139(4)] roger, are you going to be filing an Airprox?"
[AW139(4)]: "Yep."
Anglia Radar: "OK."

1556:46

[The pilot of Typhoon(4)] had turned round and was tracking west at 1100ft, 9NM east-southeast of [AW139(4)].
Anglia Radar: "[AW139(4)] that traffic is now in your 8 o'clock at a range of seven miles indicating 1100ft tracking west."
[AW139(4)]: "Copied traffic [AW139(4) callsign]."

1557:04

Anglia Radar: "[AW139(4)] if not sighted turn north again."
[AW139(4)]: "Turning north [AW139(4) callsign]."

1557:40

Phone call initiated on an adjacent sector to Swanwick Mil. This was undertaken by another controller (ATCO) due to the Anglia Radar controller's workload:
ATCO: "Hi it's Anglia Radar, [Typhoon(4)] northeast of Norwich, are you speaking to him because he's getting in the way of our helicopters and getting very close and they're on a deconfliction service."
Swanwick Mil: "Sorry (unintelligible) yeah, I'll let them know."
ATCO: "They're going straight towards another helicopter coasting into Norwich."
Swanwick Mil: "I'll let them know."

1557:45

[AW139(4)]: "Anglia, [AW139(4) callsign], update on that traffic?"
Anglia Radar: "Yeah, just going through your 6 o'clock 1300ft. Continue that right turn back round to Norwich and hopefully that will be east of you…errr…west of you by then."
[AW139(4)]: "Roger, continue right turn. We've got an indication but he's in our 6 o'clock minus 100ft."

Anglia Radar: "We're just speaking to Swanwick Mil at the moment.

1558:24

Anglia Radar: "[AW139(3)] there's another military aircraft east of you heading west at 1500ft in the climb…in fact not climbing that quickly, I'm giving you avoiding action to left heading 130°."
[AW139(3)]: "Left 130 that's copied [AW139(3) callsign], we've got the traffic in our 1 o'clock in sight, nothing else at the moment." The traffic sighted is likely to have been [uninvolved aircraft]).
Anglia Radar: "And [AW139(3)] actually make that 170°."
[AW139(3)]) "170, [AW139(3) callsign]."

1559:00

[AW139(3)] was at position 070° 4NM from Cromer radar at 2500ft tracking 190°. Typhoon(3) was at position 100° 11NM from Cromer radar at FL072 but descending tracking 040°.

Typhoon(4) was at position 080° 12NM from Cromer radar at 1600ft tracking 265° which was then tracking towards [AW139(3)].

1559:17

[AW139(3)]: "Anglia [AW139(3)] would it help if we descended to 1500ft?"

Anglia Radar: "[AW139(3)] that traffic is indicating 1600ft now. They are in your 10 o'clock at a range of four miles, east…errr…westbound."

[AW139(3)]: "OK that's just popped up for us as well now, not visual, but we've also got traffic out to our right, [AW139(3)] callsign."

Anglia Radar: "Yeah, I can see that too, I'm sorry I'm going to have to drop you to a Traffic Service 'cause I can't really get you avoiding these aircraft now."

[AW139(3)]: "OK it's a pair, we've got a pair out in the left now, both in sight [AW139(3)] callsign."

Anglia Radar: "[AW139(3)] roger with that traffic in sight then report your heading to Norwich Radar, in fact resume own navigation to Norwich and contact them on 119.355."

[AW139(3)]: "That's all copied to Norwich 119.355 thanks for your help [AW139(3)] callsign."

Anglia Radar: "Sorry I couldn't do any more."

[AW139(3)]: "No, no problem, looks like they're turning round again but they are low level, looks like they're preoccupied with themselves though."

Anglia Radar then issued Traffic Information to [AW139(4)] as [Typhoons(3) and (4)] were now heading back towards [AW139(4)]. Anglia Radar also changed the service to Traffic Service.

1600:00

[AW139(3)] was at position 100° 4NM from Cromer radar at 2500ft tracking 160°. [Typhoons(3) and (4)] were in formation at position 090° 6NM from Cromer radar at 1300ft and 1500ft [Typhoon(3) and Typhoon(4) respectively].
[AW139(4)] was at position 080° 17NM from Cromer radar at 1500ft tracking 230°.

1600:25

Anglia Radar: "[AW139(4)] previously mentioned aircraft has joined another, they're in your 12 o'clock manoeuvring, range of six miles. I'm going to have to drop you to Traffic Service, I really can't have you avoiding them anymore."
[AW139(4)]: "Traffic Service and we're going to descend to 500ft, [AW139(4) callsign]."
Anglia Radar: "[AW139(4)] I've got no known traffic to affect that descent apart from those two."
[AW139(4)]: "Copied."

1601:00

[The pilots of Typhoons(3) and (4)] tracked southeast and commenced a climb away from the Anglia Radar sector.

1603:00

A further phone call was conducted with Swanwick Military:
Swanwick Mil: "Swan Mil East."
ATCO: "Hi, it's Anglia Radar. [Typhoons(3) and (4)], are they going to be remaining well clear of our aircraft now and above?"
Swanwick Mil: "Yeah, I've pointed them out to them they've said they've got radar contact, I don't believe any of them have been below FL100."
ATCO: "OK, I believe there may have been an Airprox filed by one of our helicopters so you may want to pass that on to them."

Typhoon pilot feedback:

Feedback has been received from the OC of the [Typhoon base] Safety Cell. The crew provided responses to specific questions submitted to them as follows:

Q1. Is this an area where the crew have conducted low level sorties before? If so, do they frequently plan to operate in the area between the Norfolk coast and MDA323 complex below 5000ft?

A1. Ordinarily the crews would not operate in this area as a first choice due to the busy transit routes. However, there is a lot of essential operational training for the Typhoon Force that needs to be completed and so there are times when crews do need to operate there.

Q2. If operating in this area is not a common occurrence, why was it selected on this occasion?

A2. The pilots were conducting essential pre-operational deployment training for an upcoming deployment. This had been planned to include training on the range at Holbeach, however, on the day the weather over the range was poor and they were not able to complete that planned training. As [the] available window to complete the training before deployment was short, they elected to conduct their mandatory high to low intercept training in that area. The weather to the west overland was too poor for the planned serial and they did not have D323 available for them.

Q3. With respect to the confliction between [Typhoon(4)] and [AW139(4)] at 1554:58, did the pilot visually acquire the helicopter and if so did they make any avoidance manoeuvre as a result?

A3. Not visually acquired and not called to them by Swanwick.

Q4. If [AW139(4)] was not seen visually, was the pilot aware of the aircraft's position through EC means?

A4. No.

Q5. What were the flight conditions experienced by the crew during the ten minute period at low level, e.g. good VMC at all times, marginal VMC or partial IMC?

A5. VMC over the sea, poor inland.

Q6. Are the crew aware of the Offshore Safety Area (highlighted on the attached AIP chart marked 'Anglia OSA SFC-3500ft') and the associated procedures as detailed in UK AIP ENR 1.6 Para 4.5.1.5.3?

A6. The pilots believed that Swanwick would provide coordination with Anglia Radar as they would expect when they use Hotspur for a radar service when operating in D323.

Q7. How much background awareness do the crew have on helicopter operations in support of the offshore energy business in the southern North Sea? For example, typical operating areas and altitudes?

A7. Crews are very aware of the helicopter operations in that area, including operating areas and altitudes, and they actively look to deconflict with the helicopter traffic. Out of preference they would operate in the D323, however, this was not available to them at this time and they needed to complete essential operational training prior to a deployment. We have already been working with [the helicopter operator] to enhance further the communication and understanding of each other's operations in this airspace; we are meeting with them and other airspace users next week.

Swanwick Military feedback:

Feedback has been received from an ATC investigator at Swanwick Military. The investigator provided responses to specific questions submitted to them as follows:

Q1. What, if any, restrictions were in place on the crews' movement?

A1. No restrictions were in place.

Q2. Was traffic information passed on any Anglia Radar helicopter traffic, specifically [AW139(3)] (4604 code) and [AW139(4)] (4605 code)?

A2. No traffic information was passed by the controller to [the pilot of Typhoon(4)] reference the 4605 squawk.

Q3. Did the pilots report visual with either of these aircraft at any time?

A3. Pilots did not call visual with any rotary traffic.

Q4. Were the pilots aware of the Anglia Offshore Safety Area as stated un UK AIP ENR 1.6?

A4. This is not something the controller would pass on. I do not know if the pilot was aware.

The classification of the airspace in which this event took place is Class G, however the location does lie within the Anglia Offshore Safety Area (OSA) which extends from the surface to 3500ft.

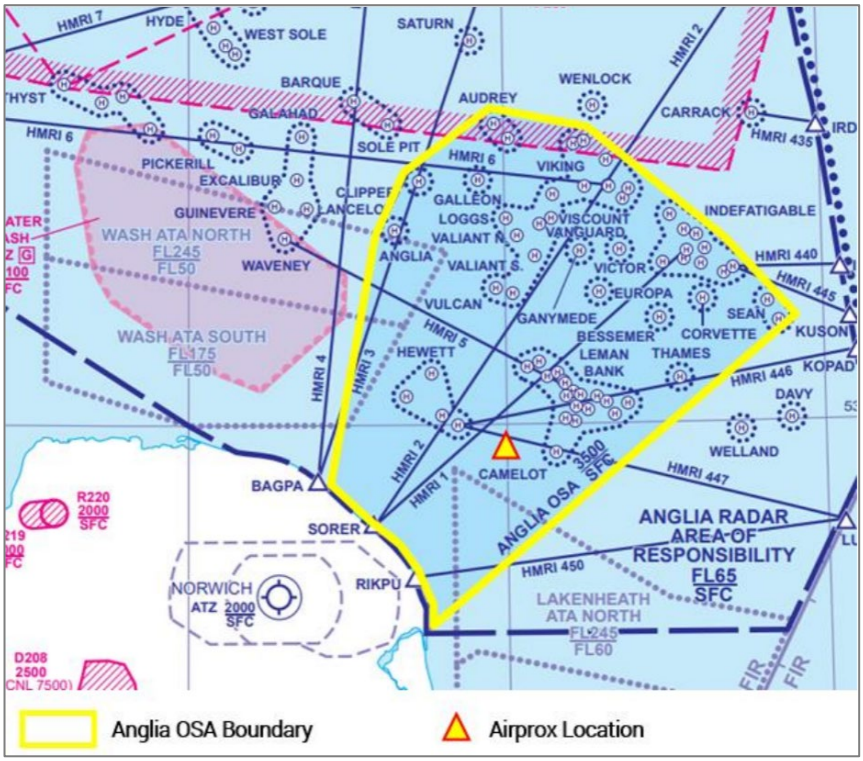


Figure 2 - Procedures for the Anglia OSA are published in UK AIP ENR 1.6

UK AIP ENR 1.6, 4.5.1.5.3.2 - Fixed-Wing Procedures:

Military and civil pilots of fixed-wing aircraft are recommended to avoid the Anglia OSA, however, if penetration is essential, contact should be made with Anglia Radar no later than 10NM before entering the area giving their position, altitude, squawk, heading and intentions. When unable to maintain contact with Anglia Radar, and where not previously allocated a squawk by Anglia Radar, pilots should squawk A0007 with ALT (or Mode C) selected. Maritime patrol aircraft (MPA) and fisheries protection aircraft should squawk A7300 with ALT (or Mode C) selected.

No attempt was made by the crew to contact Anglia Radar and although the crew were asked a direct question if they were aware of the OSA, their response did not confirm or deny this, instead they believed Swanwick Mil would liaise with Anglia Radar on their behalf.

Conclusion:

A fast jet aircraft was manoeuvring over the North Sea at low level (generally below 3000ft for much of the time) and operating in an area of frequent helicopter movements between Norwich Airport and offshore installations. The pilot was in receipt of a Traffic Service from Swanwick Mil, but did not receive any Traffic Information on [AW139(4)], nor did the pilot visually acquire [AW139(4)] or have awareness of its presence through EC means. The pilot of [Typhoon(4)] did not contact Anglia Radar to operate within the Anglia OSA as suggested in the UK AIP, but instead appeared to be of the understanding that Swanwick Mil would coordinate with Anglia Radar. The Anglia Radar controller provided good avoiding action to the crew of [AW139(4)] throughout the event, however made a callsign error and issued an avoiding action turn to [the pilot of AW139(2)] instead of [AW139(3)]. Although this had the effect of bringing [AW139(2)] into closer proximity with [AW139(1)], it did not affect the proximity between [AW139(4)] and [Typhoon(4)] or adversely affect the safety of [AW139(3)]. The pilot of [AW139(1)] had already confirmed they were visual with [AW139(2)] and stated they would slow down to position behind [AW139(2)] once the latter had turned back towards Norwich.

The crew of [AW139(4)] promptly followed the avoiding action turns issued by the controller, with separation between this aircraft and [Typhoon(4)] reducing to 1.17NM/100ft at the closest point of approach. The crew of [AW139(4)] reported visual contact with the Typhoon shortly before this point.

NATS Unit Management commentary:

- Representatives from [the helicopter operator] have met with the RAF to discuss this event and other similar incidents.

- A presentation on southern North Sea helicopter operations and Anglia Radar has been sent to Swanwick Mil and RAF Coningsby in order to improve awareness of ATCOs and pilots of the helicopter operation taking place in the southern North Sea.

- A meeting was held between [the helicopter operator], NATS and USAF to discuss operations within Class G airspace. Discussions were productive and it is hoped engagement will continue.

- The issue was discussed at the southern North Sea Operators meeting, which was also attended by RAF and USAF.

Military ATM

Utilising occurrence reports and information from the local investigation, outlined below are the key events that preceded the Airprox. Where available, they are supported by screenshots to indicate the positions of the relevant aircraft at each stage.

The Swanwick Military controller was providing a Traffic Service to two pairs of Typhoons operating on the North Norfolk coast. The low-level pair was operating in the block Surface to FL160, with the additional pair operating in a medium level altitude block. Due to the proximity of the formations to Norwich, the Swanwick Military controller had vertically restricted the Typhoon formations to facilitate a Norwich inbound from the airway structure.

Typhoon(4) was the aircraft involved in the Airprox, whilst [the pilot of] Typhoon(3) was the formation lead and was conducting similar profiles in the area.

At 1545:20, the pilot of Typhoon(3) informed the Swanwick Military controller of their intention to enter low-level and requested information on any traffic to affect. The Swanwick Military controller informed the pilot of Typhoon(3) that there was no traffic to affect and confirmed that the formation would be maintaining the current frequency on entry to and exit from low-level.

At 1553:57, the pilot of Typhoon(3) informed the Swanwick Military controller that they were complete low-level, looking to climb back to medium level, and requested confirmation that the Norwich inbound traffic was no longer a factor. The Swanwick Military controller approved a climb not above FL90.

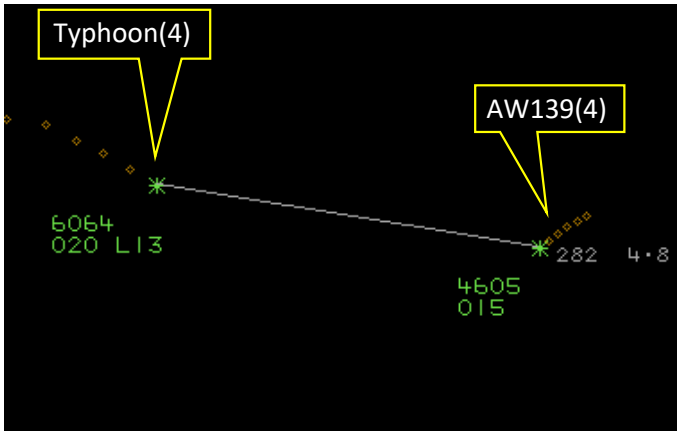


Figure 3 - 1554:24. Lateral separation between Typhoon(4) and AW139(4) fell below 5NM. (Separation 4.8NM)

At 1554:24, the lateral separation between Typhoon(3), operating in the block of Surface to FL160, and AW139(4), transiting at 1500ft QNH, fell within 5NM. No Traffic Information was provided by the Swanwick Military controller regarding AW139(4).

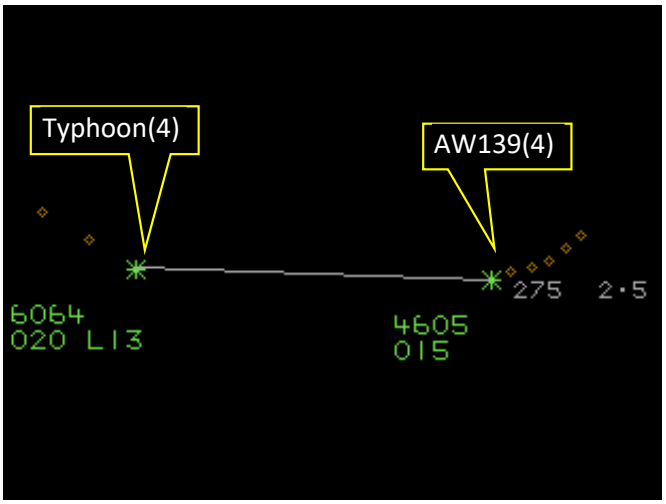


Figure 4 - 1554:44. The position of Typhoon(4) when they had informed the Swanwick Military controller of their low-level entry intentions. (Separation 2.5NM)

At 1554:44, the pilot of Typhoon(4) informed the Swanwick Military controller of their intentions "*intention will be a similar profile to* [Typhoon(3)] *to enter low level in approximately 3 miles*". The Swanwick Military controller acknowledged the pilot of Typhoon(4) and informed them "*I will keep you up to date on civil traffic*". Again, no Traffic Information was provided by the Swanwick Military controller regarding AW139(4).

At 1554:52, the avoiding action passed by Anglia Radar for the pilot of AW139(4) was observable to the Swanwick Military controller with a distinct change in direction from southwest to northwest. CPA was measured at 1.2NM and 0ft separation.

At 1557:38, Anglia Radar called the Swanwick Military controller regarding the intentions of the Typhoon formations at which point, at 1557:44, Traffic Information was provided to the Typhoon formation on the AW139(4).

The local BM investigation conducted by 78 Sqn (Swanwick Military) identified the cause of the Airprox as a loss of safe separation between non-co-operating aircraft due to a lack of Traffic Information provision by the controller. Several BM-related causal/aggravating factors were then identified that were believed to have contributed to the Airprox:

- The controller either did not see through a poor scan pattern or did not correctly assess the traffic picture regarding the proximity of AW139(4).
- The [controller screen] Data Information Block for Typhoon(4) momentarily obscured the Data Information Block of AW139(4), reducing the likelihood of conflict recognition.

As a result of the causal factors identified, the following mitigation for local action was proposed by 78 Sqn (Swanwick Military):

- Remedial training for the controller was conducted and recorded.

As the local investigation has identified, the Swanwick Military controller, whilst aware of the Typhoon(4) pilot's intentions, didn't scan correctly and assess the traffic picture. Traffic Information was required to have been passed prior to the pilot of Typhoon(4) stating their intentions because of the lateral separation and the Typhoon formation's operating block. The intention message from the pilot of Typhoon(4) provided a reminder to the Swanwick Military controller that was not acted upon, and no Traffic Information was provided.

In addition to the local investigation, the following BM-related causal/aggravating factor was identified by 2 Gp BM:

- The 78 Sqn Squadron Order Book provides no direction to controllers regarding notification requirements to Anglia Radar when controlling fast jet operations to surface in LFA5. When considering the nature of the Anglia Radar task and routine Deconfliction Service requirement for transiting helicopters, it is essential that Anglia Radar be made aware of fast-jet intentions.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and all four AW139s and all four Typhoons could be positively identified from Mode S data. The positions of the aircraft shown in Figures 5 to 11 are taken from the radar replay, coloured and stylised for clarity.

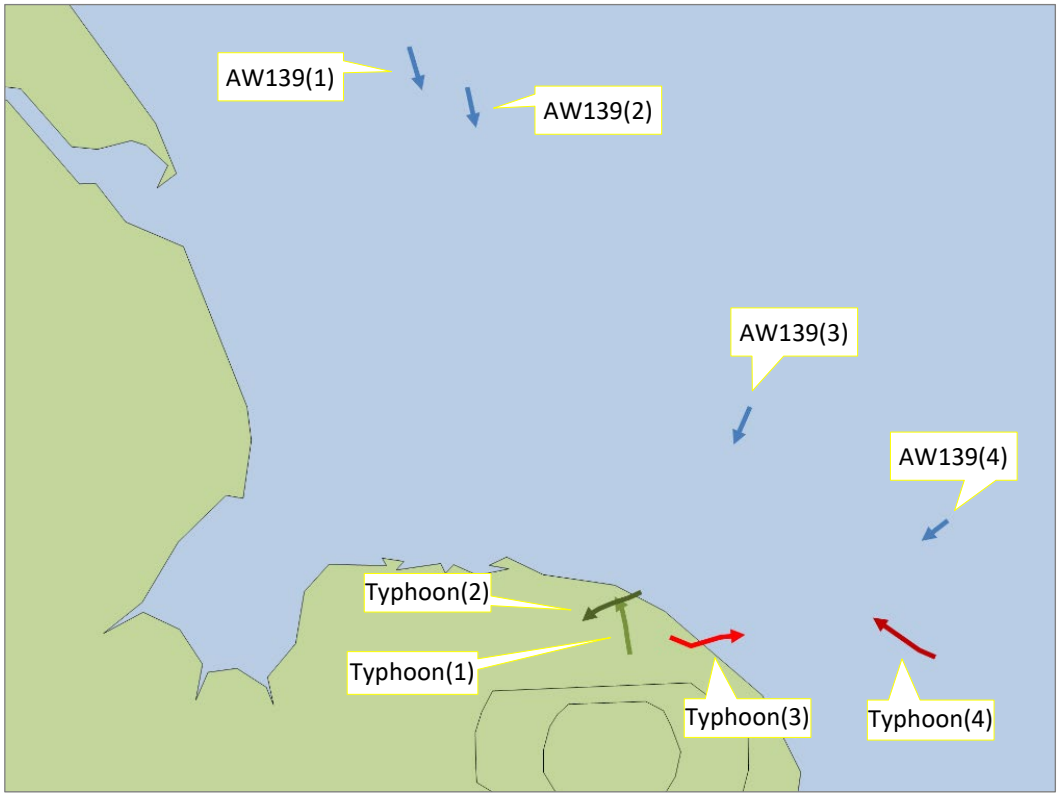


Figure 5 – Aircraft positions at 1552

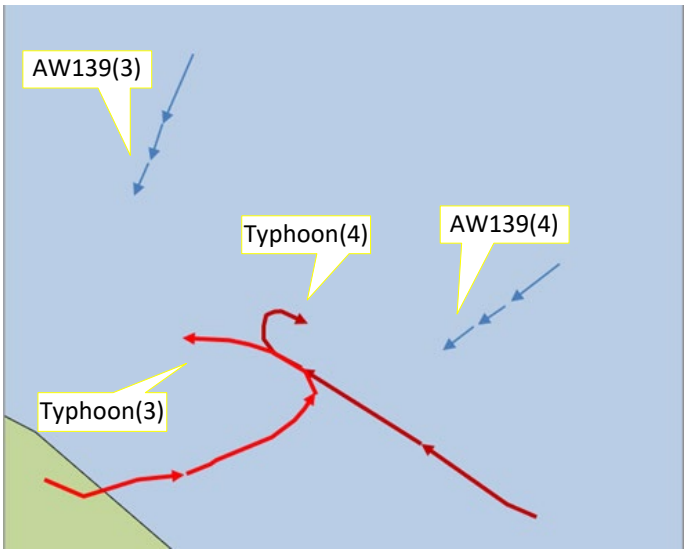


Figure 6 - Aircraft positions at 1554

Traffic Information on Typhoon(3), intended for the pilot of AW139(3), had inadvertently been passed to the pilot of AW139(2) at 1553:54. Meanwhile, the pilot of Typhoon(4) had turned eastwards.

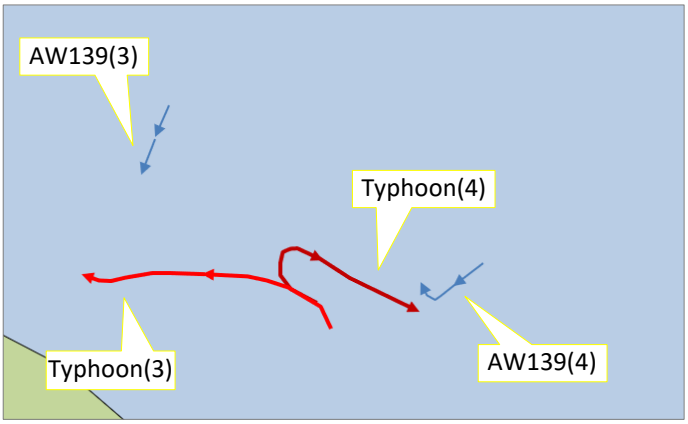


Figure 7 – Aircraft positions at 1555

Avoiding action had been issued to the pilot of AW139(4) at 1554:20. The pilot of AW139(4) had turned and reported being visual with the traffic at 1554:48. An STCA between AW139(4) and Typhoon(4) activated at 1554:50 and CPA occurred at 1554:58.

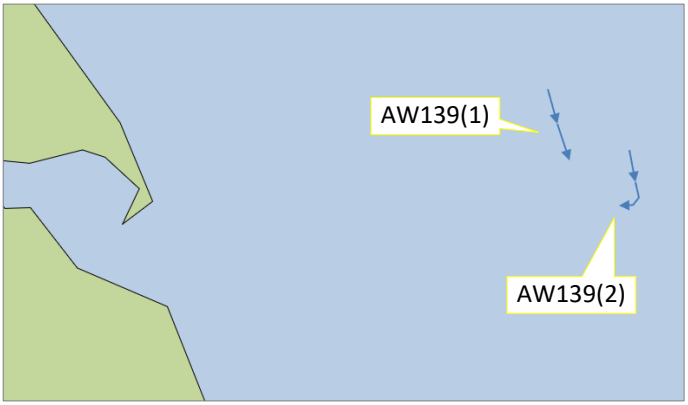


Figure 8 – Aircraft positions at 1555

The avoiding action passed at 1553:54, intended for the pilot of AW139(3), had inadvertantly been passed to the pilot of AW139(2) who had turned. An orange STCA activated between AW139(1) and AW139(2) at 1554:58, replaced by a red STCA at 1555:23.

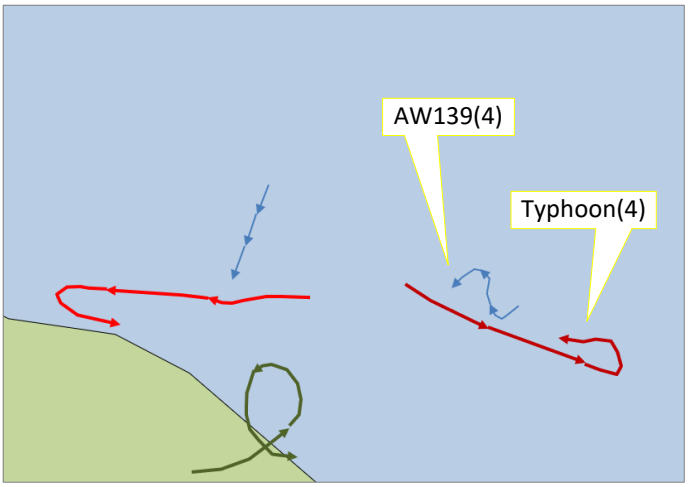


Figure 9 - Aircraft positions at 1557

The pilot of AW139(4) had resumed their original track. Meanwhile, the pilot of Typhoon(4) had turned westwards and, subsequently at 1557:04, the pilot of AW139(4) had been given avoiding action for the second time.

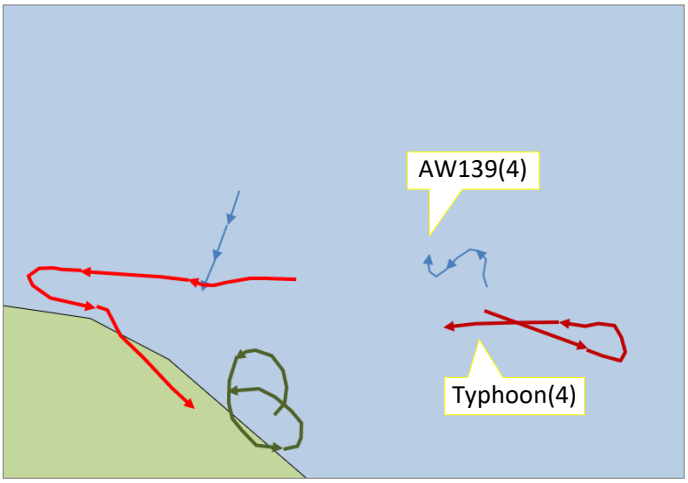


Figure 10 – Aircraft positions at 1558

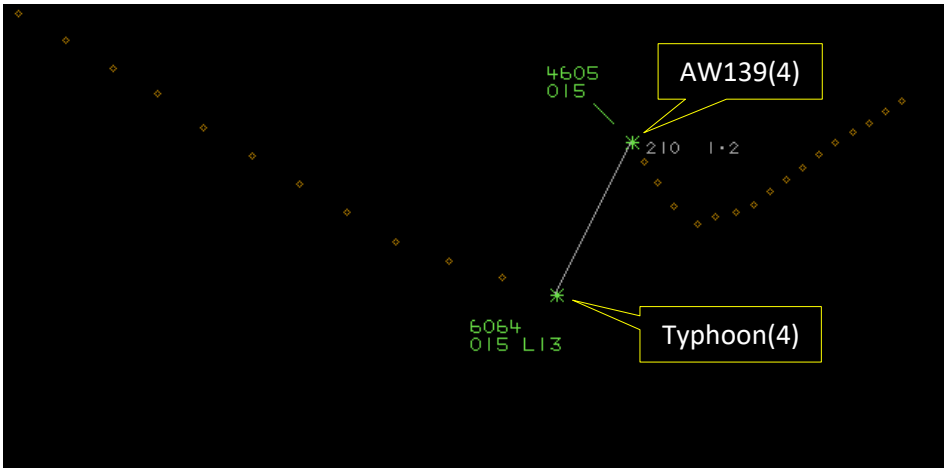


Figure 11 – CPA occurred at 1554:58 between AW139(4) and Typhoon(4) after the first avoiding action had been issued.

The AW139(4) and Typhoon(4) 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 AW139(4) pilot was required to give way to the Typhoon(4).[2]

Comments

HQ Air Command

Conducting tactical manoeuvres inside segregated airspace is favoured rather than inside the North Sea OSAs. In this case, a low-level intercept was required for operational reasons and the provision of airspace affording such segregation was unavailable. Whilst the AIP explains procedures for the OSAs, it can be challenging for fast-jet pilots to conduct the intercept training when they must monitor other frequencies, especially given the intercept profile would take them quickly between Swanwick and Anglia Radar areas of responsibility. For this reason, the formation delegated responsibility for contacting Anglia Radar to Swanwick. It's unfortunate that timely Traffic Information on the AW139 was not passed to the Typhoon pilots by Swanwick Mil. With hindsight, direct communication with Anglia Radar would have provided better awareness to the Typhoon pilots and one of the formation members could have monitored this frequency directly. This would have introduced scope for confusion though, as the formation would be split across different controlling frequencies. Given these conflicting interests, HQ Air Command and RAF Coningsby representatives have attended flight safety meetings with [the helicopter operator] and NATS to improve coordination and mutual understanding of each other's operations. As a result, fast-jet pilots

[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.

have been reminded of the AIP procedures via internal communication. Guidance in the RAF Coningsby Flying Order Book has also been improved regarding operations at low-level close to Norwich and within the OSA.

Summary

An Airprox was reported when an AW139 and a Typhoon flew into proximity 30NM northeast of Norwich at 1555Z on Wednesday 5th April 2023. Both pilots were operating in VMC, the AW139 pilot operating under IFR and in receipt of a Deconfliction Service from Anglia Radar and the Typhoon pilot operating under VFR and 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 first considered the actions of the pilot of the AW139. Members noted that they had received a TCAS alert to the proximity of traffic (**CF12**) and that, subsequently, had heard on the Anglia Radar frequency that a company aircraft on a similar routeing had been given avoiding action. Moments later, the pilot of the AW139 had also been given immediate avoiding action and it had been during their right turn that the pilot in the left seat had visually acquired the Typhoon. From the analysis of the encounter, members understood that the moment of CPA had occurred during that avoiding turn but appreciated that the episode had not concluded at that point and had continued to have caused the pilot of the AW139 considerable concern (**CF14**). After approximately two minutes, the pilot of the AW139 had turned back to their original track when, seconds later, further avoiding action had been passed by the Anglia Radar controller, and the pilot of the AW139, having lost visual contact with the Typhoon, had turned to head northwards again. Members were in agreement that there had been nothing further that the pilot of the AW139 could have done to have ameliorated the situation and turned their attention to the actions of the pilot of the Typhoon.

Members reviewed the entry in the AIP concerning the Offshore Safety Area (OSA) and noted that, whilst recommending that both military and civil pilots avoid the OSA, if penetration had been essential, that contact should be made with Anglia Radar no later than 10NM before entering the area. A member with particular knowledge of military fast-jet operations, explained that there had been a genuine need at that time to have conducted that particular sortie, and that the poor weather over alternative areas had meant that it had been essential to have operated at low-level over the sea on the day in question. In the light of that statement, members next considered the requirement to have made contact with Anglia Radar ahead of their entry into the OSA. It was clear to members that the responsibility had lain with the pilot of the Typhoon to have ensured that contact had been made with Anglia Radar. As such, it was agreed that there had been an assumption on the part of the Typhoon pilot that they had devolved that responsibility to the Swanwick Military controller. In further consideration of the choice of area for their operations, one member suggested that there had been less than adequate adaption of the Typhoon pilot's plan in that they had simply moved their operation geographically due to the poor weather but had not fully considered the implications of the change of location. Members appreciated that perspective, but concluded that the plan had been adapted to the weather constraint adequately, although agreed that consideration of the entry to the OSA had required further understanding during the Typhoon pilot's pre-flight briefing (**CF10**). The practicalities and difficulties of managing several radio frequencies to enable coordination between the various ground and flight elements was explained to members. Whilst some members expressed some sympathy with that view, ultimately, members were in agreement that the pilot of the Typhoon had deviated from the procedure in the AIP (**CF7**) and had entered the promulgated and active airspace of the OSA (**CF9**) without having communicated their intention to have done so to Anglia Radar (**CF8**). Members indicated that they had nothing further to add to the discussion regarding the nature of the Typhoon pilot's sortie other than to note that they had not received any Traffic Information on the AW139 and had therefore had no Situational Awareness of

the presence of the AW139 in the area (**CF11**). Additionally, it was noted that the pilot of the Typhoon had not visually acquired the AW139 (**CF13**).

Members next turned their attention to the actions of the Swanwick Military controller, and noted that, moments before CPA, the pilot of the Typhoon had informed the Swanwick Military controller that they had intended 'to enter low-level'. The extensive investigation material available to the Board had highlighted that there had been no explicit directions for the Swanwick Military controller to have notified Anglia Radar that pilots to which they had been providing a service had intended to enter the OSA. Notwithstanding, some members suggested that it would not have been unreasonable to have expected the Swanwick Military controller to have co-ordinated more closely with the Anglia Radar controller, and it was agreed that inadequate coordination had been a significant contributory factor in this incident (**CF3**). Nevertheless, the Swanwick Military controller had replied to the Typhoon pilot that they 'would keep you up to date on the civil traffic' but this had, apparently, not prompted an effective scan of the civil traffic. It had been just seconds later that the Anglia Radar controller had issued avoiding action to the pilot of the AW139 and had subsequently contacted the Swanwick Military controller by telephone to explain the situation. Members were in agreement that, despite being able to observe the AW139 on their radar screen, the Swanwick Military controller had, effectively, not had any Situational Awareness of the AW139 (**CF5**) and had not detected the conflict (**CF4**). In consideration of the Traffic Service that they had been providing to the pilot of the Typhoon, members agreed that the Swanwick Military controller had not complied with the applicable Air Traffic Management procedures (**CF1**) by not passing Traffic Information on an aircraft (the AW139) when there had been a potential conflict (**CF2**).

Turning their attention to the actions of the Anglia Radar controller, members noted that they had been providing a Deconfliction Service to the pilots of the four AW139s routeing from the Hewett Field when they became aware of a Typhoon descending in the vicinity of one of the AW139s. The Anglia Radar controller had, inadvertently, passed avoiding action to the wrong pilot through the use of an incorrect callsign, but members were quick to agree that this had not been germane to the Airprox incident. Members were also in agreement that, given that the STCA had triggered (**CF6**) after the Anglia Radar controller had provided avoiding action, that the conflict had been detected as soon as would have been reasonably expected and that Traffic Information had been passed to the pilot of the AW139 in a timely manner. Members were satisfied that they had fully discharged their responsibilities under the Deconfliction Service that they had provided. However, it was suggested by one member that there may have been a missed opportunity to have proactively requested coordination when they had contacted the Swanwick Military controller. Other members commented that the Swanwick Military controller may not have had sufficient Situational Awareness of the Typhoon pilot's intended manoeuvres to have reciprocated in an exchange of Traffic Information.

A member with particular knowledge of Area Air Traffic Control praised the Anglia Radar controller for their decision to have later downgraded the Deconfliction Service to a Traffic Service, and commented that the pilots may have been in a better position to have considered appropriate avoiding manoeuvres by visual assessment given the rapidly changing radar picture available to the Anglia Radar controller.

Concluding their discussions, members were in agreement that there had been sufficient Traffic Information passed by the Anglia Radar controller to enable the pilot of the AW139 to have momentarily visually acquired the Typhoon. In addition, the Anglia Radar controller had provided sufficient avoiding action to the pilot of the AW139 for them to have remained clear of the Typhoon. Members were satisfied that there had not been a risk of collision. However, it was agreed that safety had been degraded by the pilot of the Typhoon not communicating their intention to enter the OSA, and the Swanwick Military controller not passing Traffic Information to the pilot of the Typhoon who had not known about the presence of the AW139 until after CPA. As such, the Board assigned Risk Category C to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2023041			
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
	• 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	• ATM Coordination	Coordination related issues (external as well as internal)	
4	Human Factors	• Conflict Detection - Not Detected	An event involving Air Navigation Services conflict not being detected.	
5	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, no or inaccurate Situational Awareness
	• Electronic Warning System Operation and Compliance			
6	Technical	• STCA Warning	An event involving the triggering of a Short Term Conflict Alert (STCA) Warning	
	Flight Elements			
	• Regulations, Processes, Procedures and Compliance			
7	Human Factors	• Flight Crew ATM Procedure Deviation	An event involving flight crew deviation from applicable Air Traffic Management procedures.	
	• Tactical Planning and Execution			
8	Human Factors	• Accuracy of Communication	Events involving flight crew using inaccurate communication - wrong or incomplete information provided	Ineffective communication of intentions
9	Human Factors	• Aircraft Navigation	An event involving navigation of the aircraft.	Flew through promulgated and active airspace, e.g. Glider Site
10	Human Factors	• Pre-flight briefing and flight preparation	An event involving incorrect, poor or insufficient pre-flight briefing	
	• Situational Awareness of the Conflicting Aircraft and Action			
11	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			
12	Contextual	• ACAS/TCAS TA	An event involving a genuine airborne collision avoidance system/traffic alert and collision avoidance system traffic advisory warning triggered	
	• See and Avoid			
13	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
14	Human Factors	• Perception of Visual Information	Events involving flight crew incorrectly perceiving a situation visually and then taking the wrong course of action or path of movement	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: C.

Safety Barrier Assessment[3]

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

Ground Elements:

Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because Traffic Information on the AW139 had not been passed to the pilot of the Typhoon.

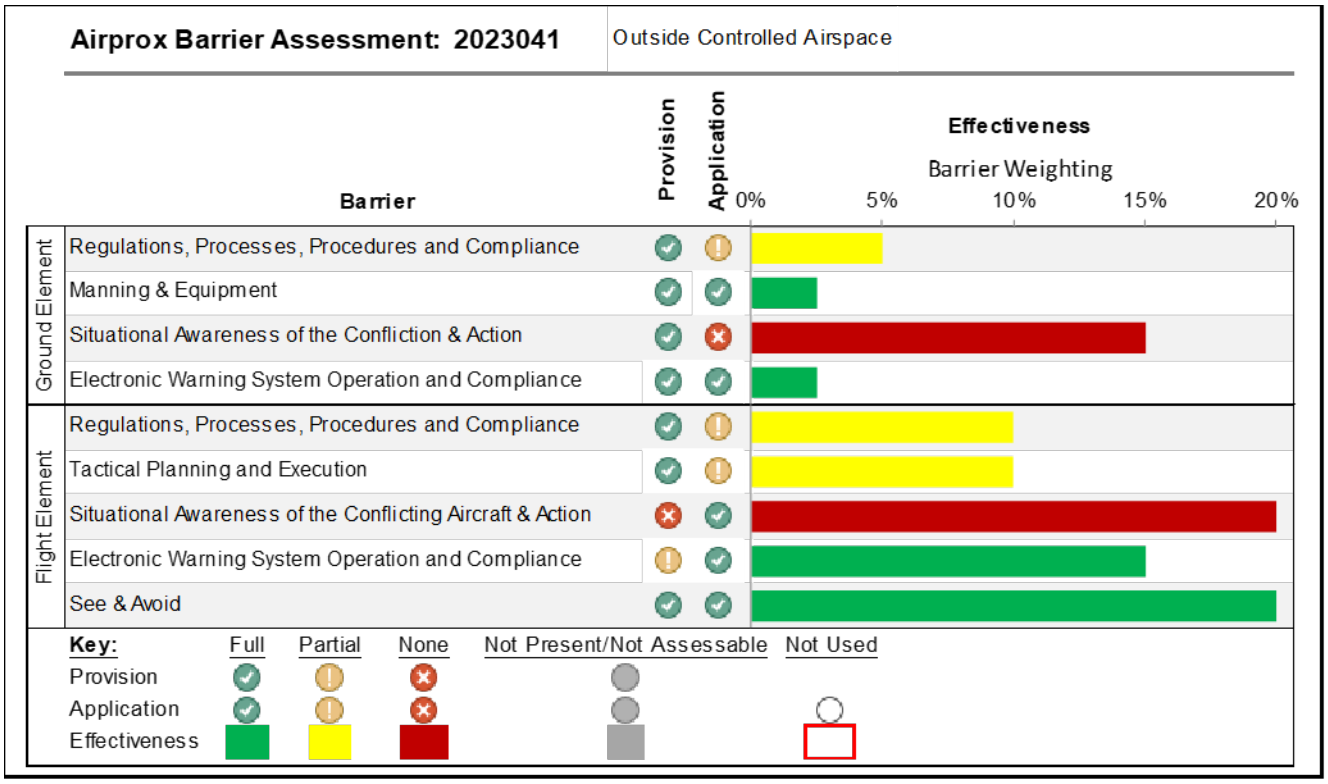
Situational Awareness of the Confliction and Action were assessed as **ineffective** because the Swanwick Military controller had not detected the potential conflict between the AW139 and the Typhoon.

Flight Elements:

Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because the pilot of the Typhoon had not contacted Anglia Radar before entering the OSA.

Tactical Planning and Execution was assessed as **partially effective** because the pilot of the Typhoon had not transmitted their intention to enter the OSA.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the pilot of the Typhoon had not had Situational Awareness of the presence of the AW139.



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