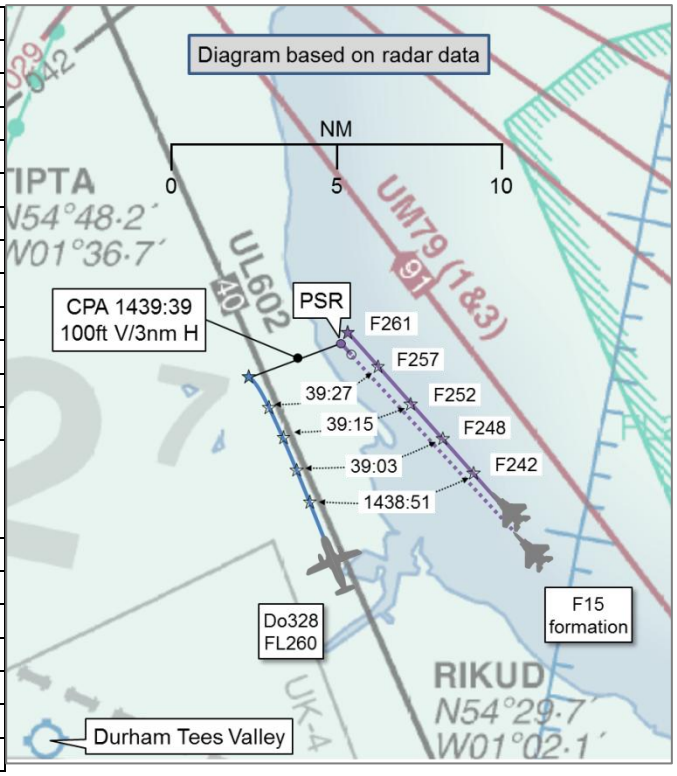
AIRPROX REPORT No 2015015

Date: 23 Feb 2015 Time: 1440Z Position: 5444N 00117W Location: 25nm SSE NATEB

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Do328	F15E
Operator	CAT	Foreign Mil
Airspace	UAR	UIR
Class	C	C
Rules	IFR	IFR
Service	Radar Control	Radar Control
Altitude/FL	FL260	FL261
ACAS/TAS	TCAS II	Not fitted
Alert	Nil	N/A
Transponder	A/C/S	A/C/S
Reported		
Colour scheme	White	Dark grey
Lighting	Landing, taxi, logo and wing lights	NK
Conditions	VMC	VMC
Visibility	>10km	>10nm
Altitude/FL	FL260	FL260
Speed	330kt	350kt
Separation		
Reported	0ft V/5nm H	NK
Recorded	100ft V/3nm H	



THE DORNIER Do328 PILOT reports he was cruising in the airway [Upper Air Route (UAR) UL602] FL260, 25nm south-east of NATEB, in receipt of a Radar Control Service from Scottish Control. There were clear skies and excellent visibility. Several military fighter aircraft were observed to the east of the airway (on the First Officer side) and below their level by approximately 1000-2000ft. They appeared to be positioning themselves around 2 military tankers and tracking in the same direction and speed as their aircraft. Their approximate heading was 320°. They were observed for several minutes until he received an instruction from ATC to make an immediate left turn onto heading 270°. After the turn was completed, the controller advised that his instruction was due to one of the military aircraft commencing a climb through their level at a range of 5nm. No conflict had been observed from the flight-deck and no TCAS advisories or instructions were annunciated. As per a recent company instruction, they requested confirmation from the controller whether the avoiding action was for collision avoidance or for maintaining separation. He confirmed that it was for collision avoidance. Shortly afterwards, an instruction for a right turn to AGPED was given and the flight continued without further event.

He assessed the risk of collision as 'Low'.

THE F15E PILOT reports that DUDE 61/62 flight was scheduled to air refuel and then operate in Class G Airspace over Scotland. The flight joined the tanker 'within the Vale'; in the SPIDER Air-to-Air (AAR) track at FL230. Post-tanking instructions were to climb 1000 ft above track altitude and free-call Swanwick (Mil). Those instructions were followed, and DUDE 61 flight began transiting to Scotland at FL240 in receipt of a Traffic Service. DUDE 62 was co-altitude and 0.5nm Line-Abreast on the west side. DUDE 62 was squawking "standby" and did not alter that throughout the event. Shortly afterwards, DUDE 61's pilot requested a climb to FL290. The flight was directed to make the request with the next Swanwick controller. After changing frequency, the request was made again. DUDE 61 was approved to climb, and received a Radar Control Service on entering the Upper Airspace. Around the time DUDE61 was passing FL260, they received a request to take a north-

easterly heading for traffic. DUDE 61 began a gradual (5-10° bank) turn, and the crew immediately told the controller that they were unable to turn further due to 'over-water' restrictions. All areas over-water were closed to 48 FW aircraft due to winds and waves being out of limits [UKAB Note: for aircrew rescue and survival reasons] in accordance with their supplemental regulations. Additionally, due to those restrictions, the aircrew did not wear anti-exposure suits for the sortie. The controller responded with 'roger', and they continued their climb, on a northerly heading, along the coastline. A minute or two later, Swanwick (Mil). reported traffic at 2nm and directed a 30° right turn for avoiding action. DUDE 61 flight immediately turned right to 030° in response to the request, and restated the desire to transit back over land when able. No member of the flight had visual or system contact with the traffic. Northerly heading was resumed once the conflict was resolved.

He assessed the risk of collision as 'Low'.

THE PRESTWICK MONTROSE PLANNER AND TACTICAL CONTROLLER reports that the Do328 pilot was flying along UAR UL602 at FL260 towards NATEB. East of the aircraft by about 10nm were 2 military aircraft at lower levels. About 5 minutes after first contact with the Do328 pilot, the Short Term Conflict Alert (STCA) started flashing against DUDE 61 which was climbing and on a converging heading with the Do328. At the time, the SSR Mode C on DUDE 61 was passing FL250 and climbing. He immediately gave the Do328 pilot an avoiding-action left turn on to 270°, quickly followed by Traffic Information. DUDE 61 continued to climb, and it looked like it flew parallel to the Do328. He then gave the Do328 pilot further Traffic Information. DUDE 61's pilot then turned to the right. Once DUDE 61 was no longer in confliction, he resumed the Do328 pilot's own navigation to AGPED. The pilot questioned whether the avoiding action was for collision avoidance to which he answered yes. He said he needed the information for his report.

THE SWANWICK MILITARY NE TACTICAL CONTROLLER reports that DUDE 61 flight was a pair of F15s whose pilots had called after refuelling (in the SPIDER towline) on a north-west heading east of Durham Tees Valley airport heading to Scotland. DUDE 61 was identified and given a Traffic Service at FL240. The pilot requested a climb to FL 310. He noticed the Do328's squawk west of his position on a similar track at FL260. After checking the distance between them with the range and bearing function (8nm separation), and after judging the heading was not converging, he gave DUDE 61 flight a climb to FL310. He then had another callsign call on handover. During the identification of this callsign he perceived that DUDE 61 flight had altered course without notification and was now heading directly at the Do328 within 2nm horizontally and 500ft vertically. He issued DUDE 61 flight with avoiding-action onto 020° to try and get maximum separation at the last minute. Traffic was not called initially as he was more concerned with getting DUDE 61 flight to take the turn. The crew informed him that they could not take the turn because they were unable to fly over-water. He then proceeded to inform them of the traffic and gave them a further turn onto 030°, at which point the Do328 pilot was also on an avoiding action turn to the west. DUDE 61 flight took the turn and proceeded away from the Do328. The service to DUDE 61 was upgraded to Radar Control as they were now passing FL 260.

He perceived the severity of the incident as 'High'.

THE SWANWICK MILITARY SUPERVISOR reports that he was working as the North East Planner with a Tac 'left' controlling two KC135R tankers in SPIDER towline plus the associated receiver F15s, and Tac 'right' controlling multiple General Handling(GH) and transit traffic. DUDE 61 flight's crew called Tac 'left' on departure from the tanker at FL240 on a northerly track requesting to climb to FL310 to transit to Scotland. There was traffic diverging on the UAR about 8nm away at FL260. He was occupied with handovers and Traffic Information for the Tac 'right' controller when the Tac 'left' controller issued climb to FL310. At the time no hazard existed between any of the subject aircraft. Whilst working on Tac 'right's' traffic he heard the Tac 'left' issue an avoiding action turn to DUDE 61 flight. He looked back at these aircraft and perceived that DUDE 61 flight had turned towards the Do328 and was rapidly closing on it both horizontally and vertically. He instructed the Tac controller to continue to issue avoiding action while he attempted to contact the Montrose Planner but was unable to get through on the landline. DUDE 61's pilot initially refused to comply with the avoidance instruction as it would place the aircraft back over the sea, but eventually took the turn after the

Do328 pilot had taken avoiding action away from the F15s. He estimated that the aircraft came within 2-3nm horizontally and less than 500ft vertically.

He perceived the severity of the incident as 'High'.

Factual Background

Within Class C airspace IFR flights are separated. The minimum separation required on this occasion was 5nm horizontal or 5000ft vertical. This is in accordance with MATS Part 1; as Mode C was being used to provide vertical separation the following criteria applied[1]:

'If the intentions of Mode C transponding aircraft are not known:

(1) the minimum separation for IFR flights in Class A-D airspace must be increased to 5000 feet'.

The Manual of Air Traffic Services defines:

On-Route (ATS) This term is used routinely by ATC for co-ordination purposes within the UK; aircraft are considered to be 'on-route (ATS)' when flying along the alignment and within 5 NM of the centre-line of published parameters of an Upper ATS Route (UAR) and other areas defined for the application of reduced co- ordination procedures.

Off Route (ATS) this term is used routinely by ATC for co-ordination purposes within the UK; aircraft are considered to be 'off-route (ATS)' when not complying with the conditions of 'on-route (ATS)' flight.

Operational Air Traffic Flights conducted under the control or authority of the military ATS organisation.

Analysis and Investigation

CAA ATSI

ATSI had access to reports from both pilots, the Montrose controller, RTF recordings and transcript of the Montrose frequency together with area radar recordings. Prestwick Centre also provided a copy of their local report. The Montrose Sector was operating with a combined Tactical and Planner controller.

At 1435:30, the Do328 pilot contacted the Montrose controller maintaining FL260 to RIKUD. Operating to the east of the Do328 were two tankers operating in a racetrack pattern at FL230 and FL235, squawking 6040 and 6041 respectively. (Figure 1).

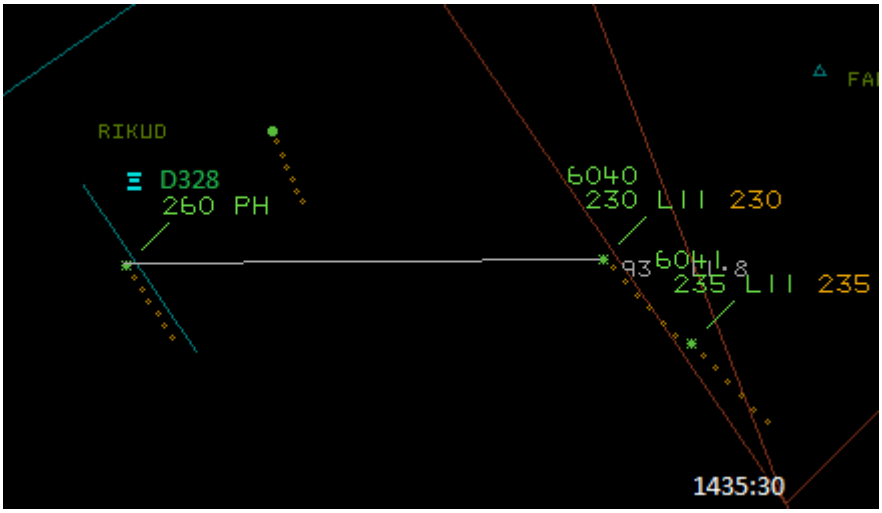


Figure 1.

[1] MATS Part 1, Section 1, Chapter 6, Paragraph 10A-4.

At 1438:19, one of the F15s appeared on radar squawking 6044 at FL239 as the tankers turned towards the south. (Figure 2.)

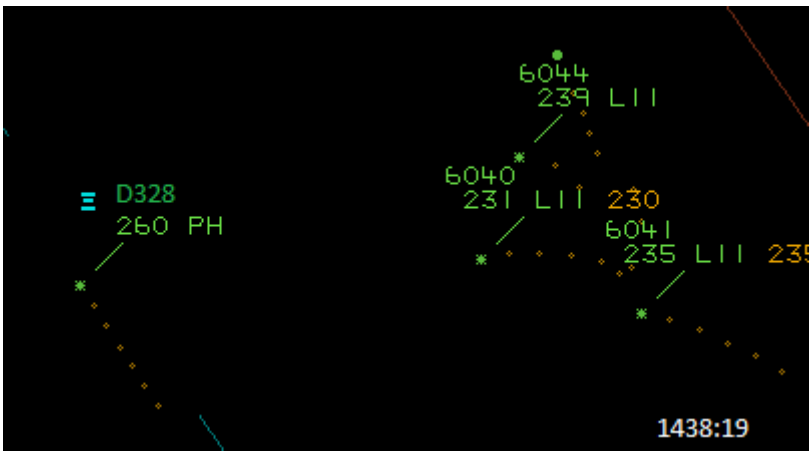


Figure 2.

The F15s started to climb on a converging track with the Do328 and, at 1439:04, low level STCA activated. The F15s were 4.6nm east-northeast of the Do328, climbing through FL248. (Figure 3.) Six seconds later the Montrose controller gave avoiding action to the Do328 pilot as "*avoiding action turn left immediately heading 270*" which was acknowledged. The Montrose controller then advised the Do328 pilot of "*military traffic in your two o'clock range of five miles just coming down your right hand side*". The Do328 pilot reported that they were visual with the traffic.

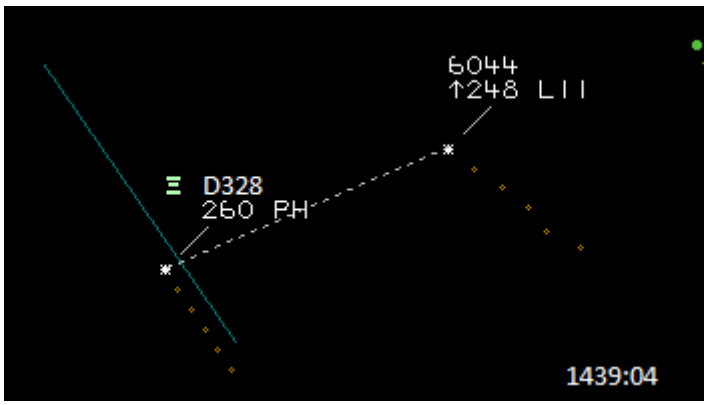


Figure 3.

At 1439:34, a second primary track appeared just to the left of the lead F15. (Figure 4.)

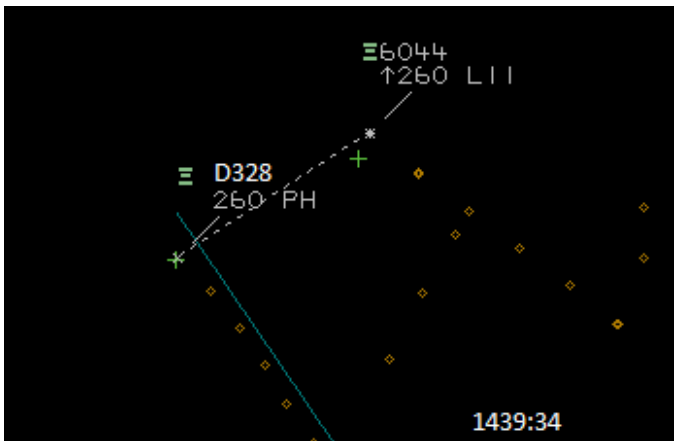


Figure 4.

CPA occurred at 1439:41 (Figure 5) when the Do328 and the transponding F15 were 3.4nm/100ft apart (5nm/5000ft were required). The lateral distance between the Do328 and the primary contact was 3nm.

Figure 5.

At 1439:53 the Montrose controller informed the Do328 pilot that the traffic was now showing FL262, climbing, and staying on its present track and he would turn him back on track when he could. The Montrose controller subsequently gave the Do328 pilot own navigation to AGPED.

At 1440 the Montrose Planner initiated a telephone call to Swanwick (Mil) to advise them of the loss of separation with the F15s.

Because the Do328 pilot was 'en route' it had priority over Operational Air Traffic (OAT) and Defence Air Traffic (DAT). It is the Military controller's responsibility to initiate coordination when OAT/DAT may conflict with GAT which is en route.

The Montrose controller was unaware of the F15s prior to STCA activating. As soon as he became aware of the potential conflict, avoiding action was issued to the Do328 pilot to restore separation.

Military ATM

The radar replay is based upon the London QNH of 991hPa.

A portion of the transcript between RAF (U) Swanwick (SM), the Airprox F15 formation and non-Airprox Jungle 23 Flt, is below:

To	From	Speech Transcription	Time
F15	SM	[F15 c/s] flt identified FL240 Traffic Service, do you require further climb for your transit?	14:38:24
SM	F15	[F15 c/s] request transit 310.	14:38:29
F15	SM	[F15 c/s] flt roger, climb FL310.	14:38:38
SM	F15	[F15 c/s]	14:38:45
SM	J23	Jungle 23 check. Two. Swanwick, Jungle 23 Radar Control 210.	14:39:08
J23	SM	Jungle 23, Swanwick Mil identified, FL210 Radar Control, leaving controlled airspace, what type of service do you require?	14:39:10
SM	J23	Jungle 23, Traffic Service	14:39:17
J23	SM	Jungle 23 Roger, Traffic Service, confirm intentions after refuelling.	14:39:19
SM	J23	Jungle 23 will proceed to Donna Nook	14:39:23
F15	SM	[F15 c/s] flt avoiding action, turn right immediately heading 020 degrees.	14:39:27
SM	F15	er, that'll take us over the water, we're unable.	14:39:34
F15	SM	[F15 c/s] flt roger.	14:39:41
SM	F15	Swanwick [F15 c/s] we can maintain 350 if that's acceptable?	14:40:00

To	From	Speech Transcription	Time
F15	SM	[F15 c/s] flt roger, turn right immediately heading 030 degrees.	14:40:06
SM	F15	[F15 c/s] right immediately 030.	14:40:15
SM	F15	and er, be advised we cannot transit over the water.	14:40:22
F15	SM	[F15 c/s] flt roger but there was civilian traffic in your west 2 miles at FL260, you can't give yourself own navigation.	14:40:26
SM	F15	[F15 c/s]….we're…..we're in the turn.	14:40:35

At 1438:24 (Figure 1), the Swanwick controller placed the F15 pilots under a Traffic Service at FL240 and requested if a climb was required. At 1438:29, the F15 pilots requested a climb to FL310.

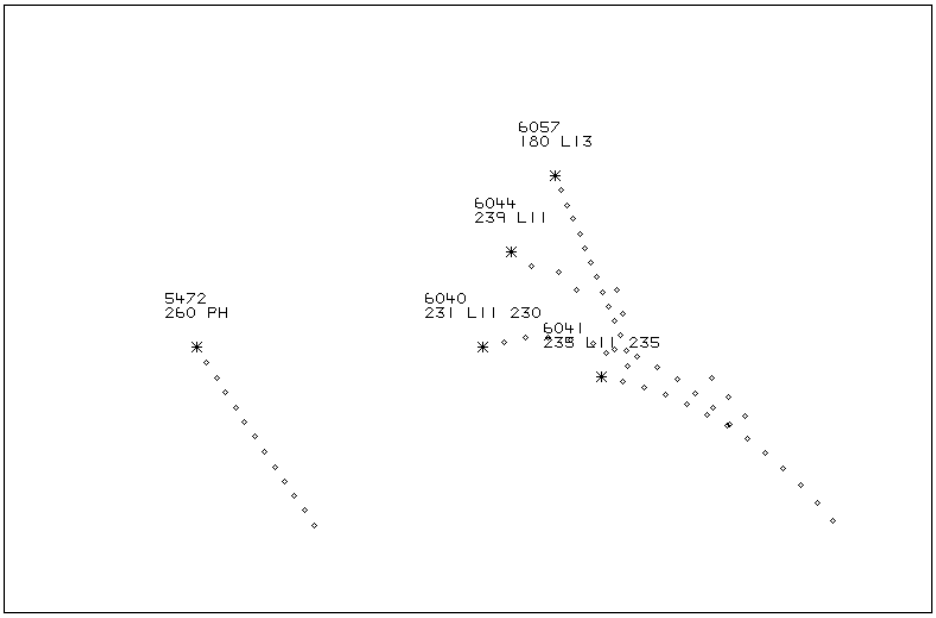


Figure 1: 1438:24 Traffic Service agreed (F15s 6044, Do328 5472; CAT 6057).

At 1438:38 (Figure 2), the Swanwick controller issued the climb instruction to FL310 to the F15 pilots with 5.7nm horizontal separation on a converging heading.

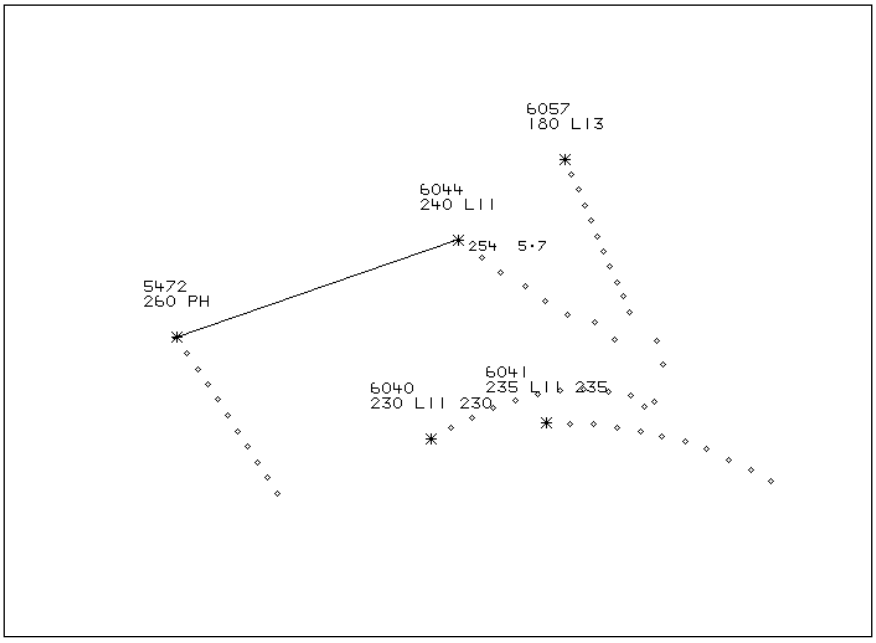


Figure 2: Climb instruction passed at 1438:38.

At 1439:14 (Figure 3), the F15s were passing FL252 in the climb with 4nm horizontal separation.

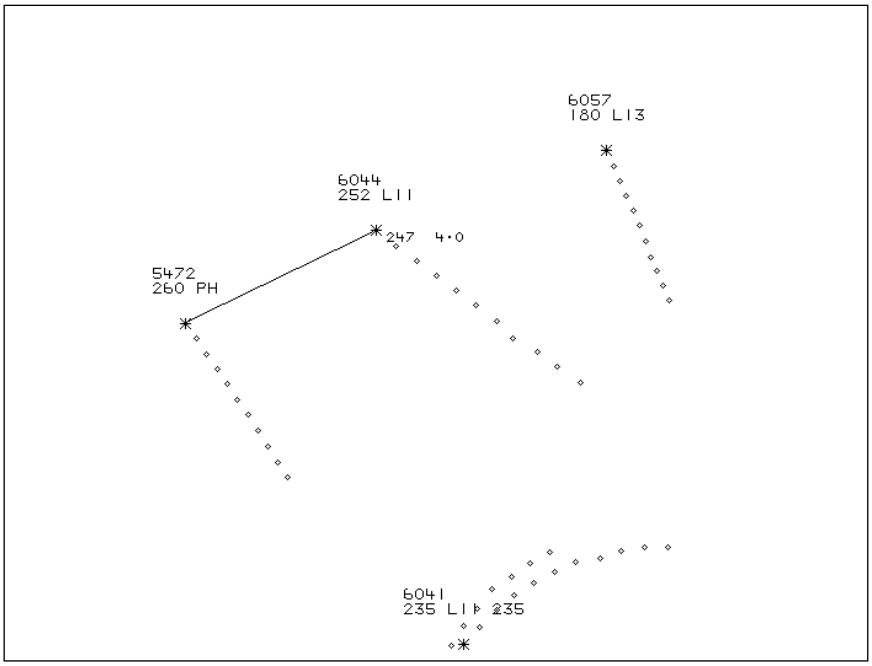


Figure 3: Geometry at 1439:14.

At 1439:27 (Figure 4), Swanwick transmitted to the F15s, "(F15 C/S) *avoiding action turn right immediately heading 020 degrees*." No information on conflicting traffic was passed at this point.

At 1339:34, the F15 pilot responded with, "*er, that'll take us over the water, we're unable*."

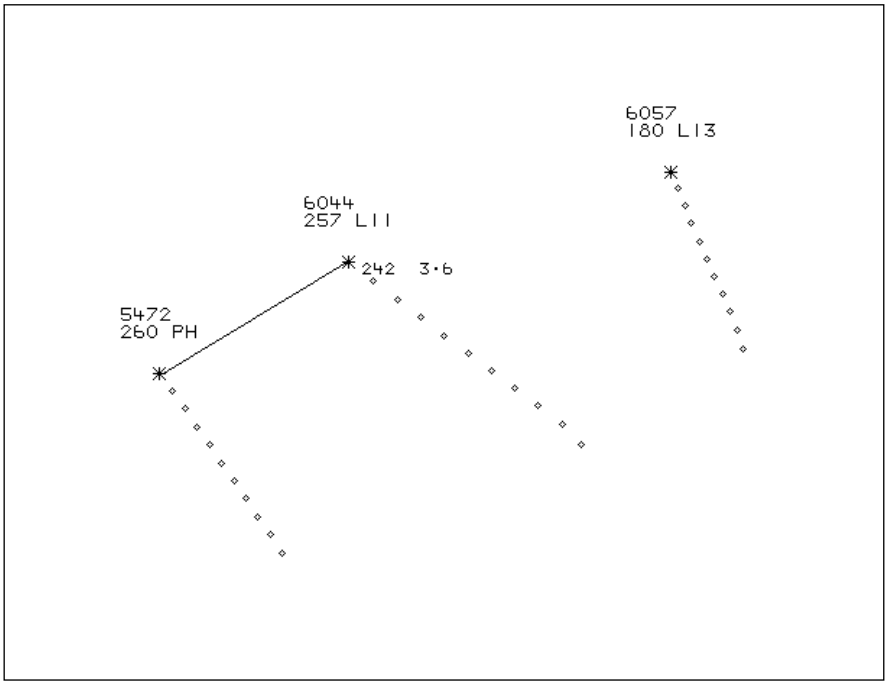


Figure 4: Avoiding action at 1439:27.

The CPA was estimated at 1439:39 to 1439:43 at 3.3nm horizontally and 100ft vertically. (Figure 5.)

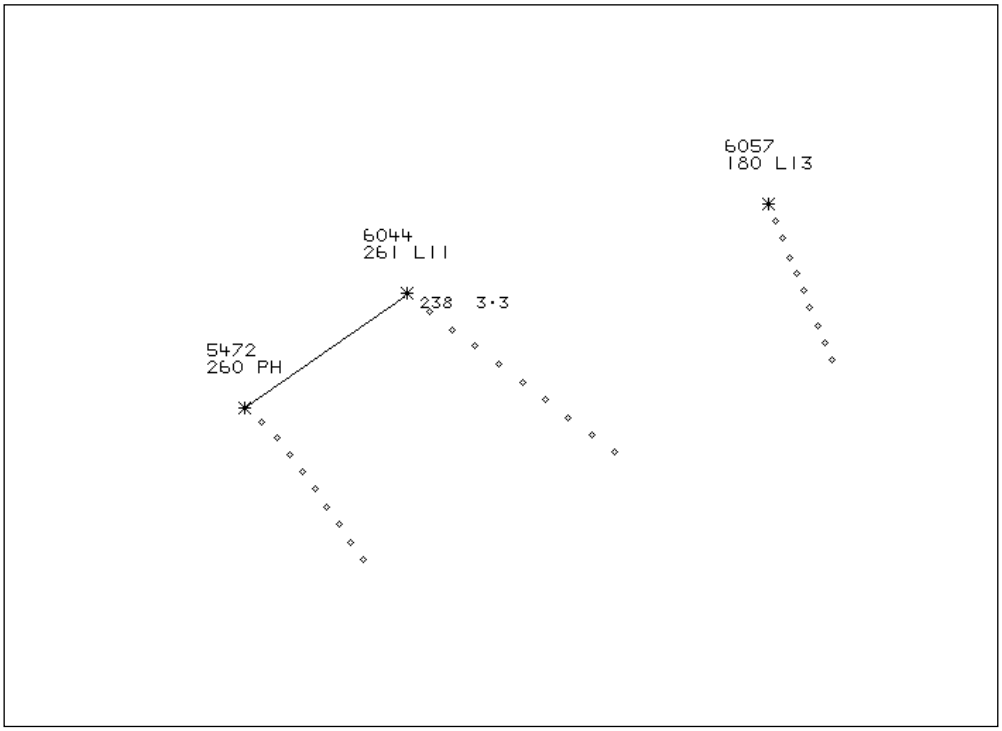


Figure 5: CPA at 1439:41.

At 1440:00 (Figure 6) the F15 pilots requested heading 350° and the Do328 avoiding action turn is evident.

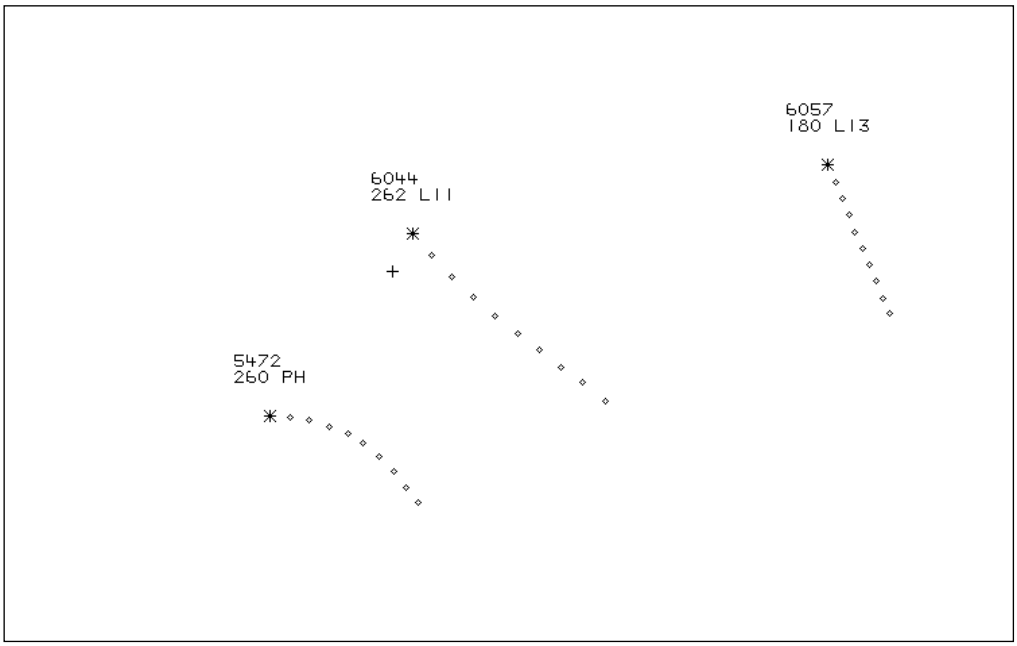


Figure 6: F15 pilots request for further climb to FL350 at 1440:00.

At 1440:06 (Figure 7), Swanwick transmitted, "(F15 C/S) *roger, turn right immediately heading 030 degrees*."

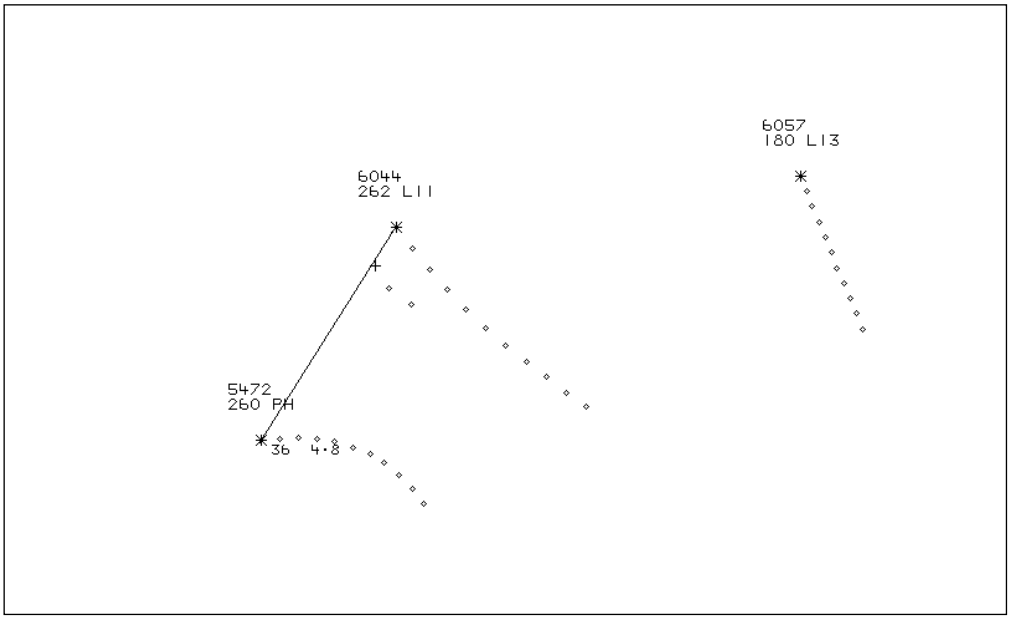


Figure 7: Further avoiding action turn at 1440:06.

The F15 pilots confirmed a right turn at 1440:15 with 5nm lateral separation between aircraft and, once again, the pilot advised that the crew could not transit over water. At 1440:26, the Swanwick controller confirmed that the crew could not give themselves own navigation and the F15 crew confirmed in the turn.

The local investigation reviewed the incident using the radar picture used by the Tac controller. Prior to identifying the F15s, the controller had to manipulate the data blocks, because four were in close proximity, and inadvertently 'hooked' onto the wrong (6057) aircraft. (Figure 8.)

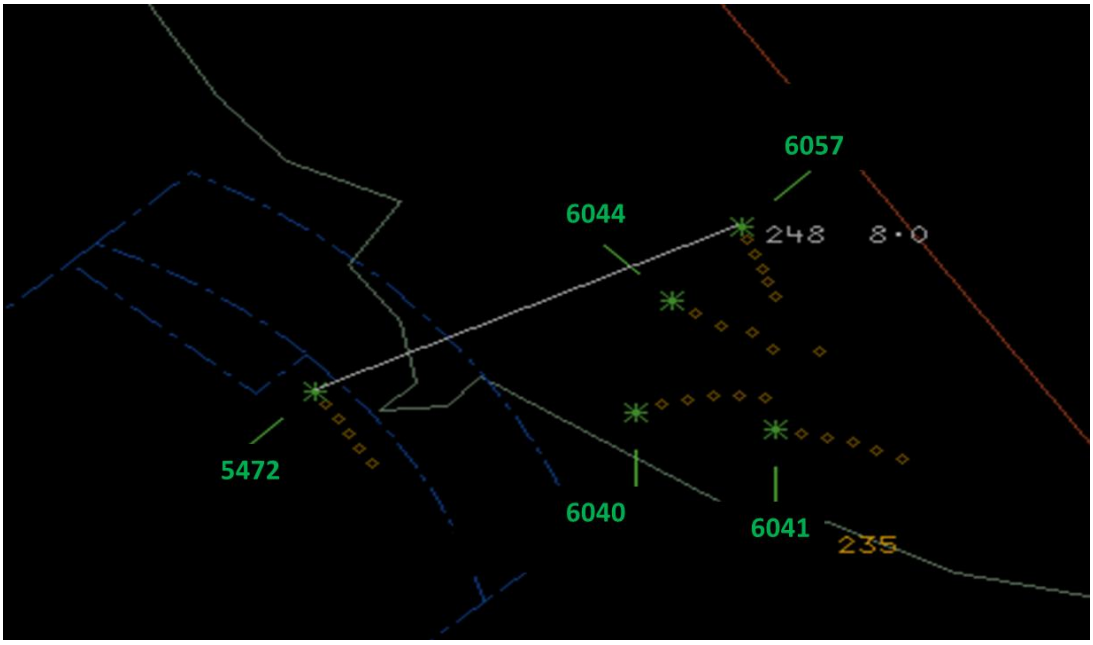


Figure 8 controller 'hooking' the incorrect callsign at 1438:29.

The F15 pilots called Swanwick clear of the tanker and were given a Traffic Service with no mention of headings or 'own navigation'. The climb to FL310 was passed to the formation and it appears that the controller highlighted the incorrect track (6057) and was content to issue the climb with what appeared to be 8nm separation (the F15s (6044) actually had only 5.7nm horizontal separation). The F15s were 2000ft below the Do328 as the climb to FL310 was issued (Figure 2). As the respective callsigns began to converge, the Tac gave an avoiding turn to the F15 pilots at 3.6nm horizontal separation with the F15s 300ft below, in the climb (Figure 4). The

F15 pilots were not able to transit over the water and this was relayed to the Tac; the CPA was several seconds later. The first avoiding action was passed at 1439:27 and the follow-up was issued at 1440:06. At the point of the second avoiding action, the Do328 avoiding turn had increased horizontal separation, and the F15 pilots appear to have levelled-off at the same level at FL262. At no point did the Tac pass Traffic Information on the conflicting traffic. CAP413, Ch.5.26, and CAP493, Ch 3.10 Essential Traffic Information provides the avoiding action phraseology, rules for a Radar Control Service and guidance for controllers to provide information on the conflicting traffic.

Because the aircraft were at FL260 at CPA, the F15s were in Class C airspace and effectively operating under the rules of a Radar Control Service, which was not passed by the Tac controller. The F15 pilot had clarified that pre-Airprox he had tanked near the coastline, and judged the aircraft track to be within gliding distance of land. However, the initial avoiding action vector would have taken the crews out over water on a bearing that was more than would be typically acceptable. The initial turn was gradual because the crews felt they had time and they did not perceive that the traffic was closer. The crews could have vectored west, stopped climb or even expedited climb with reheat to maintain standard separation. The crews had entered Class C and, as per the provision of the Radar Control Service, aircraft were to comply with ATC instructions as per CAP493, Ch 2.2 Classification of Airspace.

The Tac controller noticed the Do328 at approximately 10nm separation and was required to increase range to provide a service to the other F15 callsign. Upon noticing the confliction, two avoiding action turns were provided with 39 seconds between turns. The controller hooked the wrong aircraft (the 6057 flight and not the F15s) by not using the range and bearing function correctly. In addition, the controller did not apply the correct type of service for the airspace, and did not mention details of the conflicting traffic in the avoiding action. To add context to the actions, STCA was switched off in the area to avoid controller annoyance in the civil sectors. The controller also acknowledged that better manipulation of the map would have allowed a more accurate display and a clearer picture. The controller had two speaking units (four aircraft) on frequency with a 'medium to low' workload and had switched attention to the other F15 to identify and apply a service; controlling two separate formations involved increasing range on the radar scale. From the 'hooking' action, the controller had demonstrated a scan for conflicting tracks and was aware of the Do328. Plus, when the F15 pilots applied their squawk, a data block appeared but it did not pair with the corresponding flight strip and the data block remained transparent, possibly preventing an earlier highlight of the confliction. Furthermore, the controller had witnessed the F15 pilots tanking over water, albeit close to land, and was not aware of the restriction. At the time, not all controllers were aware that the STCA function had been disabled.

The normal barriers to such an incident would be ACAS, radar-derived ATC separation and lookout, as a last resort. The F15 crews did not have ACAS fitted, and their systems were not used to search for conflicting traffic. The crews were not visual with the Do328 and STCA was disabled on this sector. ATC did provide avoiding action twice to the F15 pilots following the instruction to climb through the level of the Do328. The crews were slow to implement the avoiding action in the context of not being aware of the confliction, no ACAS/radar warning, no amplification of the conflicting traffic, and restrictions over flight profiles over water. The controller had provided the climb instruction to the F15 pilots that were on a converging heading with the Do328; the controller actions can be viewed in light of various workload, Human Machine Interface (HMI) and procedural issues.

ATC provided the climb instruction that reduced the separation standards, but this can be viewed in the context of workload, procedural and HMI issues.

HMI. The controller 'hooked' the wrong aircraft possibly because of the close proximity of four aircraft returns the range of the display and an incorrect procedure. The fact that the F15 callsign had not been paired to the flight strip possibly delayed highlighting issues to the controller. The STCA was a valuable safety barrier that would have assisted ATC and is

available in other sectors. The controller had also increased the range to provide a service to the other F15 callsign, which would have produced less fidelity on the converging tracks.

Workload. Although workload was manageable, the controller was called by another pre-noted formation of F15s at a stage where the F15 and the 6057 data blocks were separating and the F15s were converging with the Do328. The other F15 formation provided a distraction and, when the controller noticed the confliction, an avoiding action was provided in non-standard phraseology, no details of the Do328 were passed, and this did not provide a sense of urgency to the F15 pilots, who were not visual and did not want to take a vector that positioned them too far out over the coast.

Procedures. Use of non-standard procedures (not updating the service and not providing details of the conflicting traffic) contributed to the gradual response from the F15 crews. The flight-over-sea restriction was not known to the controller, and this limited horizontal avoiding actions. The procedure for alerting controllers of F15 flight restrictions did not work on this occasion. There was an error in perception and vigilance by the controller and, as a response; he made a selection error by hooking the wrong aircraft, possibly stemming from spatial confusion over aircraft positions.

The controller fully acknowledged the error in the unit investigation. RAF (U) Swanwick recommended reinforcing HMI skills and reminded controllers to update type of service and provide standard avoiding action phraseology. The unit reviewed ways of adequately briefing controllers of crew restrictions, and a safety survey into the lack of STCA in the sector would be completed.

UKAB Secretariat

Both pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard[2]. The Airprox F15E, on the left of the formation, appeared as a primary only return. CPA has been calculated assuming it was co-altitude with the leader.

Comments

USAFE

There is little to add to the comprehensive Military ATM analysis. By way of explanation, the SPIDER AAR track was established originally to enable F-15 aircraft to refuel when sea conditions precluded over-water transits; it is noted that Swanwick (Mil) is reviewing procedures for informing controllers when such conditions exist.

Summary

The Airprox occurred in Class C airspace between a Do328, whose pilot was operating under IFR in receipt of a Radar Control Service from the Prestwick Montrose Sector, and a pair of F15s whose pilots were under the control of Swanwick (Mil), also under IFR. When the F15 pilots were given clearance to climb to FL310 on a conflicting track with the Do328, the Swanwick controller believed that separation was 8nm and the aircraft were not on conflicting flight paths. However, he had 'hooked' the wrong aircraft on his display; the aircraft were actually 5.7nm apart and on conflicting tracks. As soon as the Swanwick controller realised the confliction (STCA was disabled) he issued an avoiding action right turn to the F15 pilots. The F15 pilots were unable to fully comply with the avoiding action instructions because this would have taken them over-sea which was against their SOPs for the weather conditions. Meanwhile the Montrose controller had issued the Do328 pilot with an avoiding action left turn, together with Traffic Information about the F15s. The Do328 pilot had just started his avoiding action turn at CPA (100ft vertically and 3nm horizontally).

[2] SERA.3205 Proximity.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots and controllers concerned, area radar and RTF recordings and reports from the appropriate ATC and operating authorities.

The Board first discussed the actions of the F15 pilots. The USAFE member confirmed that, on this occasion, due to adverse sea conditions the F15 crews had been unable to fly over the sea beyond gliding distance from land. Additionally, because they had not been expecting to operate over-sea, they had not been wearing immersion suits. This he explained was the reason for the pilots not initially accepting the avoiding action turn issued by the Swanwick (Mil) controller. He was surprised when a Military ATC member explained that Swanwick (Mil) controllers would not be aware of the sea conditions which might affect F15 operations. Notwithstanding, although realising the reasons for the F15 pilots not wishing to accept the avoiding-action instruction, the Board opined that the immediate risk of imminent threat from the close proximity of another aircraft was vastly greater in comparison to the likelihood of a sea entry; because of this, they opined that avoiding-action instructions should immediately be followed (unless overridden by TCAS RAs), especially when ATC instructions are issued in Class C airspace.

The Board noted that the Montrose controller had been made aware of the confliction between the Do328 and the F15s when STCA had activated. They noted that this useful tool had allowed him to take immediate and positive action in issuing the Do328 pilot with an effective avoiding-action turn. That standard separation (5nm/5000ft) was eroded was due to the dynamics of the situation when the F15s commenced their climb.

The Board then turned its attention to the actions of the Swanwick (Mil) controller. A Military ATC member explained that the post-event investigation had showed that the controller had 'hooked' the wrong aircraft. He had used the Range and Bearing function manually, dragging and dropping it onto what he thought had been the lead F15's data-block. The data-blocks of several aircraft (including the F15 and the other aircraft which had been incorrectly 'hooked') had been in close proximity on the radar display. This he thought could explain why the controller had 'hooked' the unintended aircraft. This aircraft, which he had believed to be the F15, had not been on a conflicting track with the Do328 and, acting therefore on the incorrect belief that the F15s had not been on a conflicting track with the Do328, he had instructed them to climb through its level. He had then turned his attention to the traffic situation to the south of the sector. The Board were concerned to hear that, whereas the Montrose controller had been alerted to the confliction by STCA, this had been disabled on the Swanwick (Mil) sector; they wondered whether this was a prudent and safe action. A Military ATC member commented that STCA had been disabled on several Swanwick (Mil) sectors, including the one involved, for a number of years. He explained that this was because it had been decided appropriate to disable STCA in areas where it would be continually operating because of the nature of the tasks of the aircraft involved: constant STCA activation could have caused a distraction to the controller or led to it being ignored because of overuse. He also pointed out that, on this occasion, the controller had spotted the confliction at about the same time as STCA would have activated and, as soon as he had been aware of the proximity of the F15s to the Do328, he had issued the F15 pilots with an appropriate avoiding-action turn (which had to be repeated because they had reported that they were unable to carry out the instruction).

The Board then discussed the cause of the Airprox. It was quickly agreed that the action taken by the Swanwick (Mil) controller had caused the Airprox; essentially, he had climbed the F15 pilots into conflict with the Do328. This action had followed an error in 'hooking' the incorrect aircraft, and the Board considered that this was a contributory factor. Although realising why the F15 crew had not immediately accepted the avoiding-action turn, the Board considered that their delay in carrying out the instruction was also a contributory factor. The Board then turned its attention to the risk. Although separation had only been reduced to 3nm, it was agreed that this was not a normal occurrence, and normal safety parameters had not pertained because 5nm was required. However, timely and effective action had been taken to prevent the aircraft colliding, and so it was agreed that the Airprox should be categorised as risk Category C.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The Swanwick (Mil) controller climbed the F15E into conflict with the Do328.

Contributory Factors: 1. The Swanwick (Mil) controller 'miss-hooked' another aircraft.

2. The F15E crew delayed their avoiding-action turn.

Degree of Risk: C.