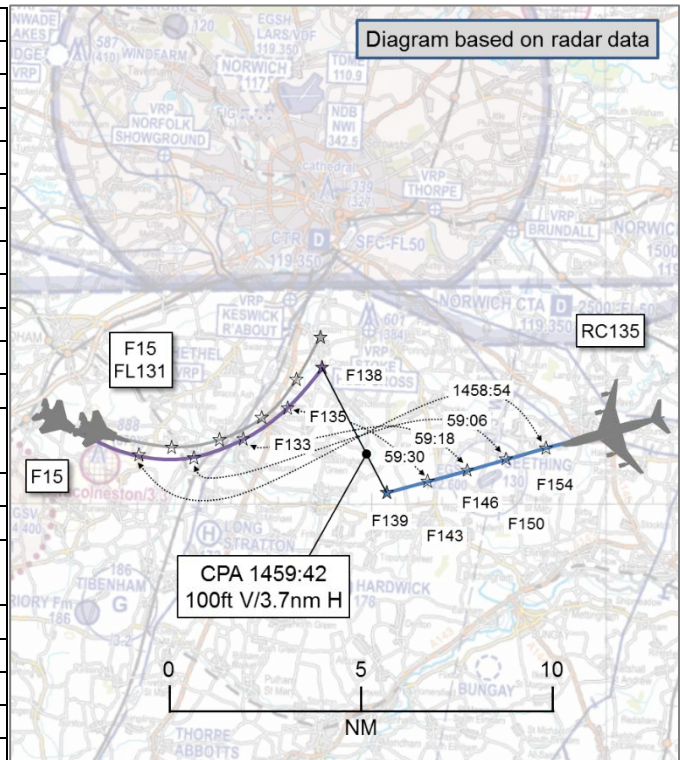


**AIRPROX REPORT No 2018038**

Date: 14 Mar 2018 Time: 1500Z Position: 5232N 00119E Location: 10nm S Norwich

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	RC135	F15
Operator	Foreign Mil	Foreign Mil
Airspace	London FIR	London FIR
Class	G	G
Rules	IFR	VFR
Service	Traffic	Traffic
Provider	Swanwick Mil	Swanwick Mil
Altitude/FL	FL139	FL138
Transponder	A,C,S	A,C
<b>Reported</b>		
Colours	Grey, white top	Dark grey
Lighting	Upper and lower strobes, nav	Position, anti-collision
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	Descending from FL160	FL130
Heading	240°	045°
Speed	260kt	300kt
ACAS/TAS	TCAS II	Not fitted
Alert	RA	N/A
<b>Separation</b>		
Reported	500ft V/0.75nm H	1000ft V/1.5nm H
Recorded	100ft V/3.7nm H	



**THE BOEING RC135 PILOT** reports that they were just past NAVPI given direct to Mildenhall in the descent from FL160 to FL70. ATC called traffic, a flight of two F15s. They acquired the F15s on TCAS approximately 15nm at 2 o'clock. The F15 pilots were given a turn to the northeast. They were heading 240° and gained visual contact with the F15s, which levelled at approximately FL150, completing their turn to the northeast. They received a TCAS RA climb from the second aircraft. They shallowed their rate of descent with visual contact with both F15s, which were flying away from their aircraft. The RA was reported to Lakenheath after hand-off.

He assessed the risk of collision as 'Low'.

**THE F15 PILOT** reports that they were general handling in the East Anglia MTRA working simulated ground attacks in the Norwich area with SCT-BKN clouds at approximately 5000ft MSL. The flight was working a simulated target location hampered by the low weather when Swanwick Mil passed Traffic Information on the RC135 on recovery to Mildenhall. The flight was already in a turn when it received the information and so continued their turn. The closest F15 to the RC135 was on the outside of the turn and picked up visual contact with the RC135 at approximately 3nm. The F15 pilot assessed that there was no further risk of collision as the formation turned away from the RC135 and continued to manoeuvre within their block.

He assessed the risk of collision as 'Low'.

**THE SWANWICK MIL TAC RIGHT CONTROLLER** reports that, due to the length of time that had elapsed, he could not recall many significant details regarding this incident. He did remember being fairly engaged with an aircraft joining controlled airspace at ENITO at the time of this occurrence. [Swanwick reported that they were notified of the Airprox, which occurred on 14<sup>th</sup> March on 27<sup>th</sup> March.]

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

**THE SWANWICK MIL SUPERVISOR** reports that at the time of this incident occurring he was liaising with Marham ATC and assisting the Overload console. Due to this, he did not witness the occurrence.

## Analysis and Investigation

### Military ATM

An Airprox occurred on 14 March 2018 at approximately 1500 in East Anglia, between an RC135 and an F15. The RC135 was receiving was receiving a Traffic Service from the Swanwick Mil East Tac Controller while in transit to Lakenheath and the F15 was receiving a Traffic Service from the same controller whilst general handling.

At 1448:17 (Figure 1), the RC135 pilot was in the descent to FL70 (passing approximately FL160) and was instructed to squawk 0403 in preparation for a handover to Lakenheath. At this point, the F15s were 14nm west of the RC135 heading east at FL130.

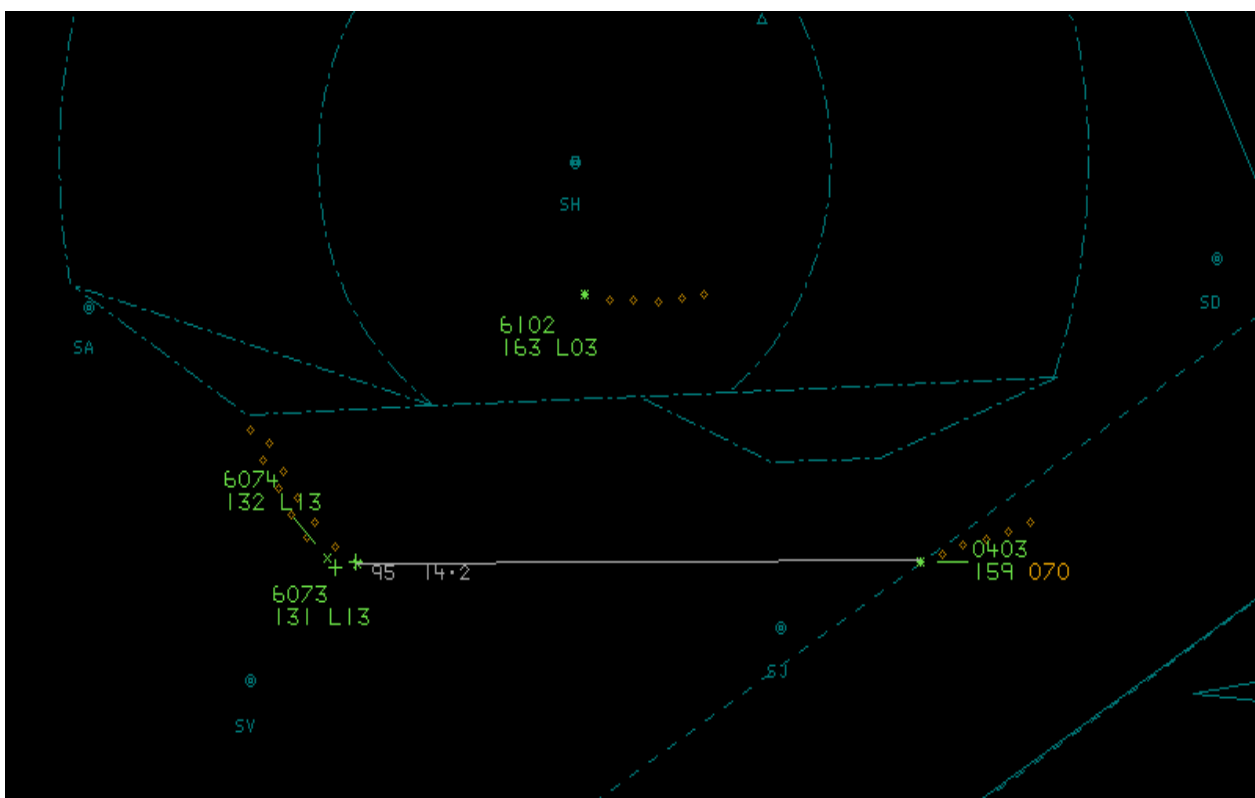


Figure 1: 1448:17. RC135 squawk 0403, F15s 6073/6074.

At 1458:56 (Figure 2), the Swanwick East Controller passed accurate Traffic Information to the F15 pilots, who reported visual with the RC135 8 secs later. No reciprocal Traffic Information was passed to the RC135 pilot; however, the frequencies were cross-coupled so it was possible that the RC135 pilot would have been aware of the F15s.

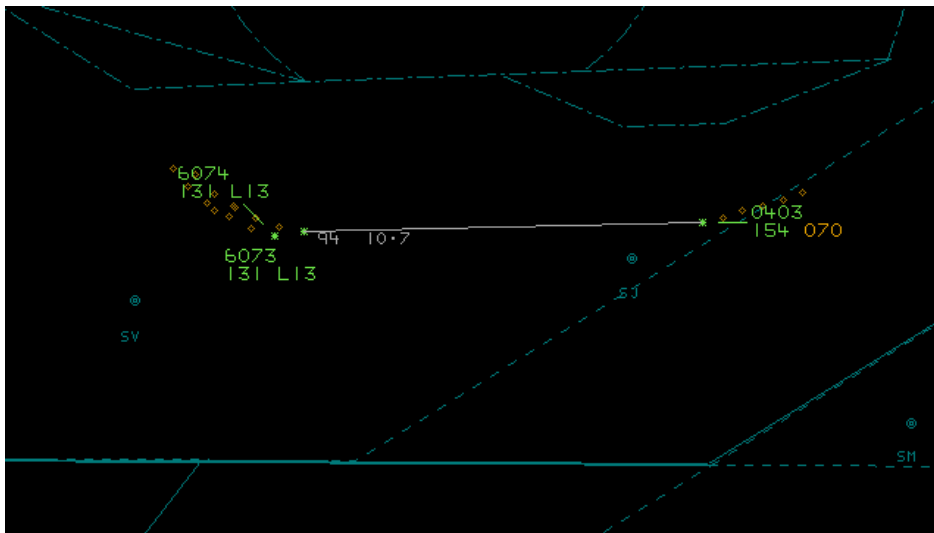


Figure 2: 1458:56.

At 1459:25 (Figure 3), the RC135 pilot was instructed to contact Lakenheath. Separation was 5.2nm horizontally and 1500ft vertically.

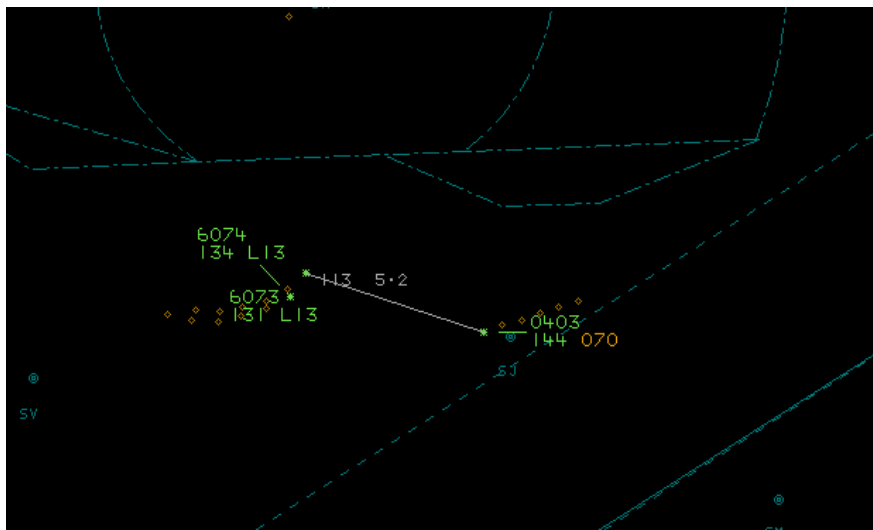


Figure 3: 1459:25.

The CPA occurred at 1459:39 (Figure 4); 3.7nm horizontally and 100ft vertically with diverging flight paths.

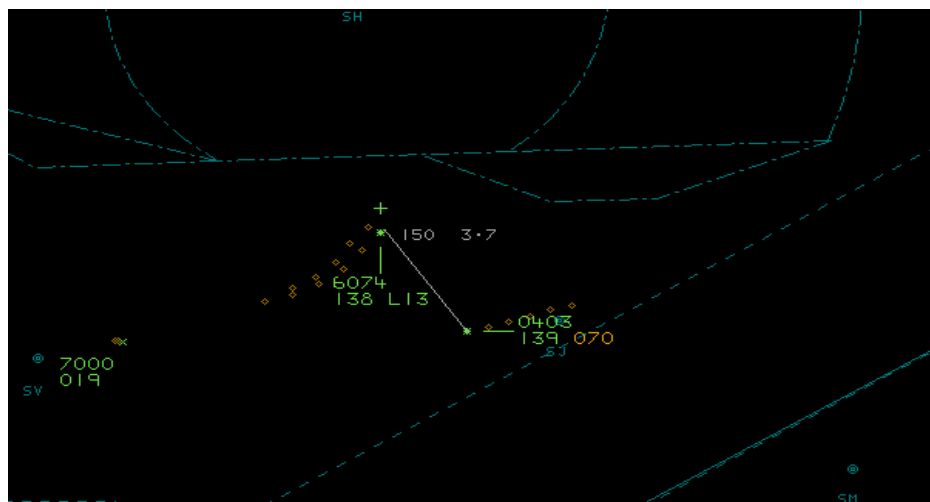


Figure 4: Geometry at 1459:39.

The Airprox was not reported on frequency to the controller concerned and the Unit were not informed until approximately 13 days later. As a result, the Controller and Supervisor involved could not recall any specifics of the incident but the Supervisor noted that both Unit and Controller workload was high. The Swanwick East Controller passed appropriate Traffic Information to the F15 pilots at 10nm, allowing them to gain visual contact with the RC135 some 8secs after the information was passed. No reciprocal Traffic Information was passed to the RC135 pilot at this time although it would have been appropriate to do so.

At the time the RC135 pilot was handed over to Lakenheath there was (just) more than 5nm and 1500ft between the aircraft and the F15s had commenced a turn away to the northeast. Although the F15s were unlikely to get within 3nm of the RC135 (and therefore technically outside the scope of Traffic Information as defined in CAP 774) it would have been reasonable to expect Traffic Information to be passed prior to the release of the aircraft

### **UKAB Secretariat**

The RC135 and F15 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard<sup>1</sup>. If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right<sup>2</sup>. If the incident geometry is considered as converging then the RC135 pilot was required to give way to the F15<sup>3</sup>.

CAP 774, the UK Flight Information Services, states that under a Traffic Service:

*'Traffic is normally considered to be relevant when, in the judgement of the controller, the conflicting aircraft's observed flight profile indicates that it will pass within 3 NM and, where level information is available, 3,000 ft of the aircraft in receipt of the Traffic Service or its level-band if manoeuvring within a level block. However, controllers may also use their judgment to decide on occasions when such traffic is not relevant, e.g. passing behind or within the parameters but diverging. Controllers shall aim to pass information on relevant traffic before the conflicting aircraft is within 5 NM, in order to give the pilot sufficient time to meet his collision avoidance responsibilities and to allow for an update in traffic information if considered necessary.'*

*Controller judgement is essential to ensure that traffic information is relevant and timely. Controllers should take account of the aircraft's relative speeds, lateral and vertical closure rates, and track histories'.*

### **Comments**

#### **USAFE-UK**

The RA received by the RC135 occurred during the change of frequency from Swanwick Mil to the Lakenheath RAPCON and, although the RA was reported to Lakenheath on contact, the Airprox was not filed until many days later. Consequently, the controllers' recall of the precise details of an incident, which occurred during a reportedly busy period, are understandably thin and particularly so when the CPA was 3.7nm and increasing.

### **Summary**

An Airprox was reported when an RC135 and an F15 flew into proximity at 1500hrs on Wednesday 14<sup>th</sup> March 2018. The RC135 pilot was operating under IFR in VMC, the F15 pilots were operating under VFR in VMC. The RC135 and F15 pilots were in receipt of a Traffic Service from the same controller at Swanwick Mil, although, at the time of the Airprox, the RC135 pilot was in the process of changing frequency to Lakenheath.

<sup>1</sup> SERA.3205 Proximity.

<sup>2</sup> SERA.3210 Right-of-way (c)(1) Approaching head-on.

<sup>3</sup> SERA.3210 Right-of-way (c)(2) Converging.

## **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 were disappointed that the Airprox had not been reported until some days after the event; because of this delay, valuable information was no longer available and the recollections of the incident by the controllers involved were greatly reduced. Notwithstanding, the incident was relatively straightforward and members were content that they had enough information with which to make an assessment.

Members noted that the Airprox had occurred in the busy airspace of the East Anglia Military Training Area within which the RC135 was inbound, under IFR, to Mildenhall and the F15 pilots were carrying out general handling in the area under VFR. Despite being busy with other traffic, in the period leading up to the Airprox the crews of the three aircraft involved were in receipt of a Traffic Service from the same controller at Swanwick Mil, which members agreed had undoubtedly assisted in their mutually derived situational awareness of each other.

For their part, the RC135 crew had passed NAVPI and were given a direct routing to Mildenhall, descending from FL160 to FL70. The radar recording shows that there were a pair of F15s operating to the west of them. The RC135 pilot recollected, erroneously, that he had received Traffic Information about the F15s but the R/T transcript confirmed that no Traffic Information about the F15s was passed at any time by the Swanwick controller. However, from the RC135 pilot's report, the crew did appear to be aware of the presence of the F15s because they were on cross-coupled frequencies, they acquired the F15s on TCAS in their two o'clock at a range of 15nm, and subsequently observed the F15s visually when the pair levelled at about FL150 whilst they were turning away from the RC135 to the northeast. Having received the TCAS RA concerning the No 2 F15, they were not able to climb before CPA.

Meanwhile, the F15 pilots had been issued with Traffic Information about the RC135 at 10.7nm separation, with the F15s being 2300ft below the RC135. Shortly afterwards the F15 pilots reported visual with the RC135. About 30 seconds later, the RC135 was transferred to Lakenheath Approach when they were 5.2nm horizontally and 1500ft vertically apart. ATC members opined that it would have been good practice for Traffic Information about the F15s to have been passed to the RC135 crew before they were transferred; however, this was not considered seminal to the Airprox because the RC135 crew were already aware of the presence of the F15s through their own situational awareness and TCAS.

Noting that the separation at CPA was such that the aircraft were not in direct conflict, the Board quickly agreed that incident was best described as the RC135 pilot being concerned about the proximity of the F15s because he had received a TCAS RA. Turning to the risk, members noted that the RC135 pilot had seen the F15s on TCAS at about 15nm and had then obtained visual contact whilst they were turning away from his aircraft. The F15 pilots had also reported on frequency that they were visual with the RC135 and had confirmed that they had been turning away at about 3nm. The radar recordings show that one of the F15s passed within 100ft vertically and 3.7nm horizontally of the RC135 at CPA, which was close enough to trigger the TCAS even though adequate visual separation existed. Although members re-iterated that the generation of a TCAS RA should not be considered routine, the parameters of TCAS algorithms were such that an encounter with an aircraft fitted with TCAS could generate an alert even when adequate visual separation had been achieved. Consequently, it was considered that normal safety standards had pertained in Class G airspace. The Board therefore categorised the Airprox as risk Category E.

Although they did not feel that a formal safety recommendation was appropriate in this case, having later in the meeting reviewed similar TCAS RA incidents generated by F15s against TCAS-equipped aircraft, the Board re-emphasised the recommendation made in Airprox 2018031 which urged that "USAFE(UK) re-brief their aircrew and controllers on the need to anticipate the effect of aircraft flight vector on other aircrafts' TCAS."

**PART C: ASSESSMENT OF CAUSE AND RISK**

Cause: The RC135 pilot was concerned by the proximity of the F15s.

Degree of Risk: E.

Safety Barrier Assessment<sup>4</sup>

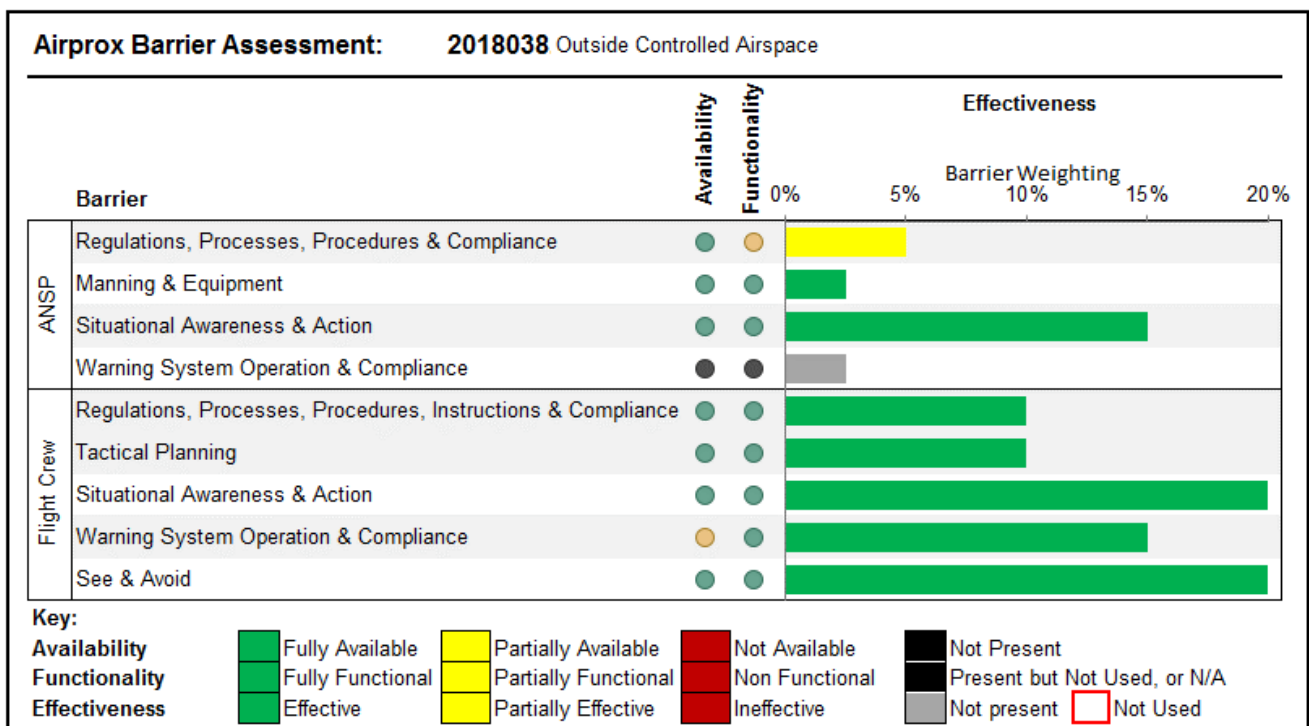
In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

**ANSP:**

**Regulations, Processes, Procedures and Compliance** were assessed as **partially effective** because although the Swanwick Mil controller issued Traffic Information to the F15 pilots he did not pass reciprocal information to the RC135 pilot.

**Flight Crew:**

**Warning System Operation and Compliance** were assessed **fully effective** even though only **partially available** because only the RC135 was equipped with an electronic warning system.



<sup>4</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).