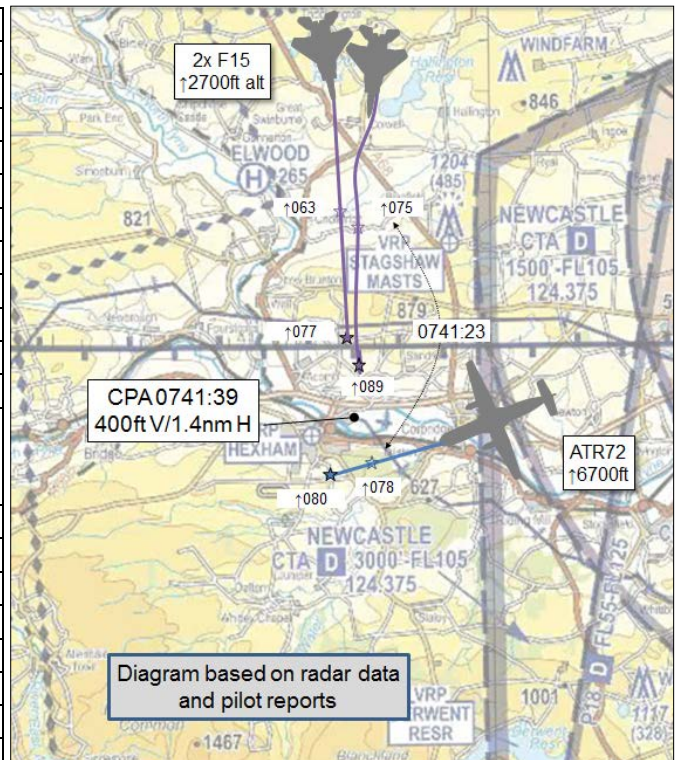


AIRPROX REPORT No 2016135

Date: 12 Jul 2016 Time: 0741Z Position: 5457N 00205W Location: 14nm sw Newcastle

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	ATR72	2 x F15
Operator	CAT	Foreign Mil
Airspace	Lon FIR	Lon FIR
Class	G	G
Rules	IFR	VFR
Service	Deconfliction	None
Provider	Newcastle	
Altitude/FL	FL080	FL089/FL077
Transponder	A, C, S	A, C, S
Reported		
Colours	Company	Dark Grey
Lighting	Nav, Strobe	Anti-cols, Beacon, Position light
Conditions	VMC	VMC
Visibility	20km	8km
Altitude/FL	FL077	FL100
Altimeter	1013hPa	(1013hPa)
Heading	west	180°
Speed	170kt	375kt
ACAS/TAS	TCAS II	Not fitted
Alert	TA	N/A
Separation		
Reported	0ft V/1.5nm H	1.5nm H
Recorded	400ft V/1.4nm H	



THE ATR72 PILOT reports that he was receiving a Deconfliction Service from Newcastle Approach. The controller advised him that there were 2 F15s in the area, that he didn't have comms with them, but that they were low-level, heading away and not considered a threat. Shortly afterwards the F15s were observed on TCAS and appeared to be on a direct intercept track and climbing towards them. The controller advised that they still didn't have any communication with them but that the best form of avoiding action would be to maintain heading. They received a TCAS TA and it indicated that the F15s passed at the same level within 1.5nm.

He assessed the risk of collision as 'Medium'.

THE F15 PILOT reports that on climb-out from LFA12, they were attempting to contact Swanwick(Mil). Unable to contact Swanwick, they instead contacted Newcastle Approach, whilst still in the TRA. Having established radio contact with Newcastle, they received Traffic Information on civil traffic that they were already visual with. The civil traffic was tracked and deemed to be no factor during the climb.

He assessed the risk of collision as 'None'.

THE NEWCASTLE APPROACH CONTROLLER reports that the Airprox occurred between a departing ATR72 and 2 F15s climbing out of low-level. The F15s were southbound and climbing when they passed 1.5nm behind the ATR72, passing through the same level (FL082) The ATR72 pilot received a TCAS TA.

Factual Background

The weather at Newcastle was recorded as follows:

EGNT 120720Z 28008KT 9999 SCT045 12/09 Q1009=

Analysis and Investigation

CAA ATSI

ATSI had access to reports from the controller involved, the pilots of both the ATR72 and the F15s, area radar recordings¹, the Newcastle Radar R/T and the unit investigation report.

At 0737:52, the pilot of the ATR72 contacted Newcastle Radar. The controller instructed them to route direct to the Dean Cross VOR and to climb to FL160. The F15s, which had been observed routing as far as 30nm north of Newcastle, had just completed a turn to track southbound.

At 0738:08 the Newcastle radar controller advised the ATR72 pilot that they would be leaving controlled airspace in 5nm and that it would then be a Deconfliction Service. The F15s were still southbound, 20nm north of Newcastle indicating below 2000ft (Figure 1).

At 0738:40 the controller passed Traffic Information to the ATR72 advising “...15 miles north of you, southbound not speaking to me, is what looks like a pair of F15s low-level. They are very fast, they are low level, but obviously if they start to climb I will keep you advised” (Figure 2). At 0740:45 the controller updated the ATR72 on the position of the F15s, advising “...they’re well below you, they’re indicating altitude 3000ft. They’re 5 miles north of you southbound. The present track they’re going to pass underneath you in about a minute” (Figure 3).

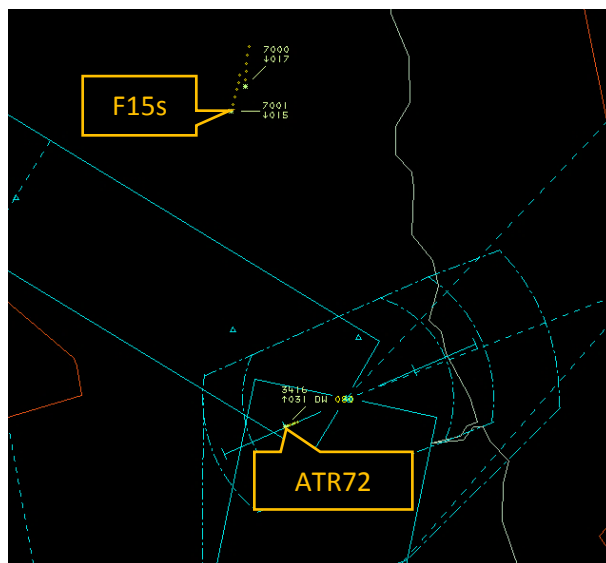


Figure 1 – Prestwick MRT – 0738:08

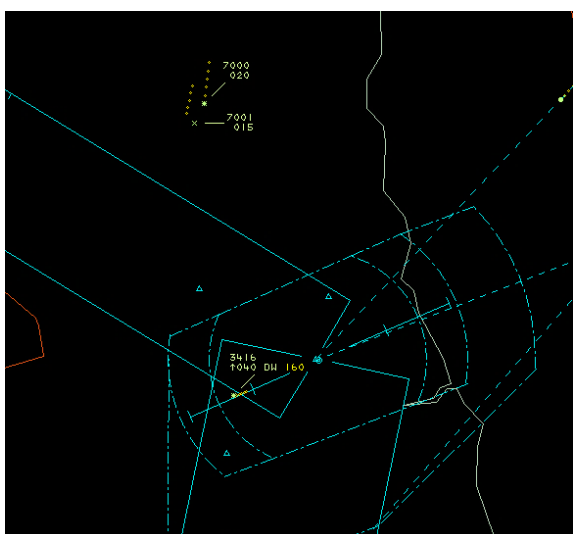


Figure 2 – Prestwick MRT – 0738:40

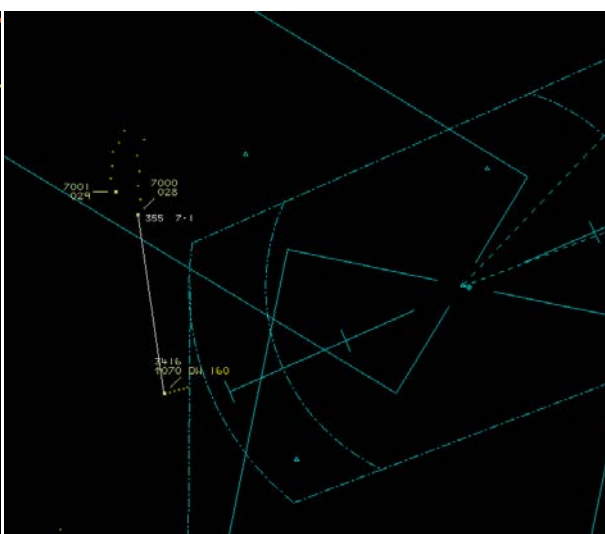


Figure 3 – Prestwick MRT – 0740:45

¹ Note – any indications of STCA on the Prestwick MRT recordings shown in Figures 4-6 are not necessarily representative of the information available to the Newcastle controller using separate radar sources and display

At 0741:05 the controller passed further Traffic Information, advising that they were “...indicating altitude 5300ft and climbing. Their present track will take them er, just behind you. Continue your present track”. This was acknowledged by the ATR72 pilot confirming they had the F15s on TCAS (Figure 4). At 0741:20 the controller confirmed that avoiding action would be for the ATR72 to continue its present track which was acknowledged by the pilot who advised that they were “...getting extremely close”. The controller confirmed that they were “...passing behind you now at your altitude and climbing through it, now above you” (Figure 5).

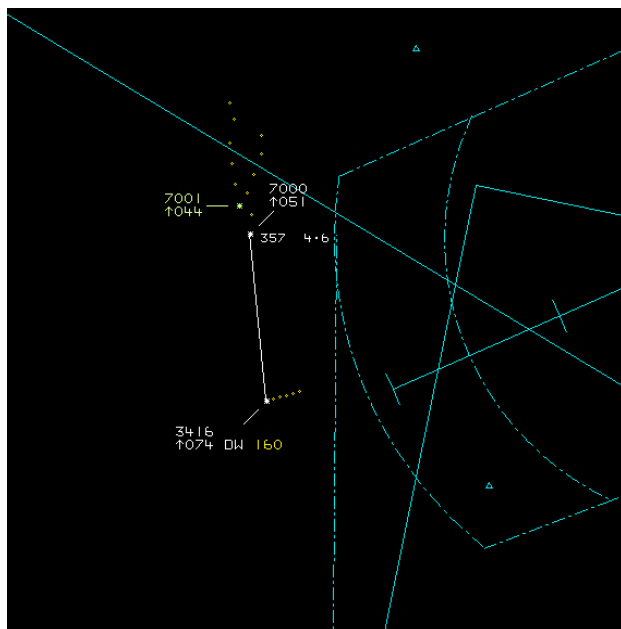


Figure 4 – Prestwick MRT – 0741:05

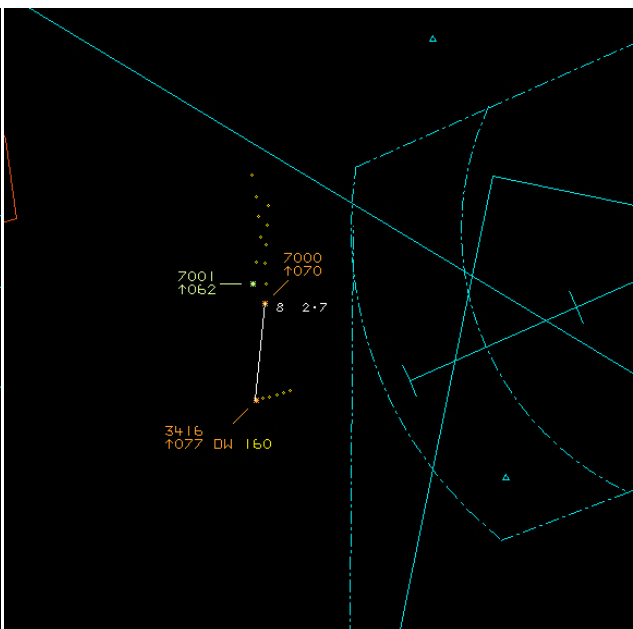


Figure 5 – Prestwick MRT – 0741:20

CPA was at 0741:35 with the closest F15 within 1.4nm laterally and 400ft vertically (Figure 6).

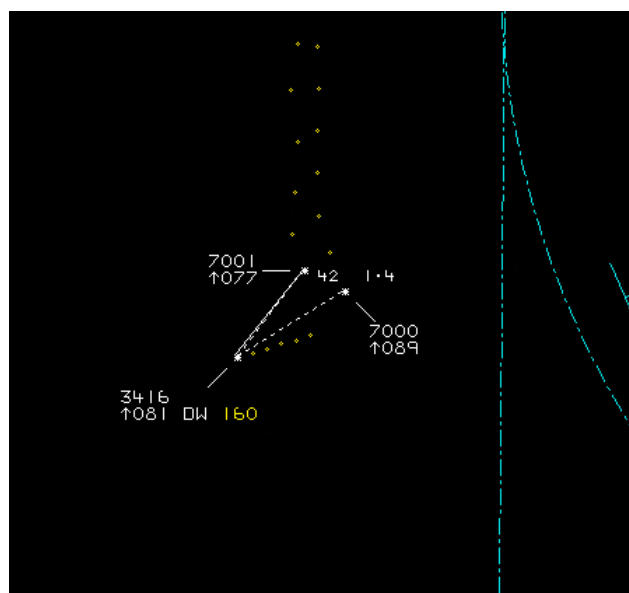


Figure 6 – Prestwick MRT – 0741:35

Newcastle is located within Low Flying Area 12 (LFA12) and the ATSU there has a long association with military entities using this area. The controllers are trained and highly experienced in the handling of military aircraft, providing a surveillance service to military aircrews entering and leaving LFA12. The profile of the F15s flight that day was representative of military traffic intending either to remain within LFA12 by passing through what is officially called the

Newcastle CTZ/LFA13 Gap², (known by both Newcastle ATC and military aircrew as the “Hexham Gap” because Hexham is a small town located directly underneath this route), or to climb out of the LFA to high-level. Although it would be normal for a low-level transit to be conducted below the levels flown by the F15s, there is no actual level for transit specified to military aircrew.

According to the UK Mil Low Flying Handbook [UKAB Note: applicable to military aircraft flying at or below 2000ft agl] *“All [low-flying] ac should call Newcastle App on 284.6 or 124.375Mhz 2 mins prior to the gap stating their position, altitude and intended track.”* No such call was received from the F15s [UKAB note: because they were not at low-level and therefore not required to make this call].

Military aircraft intending to exit the LFA would not normally contact Newcastle Approach, because their subsequent flight would normally involve a crossing of the airway P18 to the south of Newcastle. This is facilitated by use of the TILNI Radar Corridor (RC), an area 10 miles wide at FL190 controlled by Swanwick Military East. Aircrew wishing to transit this RC are instructed to contact Swanwick Mil East (if not already in communications with them), 5 minutes in advance.³ Newcastle controllers would expect to see the allocation of a Swanwick Military transponder code to such aircraft at that time, which would indicate and give warning that the aircraft was due to climb-out from low level.

As part of the unit investigation at Newcastle, the controller submitted a detailed statement of their thought processes and actions. They had been fully aware of the F15 activity and had temporarily made the ATR72's departure the subject of a radar release as the pair routed northbound to the west of Newcastle's controlled airspace. After the ATR72 had departed, the controller elected to allow the aircraft to continue on its flight-planned route due to the position and vertical profile of the F15s (still maintaining below 3000ft with the ATR72 already 3000ft above and continuing its climb as it left Newcastle's controlled airspace). The Newcastle controller also stated that they were *“half expecting the F15s to take the standard military low level route East of Hexham....”*

The ATR72 pilot was correctly advised of their impending exit of controlled airspace, and the Deconfliction Service that the Newcastle controller intended to provide, which was accepted by the pilot. The pilot was also advised before leaving controlled airspace of the presence of the two F15s. It was judged that the suggested avoiding action given to the ATR72 of maintaining their current track was, in the circumstances, the correct advice.

The report from the pilot of one of the F15s stated that they had attempted to call Swanwick Mil without success, and then elected to contact Newcastle instead, by which time they were already south of the Hexham Gap, and also clear of the ATR72. They also stated that they had been visual with the ATR72 and had been avoiding it during the climb. The pilot of the ATR72 reported receiving a TCAS TA.

The actions of the controller were correct and in accordance with the Manual of Air Traffic Services, CAP493 which states:

*“In Class G airspace, separation between aircraft is ultimately the responsibility of the pilot; however, in providing a Deconfliction Service or a Procedural Service, controllers will provide information and advice aimed at achieving a defined deconfliction minima.”*⁴ The associated deconfliction minima against uncoordinated traffic are:

- 5 nm laterally (subject to surveillance capability and regulatory approval); or
- 3,000ft vertically and, unless the SSR code indicates that the Mode C data has been verified, the surveillance returns, however presented, should not merge.⁵

² UK Mil Low Flying Handbook

³ UK MIL AIP ENR 5-1-7

⁴ Section 1: Chapter 3: Separation Standards

⁵ CAP774 UK Flight Information Services, Chapter 4

An information call from the F15s to Newcastle prior to their arrival at the Hexham Gap would have given an opportunity to the Newcastle controller to pass early Traffic Information on the ATR72, (and any other relevant traffic such as opposite-direction military traffic), and would have allowed possible coordination of any climb of the F15s against the ATR72, something frequently achieved with military aircrew in similar circumstances.

UKAB Secretariat

The ATR72 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 hazard⁶. As they approached the ATR72 from the rear quadrant, nominally in an 'overtaking' situation (with an angle of less than 70° to the plane of symmetry of the ATR72), the F15s were required to 'keep out of the way' of the ATR72, which they did⁷.

Comments

USAFE

ATSI's point is taken with regard to the entry in the UKMLF Handbook that refers to the Hexham Gap; however, as the F-15s had climbed out the UKLFS to the north of the Hexham Gap they thought it best to contact Swanwick Mil for a service. In hindsight, an initial call to Newcastle would perhaps have been a better option in this case. Nevertheless, the F-15 formation sighted the ATR72 is sufficient time to ensure that no risk of collision existed.

Summary

An Airprox was reported when an ATR72 and a formation of 2 F15s flew into proximity at 0741 on Tuesday 12th July 2016. The ATR72 pilot was operating under IFR in VMC, and in receipt of a Deconfliction Service from Newcastle, the F15 pilots were VFR in VMC and not in receipt of an ATS, although they called Newcastle for a Traffic Service moments later.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both aircraft, transcripts of the relevant RT frequencies, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

The Board first looked at the actions of the pilots. The ATR72 pilot was on climb-out from Newcastle, and in Class G airspace when the Airprox occurred. He was receiving a Deconfliction Service from Newcastle ATC, but was understandably uncomfortable with the situation as it unfolded. That said, the Board noted that, ultimately, being Class G airspace, both aircraft were entitled to operate where they were, and encountering unknown traffic on a see-and-avoid basis was one of the hazards of flying in such airspace that had presumably been fully considered by the aircraft's operating authority as an associated risk.

For their part, the F15s were fully entitled to fly where they were without talking to any controlling agency as they pulled up out of low-level and prepared to call Swanwick for a radar service and crossing of the TILNI corridor. Members noted that when they couldn't get two-way RT with Swanwick, the F15 crew sensibly switched to Newcastle for a service. Notwithstanding their compliance with airspace procedures, given the proximity of Newcastle Airport and associated traffic, some members wondered whether they might have been better placed by calling Newcastle first anyway. Other members who were familiar with the area and military fast-jet operations countered that there was very little time to climb and position for the corridor, so calling Newcastle, and then needing a hand-over to Swanwick, involved increased workload for all parties. Ultimately, the Board

⁶ SERA.3205 Proximity.

⁷ SERA 3210 Overtaking.

noted that the F15 crew had been aware of the ATR72 from some distance, first on their radar and then visually, and, mindful of TCAS, had turned to go behind it at least 1.4nm clear, which the Board thought demonstrated good airmanship on their part.

Looking at the actions of the Newcastle controller, the Board thought that he had also done all that he could do in the circumstances. He gave Traffic Information on the F15s to the ATR72 pilot and, familiar with their likely routing, gave him plenty of information on type and that they were likely to climb. He kept updating the position of the F15s to the ATR72 pilot, but it was probably a combination of the fact that the ATR72 pilot could see the fast moving traffic on his TCAS, and the uncertainty of the situation (especially given that the best avoiding action was to maintain heading), that caused the ATR72 pilot to be concerned.

In assessing the safety barriers relevant to this incident, the Board thought that in this case all of the barriers had been effective. The controller had given plenty of Traffic Information and had provided situational awareness to the ATR72 pilot. The TCAS on the ATR72 had given the pilot more information (as had the F15s radar to them), and the F15s were visual in plenty of time to take appropriate action under see-and-avoid.

Turning to the cause and risk of the Airprox, the Board thought that the proximity of the aircraft had been such that ultimately this was a TCAS sighting report. Because normal safety standards had pertained, the incident was assessed as risk Category E.

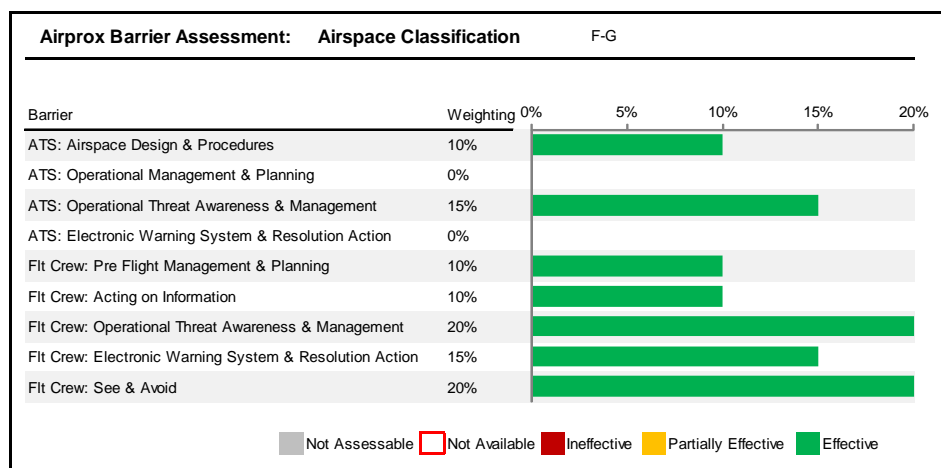
PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A TCAS sighting report.

Degree of Risk: E.

Barrier Assessment:

Modern safety management processes employ the concept of safety barriers that prevent contributory factors or human errors from developing into accidents. Based on work by EASA, CAA, MAA and UKAB, the following table depicts the barriers associated with preventing mid-air-collisions. The length of each bar represents the barrier's weighting or importance (out of a total of 100%) for the type of airspace in which the Airprox occurred (i.e. Controlled Airspace or Uncontrolled Airspace).⁸ The colour of each bar represents the Board's assessment of the effectiveness of the associated barrier in this incident (either Fully Effective, Partially Effective, Ineffective, Not Available, or Not Assessable). The chart thus illustrates which barriers were effective and how important they were in contributing to collision avoidance in this incident.



⁸ Barrier weighting is subjective and is based on the judgement of a subject matter expert panel of aviators and air traffic controllers who conducted a workshop for the UKAB and CAA on barrier weighting in each designation of airspace.