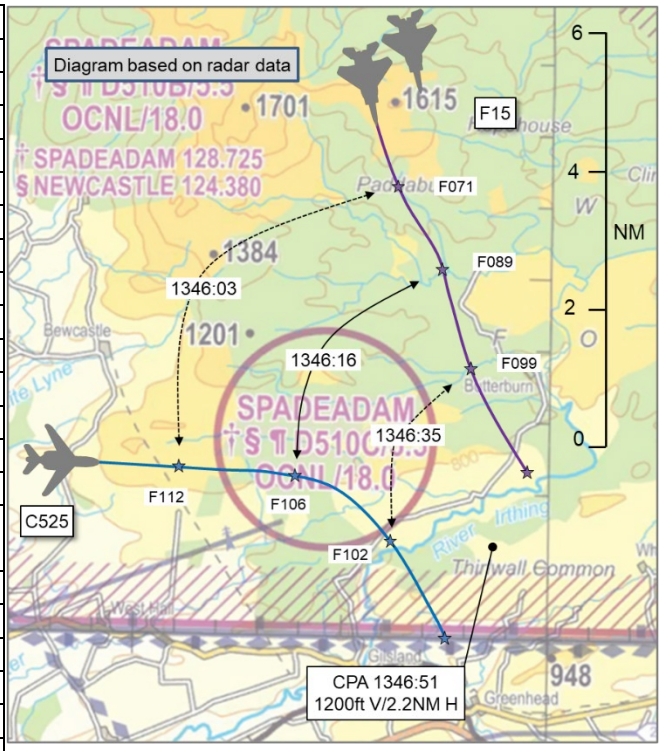
AIRPROX REPORT No 2024136

Date: 18 Jun 2024 Time: 1347Z Position: 5501N 00231W Location: Spadeadam

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Citation C525	F15
Operator	Civ Comm	Foreign Mil
Airspace	Scottish FIR	Scottish FIR
Class	G	G
Rules	IFR	IFR
Service	Deconfliction [1]	Traffic
Provider	Newcastle Radar	Swanwick Military
Altitude/FL	FL100	FL088
Transponder	A, C, S+	A, C
Reported		
Colours	White and blue	Grey
Lighting	Flashing red/white	HISL
Conditions	VMC	IMC
Visibility	5-10km	<5km
Altitude/FL	Descending to FL100	Descending
Altimeter	SPS (1013hPa)	SPS (1013hPa)
Heading	107°	180°
Speed	280kt	400kt
ACAS/TAS	TCAS II	Not fitted
Alert	None	None
Separation at CPA		
Reported	Not seen	1200ft V/3-5NM H
Recorded	1200ft V/2.2NM H	



THE NEWCASTLE CONTROLLER reports that the C525 had been inbound from […] and had been coordinated at FL100 with Tay. At the time, they had discussed 2 military contacts manoeuvring low-level heading north towards D512 at 1500ft and squawking 7001. As the C525 [pilot] had come on frequency, the 7001 squawk had popped-up [and had] looked like a pair at 5000ft and climbing. The controller initially gave a right turn onto a heading of 180°, then upgraded to avoiding action with a greater turn to a heading of 270°. Upon passing FL80, the 7001 squawk had changed onto a 6441 squawk. The military contact levelled at FL99 and then started descent again. The controller believes that separation at a similar level had been 2NM as the C525 had turned away and lateral separation increased, as did vertical separation. No STCA had been activated, possibly because the tracks had not been converging. The Swanwick Military Supervisor had been contacted to inform them of the occurrence and they gave the following details: squawk 6441 had been working their West Sector, a pair of F15s, [F15 formation C/S]. [The Swanwick Military controller] confirmed that they had also issued avoiding action to [the F15 formation pilot].

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

THE C525 PILOT reports that their flight from [departure airfield] to [destination airfield] had been proceeding normally on autopilot in smooth air at FL230 on a direct track from position […] to the 'NEW' VOR, with the expectation of receiving radar vectors for the NDB ILS DME RW07 approach into [destination airfield]. In descending from FL230 to the cleared FL100 and on approaching FL110 they had been instructed to "Immediately turn right" (or words to that effect). The instruction had been followed immediately, and descent continued to FL100. A full 360° right turn back to the previous track was executed smoothly on autopilot. The pilot reports no recollection of any nearby returns on TCAS and no RA had been received either prior or subsequent to the 360° turn. Vectors to the RW07 ILS

[1] Pilot reported 'Radar Control Service'.

Localiser for a straight-in approach had been given shortly after the turn was completed. The landing proceeded normally and no further communications were received.

THE F15 PILOT reports that their report had been submitted after contact from RAC. [F15 formation C/S] had been climbing out of the low-level system after operating at RAF Spadeadam. [F15 formation C/S] had planned to call Swanwick Military on completion of their low-level sortie, stopping climb at FL100 to reduce time spent in the lower block and remaining outside CAS for a Traffic Service and clearance into Class C. As the formation had entered the climb they had elected to remain clear of cloud during the climb whilst establishing contact with Swanwick Military. The formation had retained the low-level squawk until ATC had provided a discrete code. Due to cloud, which had been broadly SCT 030-090 with more dense formations to the south of RAF Spadeadam, the crew had elected to increase the angle of climb to remain clear of cloud/climb above. As the crew had been preparing to level at FL100, and as the controller identified the formation, the controller had issued avoiding action to descend. The formation immediately followed this instruction, which required a descent into cloud at ~FL90. Due to formation rules, the number 2 was required to increase the distance from number 1 and slowed before entering the cloud. The back seat crew member of the lead aircraft had sighted the civil jet just prior to entering cloud. The civil aircraft had been 2 o'clock approximately 3-5NM distance and 1000ft-2000ft above. The civil aircraft had been flying westerly and did not appear to be turning or banking. The crew member had looked back at the number 2 in their formation who had been at their 5 o'clock slightly above and descending, at a range of approximately 0.5NM increasing to 1NM before entering cloud and losing sight of both. The crew member assessed that both formation members had safe separation from the civil aircraft as they had descended into cloud. They assessed the risk of collision prior to the avoiding action issued by the controller as 'low', and after the avoiding action issued as 'none'.

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

THE SWANWICK MILITARY CONTROLLER reports that whilst monitoring ICFs they had received a free-call from [F15 formation C/S]. They had been climbing to FL100 in the vicinity of Spadeadam requesting a Traffic Service for RTB [destination airfield]. Once identified, the controller had seen that they had been passing FL90 climbing beneath a [… inbound] callsign [C525 C/S], who had been level at FL100. Although under Traffic Service inside Class G, the controller had issued an avoiding action to descend to FL70 immediately as they had believed there had been a risk of collision. The controller saw that the C525 pilot also took an avoiding action turn. The controller had notified the Supervisor of the event. Once clear, the controller had climbed [the F15 formation] to their requested level and handed them over to Leeming LARS.

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

Factual Background

The weather at Newcastle was recorded as follows:

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METAR EGNT 181320Z 08004KT 050V120 9999 SCT017 BKN032 14/10 Q1016=
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Analysis and Investigation

CAA ATSI

This is not an infrequent occurrence in this area: IFR aircraft inbound to […] from the Scottish TMA, now outside controlled airspace, passing just to the south of the Spadeadam Electronic Warfare Range with military traffic climbing out from low-level.

Transcript

1345:32 C525 called descending FL100.
ATCO "C525 Newcastle Radar hello – you are identified Deconfliction Service Information Alpha vectoring ILS approach RW07".

1345:39 C525 pilot – “Roger we have information Alpha (C/S)”.
1345:50 ATCO - If you turn…. C525 turn right heading 180° there is traffic north of you by 7 miles at 6000 - correction. If you turn right heading 270°. Avoiding action. The traffic is 5 miles north of you at FL70.
1346:10 C525 pilot – “Turning right, heading 270° confirm?”.
1346:15 ATCO – “Affirm heading 270° the traffic is a fast-moving military jet at FL90 turn right heading 270° immediately.
C525 Pilot – “[C/S] turning now”.
1346:40 ATCO – “[C525 C/S] the traffic is now in your left er 7 o’clock by 2 miles FL90 climbing”.
C525 Pilot –“ [C525 C/S] roger do you want us to keep turning right to 270°?”
1346:46 ATCO – “Affirm keep turning right heading 270°”.
1346:50 CPA
1347:12 ATCO – “[C525 C/S] if continue the right heading 090° the traffic is now in your 6 o’clock at FL70 descending”.

With the controller at Newcastle having been a trainee and their first exposure to this, they had performed well.

Had the F15’s been officially operating inside the Spadeadam range, then there is an opportunity to mitigate such conflictions according to an LoA which exists between Newcastle and RAF Spadeadam – but that relates to military traffic which has “booked-in” to the range, not low-level traffic which happens to be in the area (as in this case).

Military ATM

During the period preceding the Airprox, the F15 formation had been low-level in the vicinity of RAF Spadeadam and the C525 had been descending FL230 to FL100 inbound to [destination airfield].

Sequence of Events

At 1345:43, the F15 formation had climbed out of low-level free-calling Swanwick Mil on the initial contact frequency. The original message had been unreadable, most likely due to poor radio coverage whilst low-level. The Swanwick Mil controller, anticipating a free-call request, had issued a Squawk in response to aid with the expected identification.

At 1346:03, the F15 formation had provided a position report and intentions to the Swanwick Mil controllers, “we’re currently leaving, up to the northwest of Leeming, sixty miles, looking to RTB [destination airfield], closing up to standard at this time, Flight Level 100 for now”.

At 1346:24, the Swanwick Mil controller had identified the F15 formation, provided Traffic Service and immediately issued avoiding action to the formation to resolve the closing separation between them and the C525 “Identified, Traffic Service, avoiding action, descend Flight Level 80 immediately, traffic right, one o’clock, 3 miles, manoeuvring, indicating Flight Level 100.” The C525 [pilot] had also been issued avoiding action by Newcastle Radar and had been turning right.

At 1346:39, the F15 formation acknowledged the avoiding action, reported descending and visual with the C525 “visual with that traffic, in the descent to Flight Level 80.”

Local BM Investigation(s)

A local investigation was conducted by 78 Sqn following the event to identify the Air Traffic Services related causal/aggravating factors. It was assessed that the controller had acted accurately with timely avoiding action provided, that both prevented further decrease of separation and aided the F15 formation pilots to achieve visual [contact] with the C525.

2 Gp BM Analysis

Within 36sec of the F15 formation's position report, the Swanwick Mil controller had issued a Traffic Service, Traffic Information and avoiding action. The timely actions taken by the Swanwick Mil controller are deemed suitable and they ultimately prevented a much closer Airprox through their actions.

UKAB Secretariat

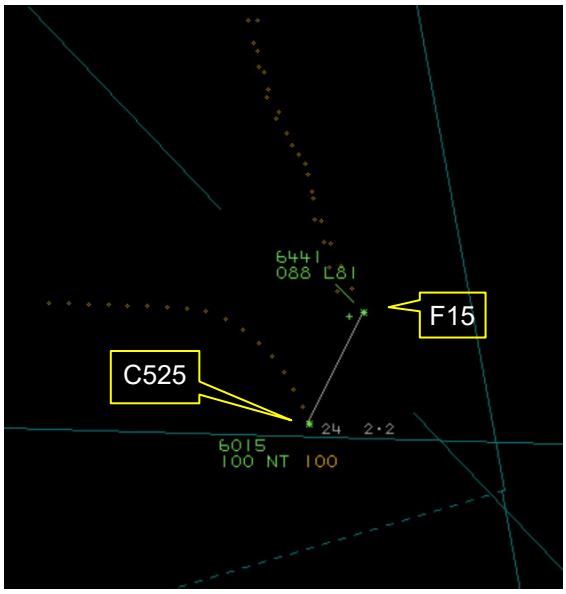


Figure 1: CPA at 1346:51: 1200ft V/2.2NM H

Figure 2: Right-hand 360° avoiding action at~1346 as directed by Newcastle Radar for the C525

The C525 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.[2] If the incident geometry is considered as converging then the F15 pilot was required to give way to the C525.[3]

Comments

USAFE

The operator flight safety team for the F15 carried out a precursory review of the report and has recorded the occurrence as an observation but determined that safe separation was not lost and that there had been limited risk; commensurate with operating in uncontrolled airspace under a Traffic Service.

The crews of the F15s elected to reduce their time in the lower levels of uncontrolled airspace where the risk of encountering light GA aircraft is higher. Further to this, the flight lead had elected to

[2] (UK) SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.
[3] (UK) SERA.3210 Right-of-way (c)(2) Converging. MAA RA 2307 paragraph 12.

attempt to remain clear of cloud whilst they did not have an appropriate ATC service. These factors, and the geometry of the airspace, resulted in a relatively steep and rapid climb. The flight lead followed the correct protocol of retaining the 7001 squawk in the climb, whilst attempting to obtain an ATS for transit. In selecting a service provider, USAF crews climbing out of low-level will consult their charts which display the relevant Swanwick Mil ICFs and also LARS providers. As the intent of the crew was to climb into Class C airspace for their transit, the call to Swanwick Mil appeared to be sound. The crew commends the Swanwick Mil controller for the early action which enabled the continued safe separation of the aircraft.

Summary

An Airprox was reported when a C525 and an F15 flew into proximity at Spadeadam at 1347Z on Tuesday 18th June 2024. Both pilots were operating under IFR, the C525 pilot in receipt of a Deconfliction Service from Newcastle Radar and the F15 pilot 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.

Members firstly considered the actions of the Newcastle controller, noting that the C525 had been subject to a Deconfliction Service whilst inbound to its destination. The controller had maintained good situational awareness and communication and had acted in a timely and appropriate manner. The Board recognised the proactive communication between the 2 controlling agencies.

The Board then considered the contribution from the Swanwick Military controller recognising that the F15 pilot had free-called whilst climbing out of low-level and that the controller had quickly established a Traffic Service and acted promptly on recognising the proximity of the crossing C525.

Members felt that the contribution and actions from the 2 controllers had been significant in ensuring safe separation in this event.

In considering the actions of the pilots involved, they noted positively that both had sought appropriate Air Traffic Service support and had acted promptly when instructed. They noted that, although the weather had been marginal, one member of the F15 formation crews had achieved visual contact and been comfortable that there had been no risk of collision between themselves and the C525.

In conclusion, members agreed that the separation between the aircraft had been such that normal safety standards and margins had pertained. Members were satisfied that there had not been a risk of collision and assigned Risk Category E to this event.

Members agreed on the following contributory factors:

CF1: Both the Swanwick Military and Newcastle controllers had been concerned by the proximity of the F15 and the C525.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

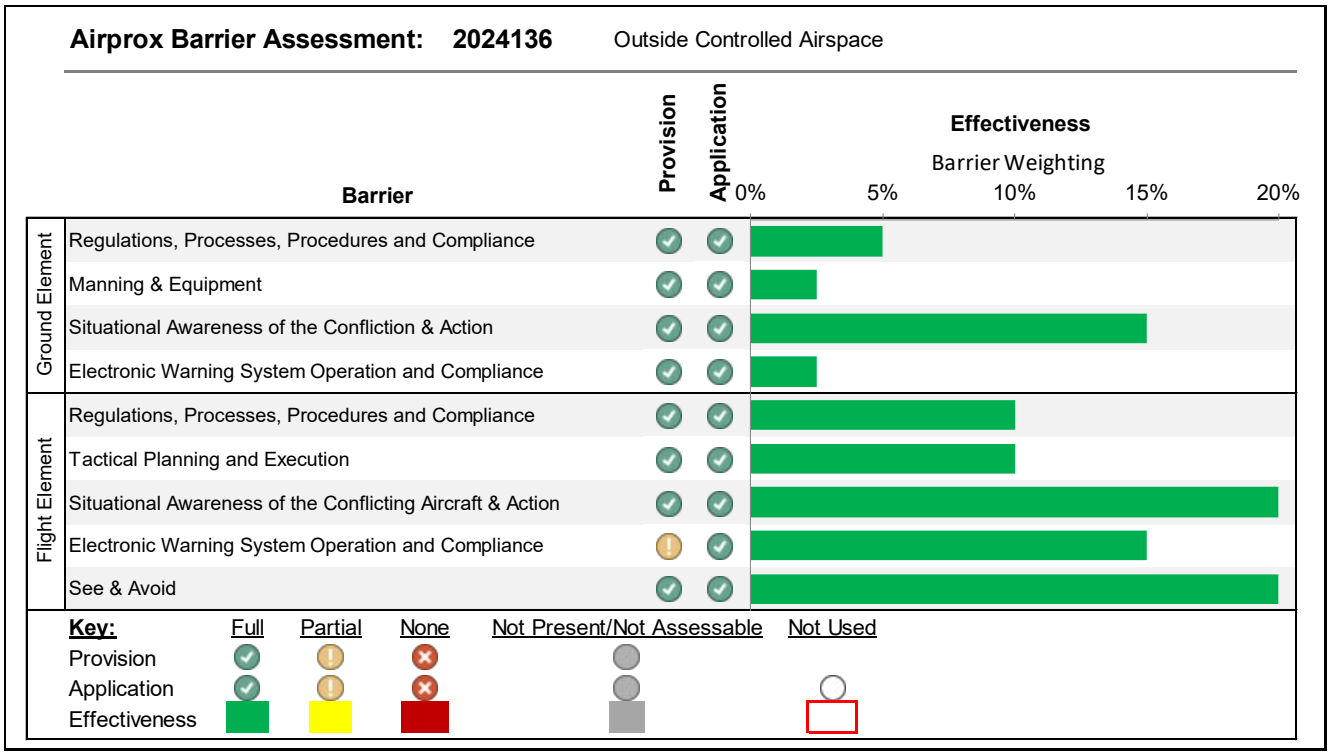
	2024136			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Situational Awareness and Action			

1	Human Factors	• Expectation/ Assumption	Events involving an individual or a crew/ team acting on the basis of expectation or assumptions of a situation that is different from the reality	Concerned by the proximity of the aircraft

Degree of Risk: E.

Safety Barrier Assessment[4]

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that all Safety Barriers had been fully effective:



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