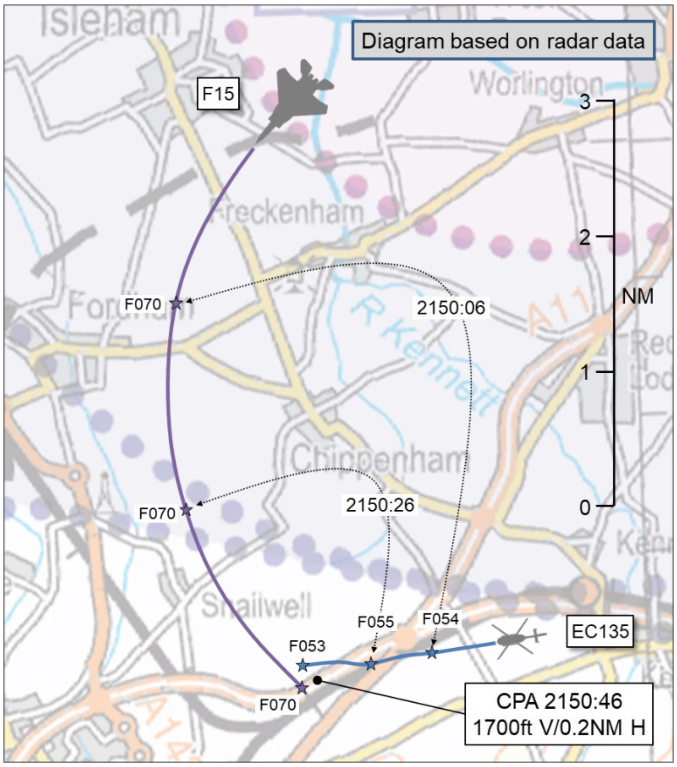
AIRPROX REPORT No 2024294

Date: 22 Nov 2024 Time: 2151Z Position: 5216N 00026E Location: 2NM NE Newmarket

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	EC135	F15
Operator	NPAS	Foreign Mil
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Traffic
Provider	Lakenheath Appr.	Lakenheath Appr.
Altitude/FL	FL053	FL070
Transponder	A, C, S	A, C
Reported		
Colours	Blue, yellow	Grey
Lighting	Nav, strobe	Anti-col, nav, formation
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	5500ft	FL60
Altimeter	QNH	29.92inHg
Heading	270°	NR
Speed	120kt	NR
ACAS/TAS	TCAS I	Other
Alert	None	Information
Separation at CPA		
Reported	200ft V/400m H	NR
Recorded	1700ft V/0.2NM H	



THE EC135 PILOT reports that they had flown at 1500ft towards Lakenheath ATZ, contacted Lakenheath Radar on 128.900MHz (the EC135 is not UHF-equipped) and were given a clearance into the zone at 1500ft. They were not informed of any other traffic in the zone and they didn't receive any traffic returns on their TCAS. They saw red flashing lights in the area of the Lakenheath ATZ (which, at the time, they believed were drones) at a height in excess of 1500ft. [The pilot of the EC135 reported initially that] the 'drones' appeared to be carrying out large orbits of Lakenheath airfield. They vacated the zone, and had advised ATC of their intentions to vacate the zone, and then climbed to estimate the height of the 'drones'.

After climbing to approximately 4000ft, they started heading east towards Bury St Edmunds, tracking a 'drone' which was to the north of them at a slightly greater altitude. Several transmissions were made to ATC to explain what they were doing as well as what the 'drones' were doing. Once they started heading in a westerly direction (now at 5500ft) one of the 'drones' appeared to converge with them and fly above and in front of them.

[UKAB Secretariat note: This is the moment that, after analysis, was determined to have been the Closest Point of Approach (CPA)].

By then, they were aware that ATC was speaking to other callsigns (F15s) and the [F15 callsign] was heard but, at the time, they were not aware that they were in the zone. There were still no returns on their TCAS. A descending turn to the left was carried out to increase their perceived separation from the 'drone'. [The pilot of the EC135 reported initially that] at one stage they had a significant rate of descent at 145kt and the 'drone' overtook them, maintaining a constant height above them. Now on a southerly track, they continued the descent to below 2000ft where it appeared that the 'drone' was no longer tracking them. There was two-way communication with the pilot of the [F15] during the last direction change, where [the pilot of the EC135] stated that they thought they were being shepherded

away from the area and they would return to base. [The pilot of the EC135] cleared with ATC and returned to base.

The pilot and crew of the EC135 commented that they did not observe standard aircraft lights visually and none were picked up on the onboard camera systems. This may have reinforced the crew's perception that they had observed a drone.

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

THE F15 PILOT reports that, around 2200, [they were] general-handling within an agreed block of SFC-FL150 within 20NM of RAF Lakenheath, with Lakenheath Radar Approach Control (RAPCON) 'Overlord', on UHF. [The pilot of the F15] remained outside controlled airspace. In line with standard operating procedure, [they were] operating with anti-collision lights, nav lights and formation lights all switched on and they were operating their transponder with Modes A and C. They were paying particular attention to their levels due to the proximity of the controlled airspace to their operating area. Towards the end of the sortie, they received communications on an Operations frequency that a police helicopter was operating in the area. They were initially unable to identify the helicopter using the onboard radar and asked Lakenheath ATC to provide a 'point-out' to the helicopter. The Lakenheath controller indicated the helicopter was 12NM range at 5000ft. After receiving the 'point-out', they were able to identify [the EC135] track using their onboard radar. They were also able to use other systems to support the crew in maintaining contact with [the EC135]. They then flew towards the helicopter whilst maintaining FL60. At that time, they requested to change to the same frequency as the police helicopter pilot, and they were given a VHF frequency (128.9MHz).

Lakenheath ATC repeatedly issued further Traffic Information to [the pilot of the F15] until the helicopter was sighted visually. [The pilot of the F15] was visual with the helicopter in their 10 o'clock at 1NM, 1000ft below them. Once visual, they utilised onboard sensors to maintain their situational awareness of the helicopter. They heard radio calls between the police pilot and Lakenheath ATC. They maintained at least 1000ft above the helicopter whilst in the vicinity and followed behind. [The pilot of the F15] tried 3 times to call the police pilot on the radio. The police helicopter pilot only responded directly to one of these calls and said something similar to 'we are going to RTB'.

[The pilot of the F15] observed the police helicopter make an aggressive 90-120° turn to the south and descend rapidly. They maintained their level overhead and behind the helicopter. On hearing that the helicopter pilot was returning to base, they turned north to return to Lakenheath.

THE LAKENHEATH APPROACH CONTROLLER reports that they were working in the Approach controller position with two F15s on a discrete frequency, 'Overlord', general-handling between the surface to FL150 within 20NM of RAF Lakenheath, outside controlled airspace. [The pilot of the EC135] called to the south, requested a Basic Service transit towards RAF Lakenheath. [The EC135] was radar identified and [the pilot] was provided a Basic Service. Due to the location of [the EC135], and the request to transit to RAF Lakenheath, coordination calls were made to RAF Mildenhall Tower and Lakenheath Tower for ATZ transits. Lakenheath Tower called shortly after the coordination call and requested to handle the traffic. [The pilot of the EC135] was then transferred to the Lakenheath Tower frequency.

Approximately 5min later, Lakenheath Tower called to coordinate [the EC135] back to Approach. The controller had observed the track to have transited east of Lakenheath, through the Lakenheath ATZ and then south, through the Mildenhall ATZ. At the time of the coordination call, the [EC135] was approximately 5NM south of Mildenhall. Approach accepted the traffic back.

As [the pilot of the EC135] called back to Approach, the [Approach] controller was aware of the Assistant and the Supervisor making coordination phone calls in response to checklists.

[The pilot of the F15] then called on the discrete frequency to request a 'point-out' to the police helicopter, which was given. They recall that, prior to that time, there had been no need to pass Traffic Information to either pilot due to lateral/vertical separation. They observed [the pilot of the F15] moving

towards [the EC135] and updated Traffic Information to both F15 pilots multiple times until they reported visual.

The controller continued to monitor the tracks and did not observe any unknown primary tracks in the vicinity of [the EC135]. As [the pilot of the EC135] moved south, they reported returning to base. The controller acknowledged and terminated the service.

THE LAKENHEATH APPROACH SUPERVISOR reports that they were monitoring radar and radios with 3 aircraft under service including [the pilot of the EC135]. When the Supervisor heard reports of an unusual occurrence, in accordance with facility checklists, the assistant and Supervisor began to make calls to the appropriate agencies to report the occurrence. There were several agencies on the lists across both bases. The Supervisor did not observe any unusual activity and reported that service provision was normal and safe.

THE LAKENHEATH TOWER SUPERVISOR reports that Lakenheath Tower received a coordination call from Lakenheath Approach that a police helicopter was inbound on a tasking. Tower requested to handle the traffic as they were visual with the activity out of the window and would be able to point this out to the helicopter pilot.

When [the pilot of the EC135] called on frequency, the Tower controller gave them a 'point-out' to possible activity to the west of the Tower. [The pilot of the EC135] reported sighting this activity and requested to route southwards. As they moved south, away from the Lakenheath ATZ, Lakenheath Tower coordinated with Mildenhall Tower for ATZ transit and then with Approach for further service.

Factual Background

The weather at Mildenhall was recorded as follows:

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METAR EGUN 222155Z 21006KT 9999 FEW030 01/M01 A2992 RMK AO2A SLP135 T00081010 $
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Analysis and Investigation

RAF Lakenheath RAPCON Unit Investigation

The Chief Controller team carried out an investigation into the event in conjunction with USAFE-UK A3 ATC Liaison.

It was evident from reviewing the radar recordings that the police helicopter pilot was likely reporting, and reacting to, activity of the F15s that were operating in the area. It appears that, at the time, the ATC staff and the pilots involved had not recognised this as a possibility. The recording shows no primary tracks in the vicinity of the police helicopter whilst under a service from Lakenheath. All aircraft under a service from Lakenheath at the time were observed and recorded to be squawking Modes A and C.

From a procedural perspective, with [the pilot of the EC135] under a Basic Service and [the pilot of the F15] under a Traffic Service, the controller had provided the services appropriately. Traffic Information was passed to [the pilot of the F15] on request, and updated until the crew reported visual. The controller appropriately monitored the tracks and was prepared to issue updated information but, due to the separation, there was no further requirement to provide Traffic Information.

The Closest Point of Approach observed on the Lakenheath radar recording was 1900ft vertical separation when within 1NM horizontally. [The pilot of the F15] had reported visual contact with the police helicopter and there was no risk of collision observed.

During the occurrence, the workload was complex. It would have been unusual and extremely difficult for the staff, given the circumstances, to question the reports from the pilot of the police helicopter.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and the EC135 could be positively identified from Mode S data (Figure 1). The F15 was identified by reference to the squawk observed and aircraft ID. The diagram was constructed and the separation at CPA determined from the radar data.

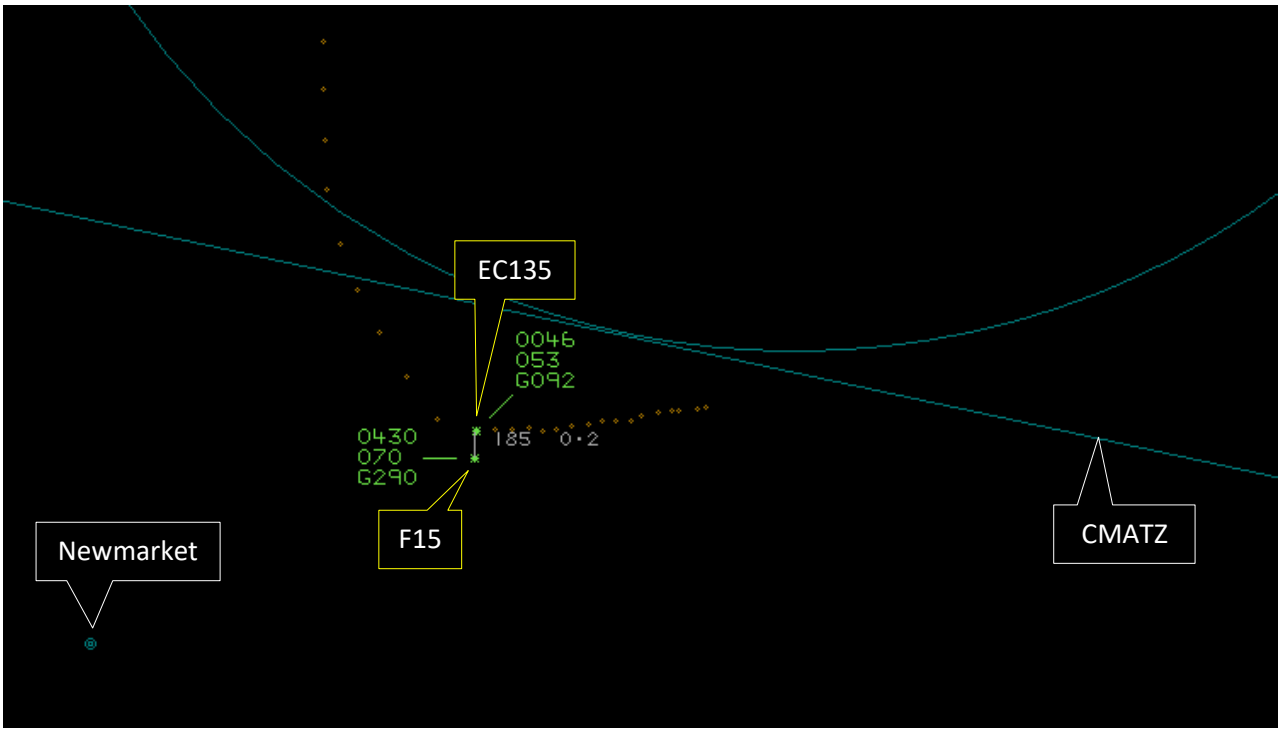

Figure 1 – CPA at 2150:46

The EC135 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.[1]

Comments

USAFE

It would appear that perception and human factors contributed heavily to the concern of the crew of the EC135 in that they perceived that the aircraft they could see out of the window was smaller and closer than it was in reality. ATC provided the agreed services to the pilots of both aircraft and were content that there was no collision risk, particularly as the pilot of the F15 had reported visual with the EC135. It is unfortunate that none of the crew involved, or the ATC staff, were able to identify that the EC135 pilot's radio reports may have related to the positions of the F15. This, however, was evident to the investigating team when reviewing the radar, radio and telephone recordings post event.

Unfortunately, there had been no pre-coordination to USAF agencies of the use of helicopters in planned-policing operations in the area, prior to the EC135's arrival.

Summary

An Airprox was reported when an EC135 and an F15 flew into proximity 2NM east of Newmarket at 2151Z on Friday 22nd November 2024. The EC135 pilot was operating under VFR in VMC in receipt of a Basic Service from Lakenheath Approach, and the F15 pilot was operating under VFR in VMC in receipt of a Traffic Service from Lakenheath Approach.

[1] (UK) SERA.3205 Proximity.

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 a report from the appropriate operating authority. 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 EC135. Members noted that, as part of an operational tasking, they had contacted the Lakenheath Approach controller and had requested a clearance to enter the Lakenheath ATZ. Members noted that a clearance had been issued (after coordination with the relevant units had been effected) and the pilot of the EC135 was subsequently requested to contact Lakenheath Tower to continue their task. Members noted that the Lakenheath Tower controller had not passed any information to the pilot of the EC135 on any traffic operating in the area but had given them a 'point-out' to "*possible activity to the west of the Tower*". This, members surmised, may have been assimilated by the pilot of the EC135 as a reference to the object of the Police tasking rather than information pertaining to any aircraft in the vicinity that may have affected their flight. Members suggested that, if the pilot of the EC135 had required specific information about known traffic in the area, it would have been prudent to have requested a Traffic Service.

After they had left the Lakenheath ATZ to the south, the pilot of the EC135 had re-contacted the Lakenheath Approach controller and had advised them, over several transmissions, of "what they were doing as well as what the 'drones' were doing".

Members noted that the TCAS fitted to the EC135 had not alerted to the presence of the F15 nor had it provided information on the presence of any other aircraft in the vicinity. Members noted that the NATS radar replay indicated that the F15 had been squawking Modes A and C and were at a loss to explain why it had not been detected by the TCAS. Members agreed that the pilot of the EC135 had not had any situational awareness of the presence of the F15.

Members turned their attention to the actions of the Lakenheath Approach controller and noted that they had coordinated the transit of the EC135 with the Tower controllers at Mildenhall and Lakenheath. Having received the pilot of the EC135 back on frequency, the Lakenheath Approach controller had subsequently received transmissions from them regarding the sighting of 'drones'. It occurred to members that the Lakenheath Approach controller may not have deduced that the EC135 pilot's references to 'drones' had correlated to the position of two F15s that had been in the area. Members noted that the pilots of the F15s had been given a block of airspace in which to operate for their general handling sortie (surface to FL150). It was therefore agreed by members that the pilots of the F15s had been cleared to operate through the altitude at which the EC135 had been 'known traffic'. As such, members noted that the pilot of the F15 (that was to ultimately become involved in the Airprox incident) had been given Traffic Information on the position of the EC135. However, members agreed that it may have been particularly beneficial for the situational awareness of the EC135 pilot if the Lakenheath Approach controller had passed reciprocal Traffic Information to them on the presence of the F15. However, members were in agreement that the Lakenheath Approach controller had not been required to have done so under the terms of a Basic Service. Nevertheless, some members wondered why the Lakenheath Approach controller had not concluded that the several calls made by the EC135 pilot regarding 'drones' in the area may have been of importance to their own situational awareness. As such, it was suggested that there had been an opportunity to have responded with words to the effect of "*nothing seen on radar*" or to have passed Traffic Information on the F15 or, indeed, to have passed Traffic Information to the pilot of the F15 on a possible drone sighting. Some members wondered whether the ATC staff's reaction to an 'unusual occurrence' had impacted their situational awareness of the traffic situation.

Members next considered the actions of the pilot of the F15 and noted that they had been operating in the Lakenheath area in a block of airspace from the surface to FL150. Members were in agreement that the Traffic Information provided to the F15 pilot by the Lakenheath Approach controller pertaining to the presence of the EC135 had been pertinent. However, it was not clear to members why the pilot of the F15 had subsequently requested a 'point-out' to the helicopter and had then flown towards it. Indeed, members noted that the pilot of the F15 had crossed in front of (although significantly above)

the EC135 on three occasions before the pilot of the EC135 had declared on frequency that they would return to base. Notwithstanding, members noted that the pilot of the F15 had attempted to make radio contact with the pilot of the EC135 directly.

Concluding their discussion, members summarised their thoughts. Members acknowledged that, with the absence of any indication to the contrary, the pilot of the EC135 had believed that they had been witnessing drone activity. Members appreciated that the incident had occurred at night, without good spatial clues and without the aid of a Night Vision Device. Some members therefore had some sympathy with the EC135 pilot in that they had believed that they had seen a drone, on a parallel or converging course, and had been concerned for the safety of their aircraft. However, after analysis, it was clear to members that the track of the F15 had correlated with the perceived position of the 'drone' and that they had actually sighted a fast-moving object at distance rather than a small object moving in close proximity. Members noted from the radar replay that the vertical separation had been significant and were satisfied that there had not been a risk of collision. The Board assigned Risk Category E to this event.

Members agreed on the following contributory factors:

CF1. Although not strictly required to do so under the terms of a Basic Service, the Lakenheath controllers had not passed Traffic Information on the F15s to the pilot of the EC135.

CF2. The EC135 pilot had no situational awareness of the presence or position of the F15s.

CF3. The EC135 pilot had been concerned by the proximity of the F15s, perceiving them to be drones.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024294			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Situational Awareness and Action			
1	Human Factors	• ANS Traffic Information Provision	Provision of ANS traffic information	TI not provided, inaccurate, inadequate, or late
	Flight Elements			
	• Situational Awareness of the Conflicting Aircraft and Action			
2	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
	• See and Avoid			
3	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: E.

Safety Barrier Assessment[2]

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

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

Ground Elements:

Situational Awareness of the Confliction and Action were assessed as **ineffective** because no Traffic Information had been provided by the Lakenheath Approach controller to the pilot of the EC135 on the F15.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the pilot of the EC135 had not had situational awareness of the presence of the F15.