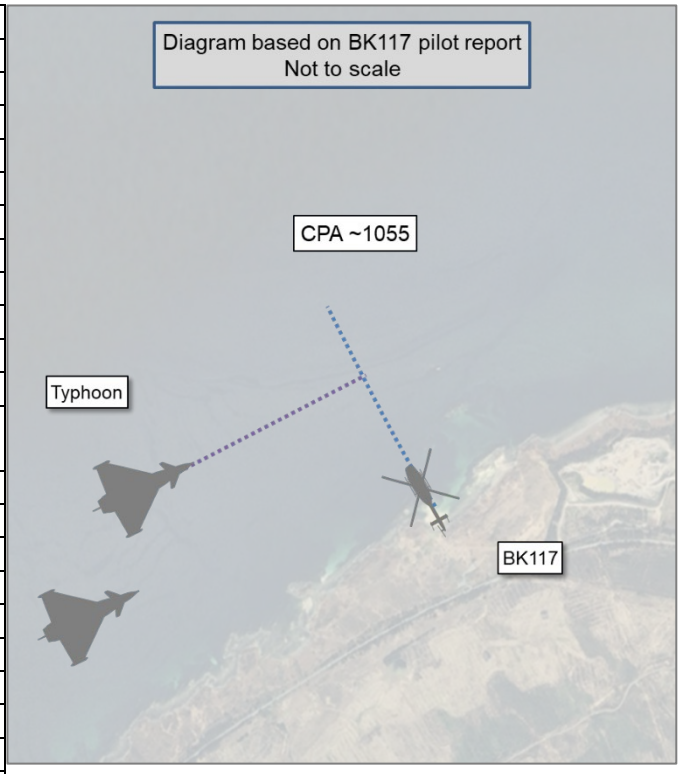
AIRPROX REPORT No 2024037

Date: 20 Mar 2024 Time: ~1055Z Position: 5716N 00548W Location: Kyleakin

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	BK117	Typhoon
Operator	Civ Comm	HQ Air (Ops)
Airspace	Scottish FIR	Scottish FIR
Class	G	G
Rules	VFR	VFR
Service	None	Listening Out
Provider	N/A	Low Level Com'n
Altitude/FL	NK	NK
Transponder	A, C, S+	A, C, S+
Reported		
Colours	White, blue, red	Grey
Lighting	Nav, anti-col, strobe, landing	
Conditions	VMC	NR
Visibility	>10km	>10km
Altitude/FL	700ft	NR
Altimeter	QNH (1009hPa)	NR
Heading	020°	NR
Speed	100kt	NR
ACAS/TAS	TCAS II	Not fitted
Alert	RA	N/A
Separation at CPA		
Reported	0ft V/500-800m H	Not seen
Recorded	NK	



THE BK117 PILOT reports operating from Kyle of Lochalsh Base conducting Under-slung Load (USL) operations in the MoD British Underwater Test & Evaluation Centre (BUTEC) Range Danger Area, which was 'activated and NOTAM'd' [The BK117 pilot was referring to EGD710, located 7NM northwest of BUTEC]. The weather was clear and calm with FEW clouds at 3500ft and visibility greater than 10km. No fast-jets or other local traffic was visible on FlightRadar but the crew noticed a lot of fast-jet activity in Scotland [generally]. They departed with an USL attached at 1041, routing round the back of Kyleakin at 700ft altitude (a standard route described in the Operations Manual) with 2 task specialists on board for training/supervision. The Task Specialist trainer called 'Visual with fast-moving traffic in our 7 o'clock same level' when just coasted out at Broadford. The traffic stayed in the 7 o'clock position but rapidly coming closer. The pilot swapped middle MFD from camera to NAV to get TCAS information and the rapidly approaching traffic displayed, quickly going from Blue (Advisory) to Amber (Caution) to Red (Warning). The pilot decided to take avoiding [action] before letting the aircraft take avoiding action so the [USL] would not destabilize the flight or become unstable due to abrupt manoeuvring. They returned to base immediately after the avoiding action. The fast-jets were tracked visually by the Task Specialist routing towards Plockton and Loch Carron. The jets did not show up on FlightRadar before or after the event. Estimated distance from the jets was less than 800m at the same level and their avoiding action increased the separation. The BK117 pilot noted that in future, the route to and from EGD710 will be NOTAM'd as well.

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

THE TYPHOON PILOT reports being informed that an Airprox had been reported between a pair of Typhoons and a single [BK117] and that it was likely that [they were leading] the pair of Typhoons. For background, on the day in question [Typhoon formation] was originally planned to operate in the D809 complex, however, after met brief the sortie profile was modified to operate on the west coast prior to a

low level navigation exercise to recover to RAF Lossiemouth. During the planning it was identified, via CADS, that a potential conflict existed as [another Typhoon] pair had also decided to operate on the west coast. The respective duty pilots devised a deconfliction plan which was briefed to the crews and necessitated a minor amendment to their plan. No other CADS conflicts were identified by the duty pilot or the aircrews. During the brief [it was emphasised] that several small helicopter landing sites existed on both the very east of Skye and across the water on mainland Scotland, and therefore this would be an area to focus on good lookout. Airborne, [neither Typhoon pilot] saw the [BK117] that submitted the Airprox. [Post-flight radar analysis showed that] at time 1046:56 and position 57 12.326N 005 52.835W a contact appeared on [lead Typhoon's radar], approximately 1NM [range] and 40° to the right that moved rapidly to the right and off [screen]. The fleeting amount of time that the contact appeared meant that the pilot did not notice this contact in the air. It should be noted that, although the time this contact appeared on [screen] is the same as the reported Airprox, the location differed by several miles. Because the cursor was never placed on the contact there was no read-out line, and so it was not possible to confirm whether this was the reporting aircraft. Low Level VHF common was utilised throughout the sortie, a position report was made entering low level, to the west of Cullin routing south, another one made at the south of the ridge where they had turned to the east, and finally one made that they were routing toward the Skye bridge and then toward the Kyle of Lochalsh. With the exception of one other Typhoon operating in the vicinity of Fort William, no other aircraft were heard transmitting on Low Level VHF Common.

Factual Background

The weather at Inverness and Benbecula was recorded as follows:

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METAR EGPE 201050Z VRB01KT 9999 FEW015 SCT033 09/03 Q1020=
METAR EGPL 201050Z VRB01KT 9999 FEW022 08/02 Q1020=
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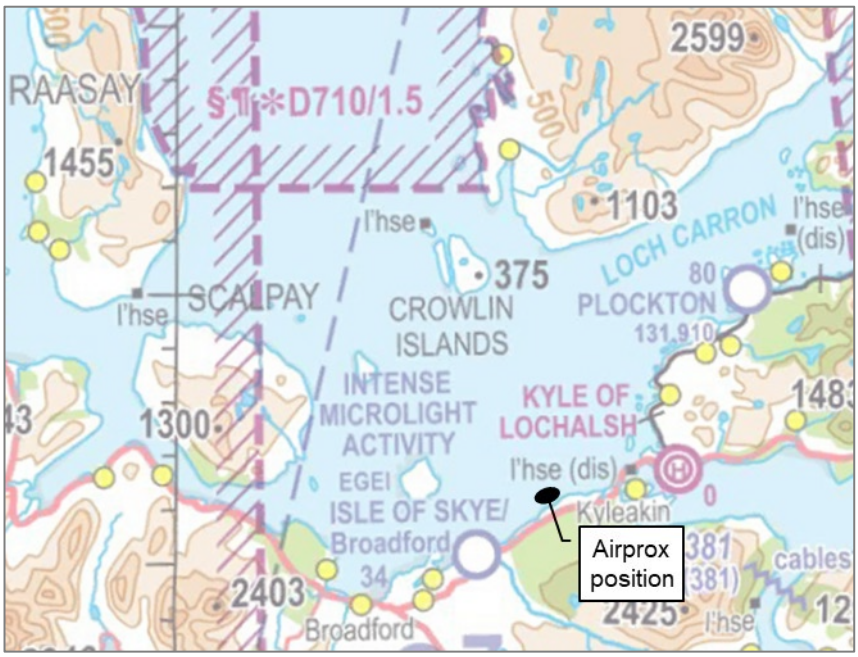
Analysis and Investigation

UKAB Secretariat

The BK117 and Typhoon 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] If the incident geometry is considered as converging then the Typhoon pilots were required to give way to the BK117.[2]



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

Occurrence Investigation

The RAF Occurrence Investigation found the following Cause and Causal Factors:

Cause: The crews were unaware of the proximity of the other aircraft.

Causal Factors:

1. [Helicopter] activity not accurately annotated on deconfliction planning tools.
2. Performance of VHF radio used to monitor LL common.
3. Lack of TCAS system on Typhoon Aircraft.

Comments

HQ Air Command

During planning, the Typhoon pilots had noted and discussed the potential for increased helicopter activity in certain areas. The pilots checked the pre-flight deconfliction tool and, during flight, made appropriate radio calls on VHF LL Common. Nothing was seen at the time of the Airprox. With engagement with the helicopter operator, there is opportunity to discuss potential de-confliction solutions, for example through LL Common. Following this incident the helicopter operator has been invited to the Lossiemouth Regional Airspace Users Working Group.

Summary

An Airprox was reported when a BK117 and a Typhoon flew into proximity near Kyleakin at about 1055Z on Wednesday 20th March 2024. Both pilots were operating under VFR in VMC, neither in receipt of a FIS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings 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.

Members agreed that the austerity of the operating location mean that available mitigations to mid-air collision were fewer and that careful consideration had to be given to all available sources. In this case, the Low Level Common Frequency had been available and may have increased situational awareness but had not been used by the BK117 pilot (**CF1**). Additionally, CADS had not been available to the BK117 pilot (**CF2**) but would likely have increased situational awareness if it had been utilised. The Typhoon lead radar may have gained contact on the BK117 but it had been fleeting in nature and not noticed by the pilot. Consequently, the Typhoon pair had not had any situational awareness on the BK117 and the BK117 pilot had had only late situational awareness on the Typhoons (**CF3**) due to their TCAS alert (**CF4**). In the event, the Typhoon pilots did not see the BK117 (**CF5**) and, although estimated separation at CPA was 500-800m, the BK117 pilot had been concerned by the proximity of the Typhoons due to the helicopter's limited manoeuvrability with an USL (**CF6**). Ultimately, risk of collision had been averted by the BK117 pilot, Risk C. The Board also noted that although EGD710 had been notified as active, the BK117 routing to and from the range had not. Members were heartened to be briefed that the BK117 operating company intended to NOTAM such routeing in future, that the BK117 operating company had been invited to future Lossiemouth Regional Airspace Users Working Group (RAUWG) meetings and that the BK117 operating company had been invited to join CADS.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024037			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Flight Elements			
	• Tactical Planning and Execution			
1	Human Factors	• Accuracy of Communication	Events involving flight crew using inaccurate communication - wrong or incomplete information provided	Ineffective communication of intentions
2	Organisational	• Flight Planning Information Sources	An event involving incorrect flight planning sources during the preparation for a flight.	
	• Situational Awareness of the Conflicting Aircraft and Action			
3	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
	• Electronic Warning System Operation and Compliance			
4	Contextual	• ACAS/TCAS RA	An event involving a genuine airborne collision avoidance system/traffic alert and collision avoidance system resolution advisory warning triggered	
	• See and Avoid			
5	Human Factors	• Monitoring of Other Aircraft	Events involving flight crew not fully monitoring another aircraft	Non-sighting or effectively a non-sighting by one or both pilots
6	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: C.

Safety Barrier Assessment[3]

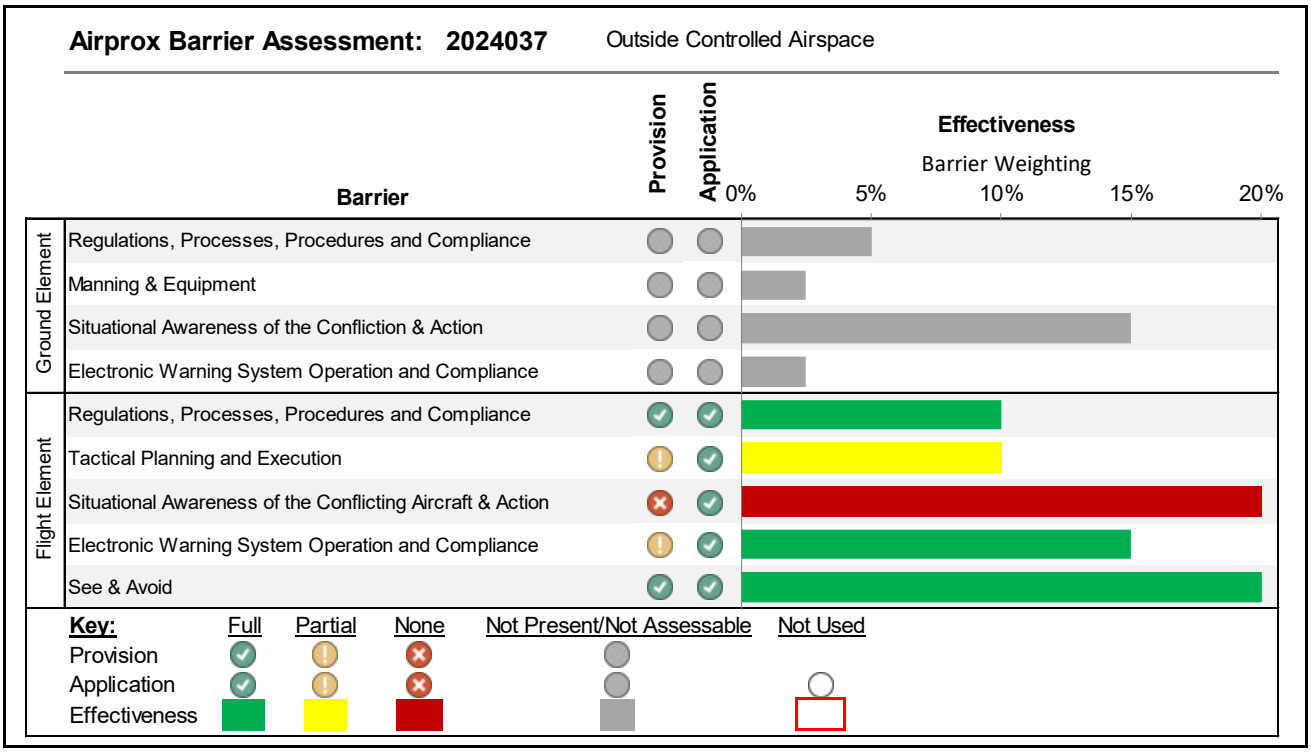
In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the BK117 pilot did not have access to CADS and did not use the LL Common frequency and the activity near BUTEC was not available to the Typhoon pilots.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the Typhoon pilots had no situational awareness on the BK117.

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


Airprox Barrier Assessment: 2024037
Outside Controlled Airspace
Barrier
Provision
Application
Effectiveness
Barrier Weighting
0%
5%
10%
15%
20%
Ground Element
Regulations, Processes, Procedures and Compliance
Manning & Equipment
Situational Awareness of the Confliction & Action
Electronic Warning System Operation and Compliance
Flight Element
Regulations, Processes, Procedures and Compliance
Tactical Planning and Execution
Situational Awareness of the Conflicting Aircraft & Action
Electronic Warning System Operation and Compliance
See & Avoid
Key:
Full
Partial
None
Not Present/Not Assessable
Not Used
Provision
Application
Effectiveness