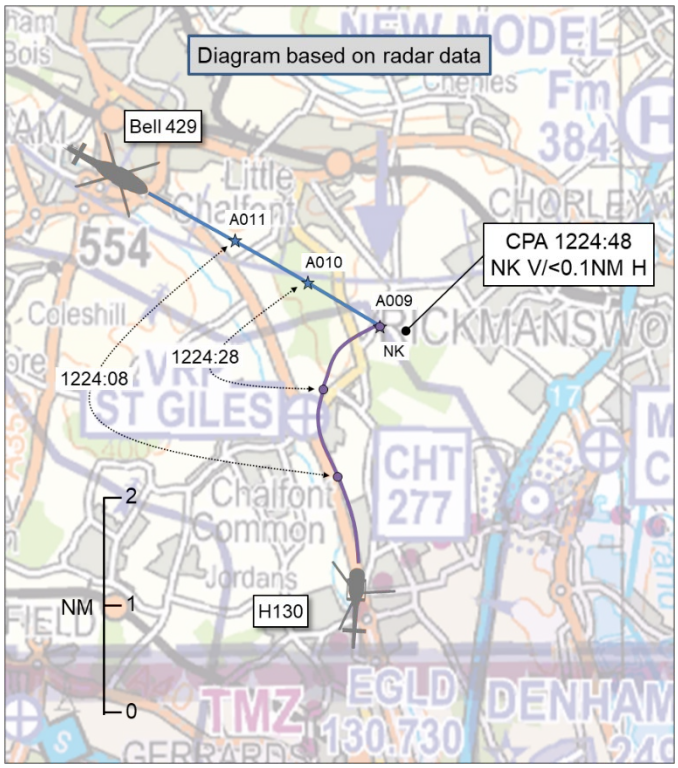
AIRPROX REPORT No 2024039

Date: 25 Mar 2024 Time: 1225Z Position: 5139N 00033W Location: 1NM NE St. Giles VRP

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Bell 429	H130
Operator	Civ Comm	Civ Helo
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Establishing contact	None
Provider	Denham Radio	N/A
Altitude/FL	900ft	NK
Transponder	A, C, S	None[1]
Reported		
Colours	Blue, white	Blue
Lighting	Position, landing, HISL	Nav, anti-col, beacon
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1100ft	1100ft
Altimeter	QNH (1000hPa)	QNH
Heading	125°	080°
Speed	125kt	110kt
ACAS/TAS	TCAS I, SkyEcho	Not fitted
Alert	None	N/A
Separation at CPA		
Reported	20ft V/0m H	*"just below, very close"*
Recorded	NK V/<0.1NM H	



THE BELL 429 PILOT reports that they were transiting to Denham for a possible role-kit fault investigation. When approaching Maple Cross VRP, joining Denham right-base for RW24, an aircraft was seen in the 3 o'clock position extremely close to their aircraft. Almost immediately, the other aircraft passed directly through their overhead and out to the 9 o'clock position. The Observer, seated in the rear-left seat, saw the aircraft as it became visible in the 9 o'clock. No TCAS or [EC device] information on the other aircraft was displayed before or afterwards.

[The pilot of the Bell 429 mentioned that], when identifying Maple Cross VRP for the airfield join, they noticed they hadn't changed their squawk from 0013 (Luton Frequency Monitoring Code).

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

THE H130 PILOT reports that [this was] a very serious and scary mid-air near-miss incident that occurred shortly after departure. They had just left Denham's frequency without yet making contact with another unit. They were flying on an approximate heading of 080° and at an altitude of about 1100ft AMSL, positioned roughly 2NM north-east of St. Giles VRP. A helicopter, [Bell 429 callsign], crossed their flightpath from left-to-right at a 90° angle, passing just below them. This event was totally unforeseen as the helicopter emerged from a blind spot, not visible until the moment it was directly beneath them, before continuing its path to the right and disappearing from view.

The event left [the H130 crew] shocked for a while. [The pilot of the H130 opined that] one would expect that the pilot, or pilots, of the other helicopter would have used their eyes to look outside. Moreover, had they looked outside they would possibly have given [the H130] the right-of-way and passed behind

[1] The pilot of the H130 reported that they had forgotten to switch on their transponder.

as it would have been on their right. The lighting, appearance and departure of the helicopter prevented [the pilot of the H130] from identifying its type or model altogether, although it was observed that at least the top was white in colour.

This close encounter left [the H130 crew] shocked and momentarily mesmerised. It was only [later] that they contacted London Information, and only then, belatedly, squawked Mode C. [The pilot of the H130 commented that] they should have had the transponder on before taking-off but had forgotten that day. They consider themselves at partial fault in that sense.

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

THE DENHAM AGO reports that they were not involved as it was outside the 'FRZ' [sic] and not on their frequency.

Factual Background

The weather at Northolt was recorded as follows:

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METAR EGWU 251220Z 17010KT 9999 SCT031 BKN042 11/05 Q0999 NOSIG RMK BLU BLU
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Analysis and Investigation

NATS Luton ATC Investigator

The radar replay and RT data for this event was reviewed. [The pilot of the Bell 429] had selected the Luton Radar listening squawk, however, had no interaction with Luton Approach at any time. The aircraft believed to be [the H130] appeared as a primary-only contact from [their take-off airfield], and the pilot did not contact Heathrow Radar SVFR, or any other TC sector, at any point before, during or after the event.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken. The Bell 429 could be positively identified from Mode S data. The H130 was identified by reference to the pilot's narrative report. In addition, the pilot of the Bell 429 kindly supplied GPS track data for their flight. The diagram was constructed and the separation at CPA determined from the separate sources.

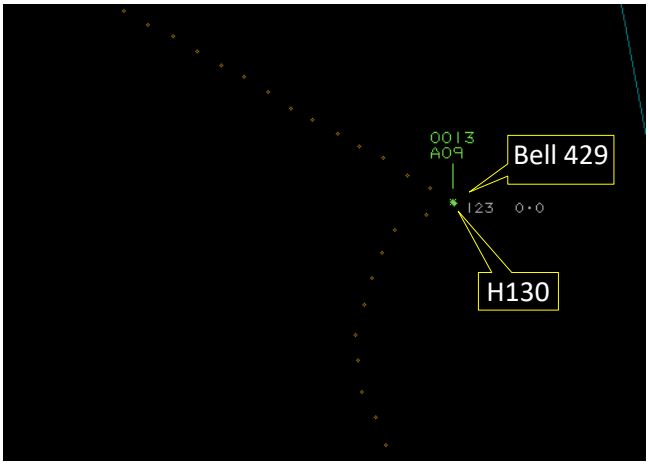

Figure 1 – CPA at 1224:48

The Bell 429 and H130 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 Bell 429 pilot was required to give way to the H130.[3] When an

[2] (UK) SERA.3205 Proximity.
[3] (UK) SERA.3210 Right-of-way (c)(2) Converging.

aircraft carries a serviceable SSR transponder, the pilot shall operate the transponder at all times during flight, regardless of whether the aircraft is within or outside airspace where SSR is used for ATS purposes.[4]

Summary

An Airprox was reported when a Bell 429 and an H130 flew into proximity 1NM northeast of St. Giles VRP at 1225Z on Monday 25th March 2024. Both pilots were operating under VFR in VMC, the Bell 429 pilot listening-out on the Denham Radio frequency and the H130 pilot not in receipt of an ATS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, GPS data 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 Bell 429. Members noted that they had selected the Frequency Monitoring Code for Luton but had not been in receipt of a service. One member suggested that 'listening-out' on the Luton frequency had not been the most prudent source of information from which to gather situational awareness about the area in which they had been operating. Members' thoughts turned to the issue of selection of the most appropriate service and the timing of that selection. One member referred to the entry for Denham in a popular flight guide and recited the advice provided for pilots that first contact should be made with Denham Radio at 10NM or 5min away. Members understood that the pilot of the Bell 429 had established, or had been in the process of establishing, contact with the Denham AGO, but had not heard any transmissions made by the pilot of the H130.

Members agreed that the EC equipment fitted to the Bell 429 would not have been expected to have detected the presence of the H130 given that the transponder fitted to the H130 had been inadvertently switched off (**CF4**). Consequently, members agreed that the pilot of the Bell 429 had not had situational awareness of the H130 in the area (**CF3**) until it had been visually acquired in close proximity on their right-hand side. Noting that there had not been any time for the pilot of the Bell 429 to have taken avoiding action, it was further agreed that to not have visually acquired the H130 until the moment of CPA effectively constituted a non-sighting (**CF5**).

Members next considered the actions of the pilot of the H130. It was noted from their narrative report that they had identified that they had forgotten to switch on their transponder. Acknowledging the honest reporting of the encounter, it was nonetheless agreed that they had not conformed with the regulation to have operated their transponder throughout their flight (**CF1**). Further, members agreed that the pilot of the H130 had not adequately attended to the planning and execution of their flight (**CF2**) and were keen to point out the importance of adherence to the preflight checklist.

It was noted that the pilot of the H130 had not been in receipt of a service at the moment of CPA and members pondered the most prudent time to have selected an en-route frequency after departure. Members considered that it would have been most beneficial for a pilot to have requested a service from an appropriate ATSU as soon as reasonably practicable after having left the Denham ATZ (having first garnered any available information on the traffic situation in the local area beforehand). Members noted that the H130 pilot had left the Denham Radio frequency shortly before CPA and surmised that it had, perhaps, been a case of unfortunate timing that the pilot of the H130 had not been in receipt of a service at that moment. Consequently, it was agreed that the pilot of the H130 had not had situational awareness of the presence of the Bell 429 (**CF3**).

Members noted the opinion proffered by the pilot of the H130 (in respect of the visual acquisition of nearby traffic) and wished to emphasise that it had been incumbent upon both pilots to have maintained a thorough and effective lookout. Indeed, both pilots had shared an equal responsibility for collision

[4] (UK) SERA.13001 Operation of an SSR transponder.

avoidance regardless of the geometry of the encounter. Members agreed that the pilot of the H130 had, effectively, not sighted the Bell 429 (**CF5**) and had not had any time to have taken avoiding action before it had passed beneath them.

Concluding the discussion, members summarised their thoughts. Given that the transponder fitted to the H130 had not been switched on (and had therefore not been detected by the EC equipment fitted to the Bell 429) and that there had not been a common ATSU frequency in use between the pilots, it was agreed that neither pilot had been aware of the presence of the other aircraft. It was further agreed that neither pilot had sighted the other aircraft in time to have taken any avoiding action. Although the exact vertical separation between the aircraft could not be verified, members noted that both pilots had provided an estimate that indicated that there had been very little separation indeed. Members were in agreement that there had been a very serious risk of collision (**CF6**) and that the encounter had only stopped short of an actual collision because providence had played a major part in events. As such, the Board assigned Risk Category A to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024039			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Flight Elements			
	• Regulations, Processes, Procedures and Compliance			
1	Human Factors	• Use of policy/Procedures	Events involving the use of the relevant policy or procedures by flight crew	Regulations and/or procedures not complied with
	• Tactical Planning and Execution			
2	Human Factors	• Transponder Selection and Usage	An event involving the selection and usage of transponders	
	• 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	Technical	• ACAS/TCAS System Failure	An event involving the system which provides information to determine aircraft position and is primarily independent of ground installations	Incompatible CWS equipment
	• 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
	• Outcome Events			
6	Contextual	• Near Airborne Collision with Aircraft	An event involving a near collision by an aircraft with an aircraft, balloon, dirigible or other piloted air vehicles	

Degree of Risk: A.

Safety Barrier Assessment[5]

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

Flight Elements:

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

Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because the pilot of the H130 had not complied with the regulation to have operated their transponder.

Tactical Planning and Execution was assessed as **partially effective** because the pilot of the H130 had not operated their transponder.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither pilot had situational awareness of the other aircraft.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the EC equipment fitted to the Bell 429 had been defeated by the H130 pilot's transponder selection.

See and Avoid were assessed as **ineffective** because neither pilot had visually acquired the other aircraft until the moment of CPA.