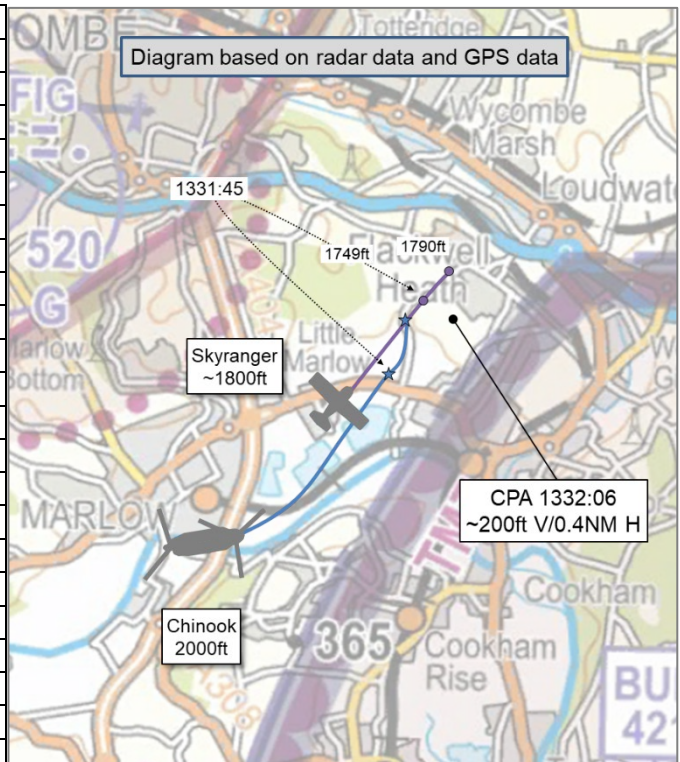


**AIRPROX REPORT No 2021081**

Date: 14 Jun 2021 Time: 1332Z Position: 5135N 00043W Location: Marlow

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	Chinook	Skyranger
Operator	HQ JHC	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	None
Provider	Heathrow SVFR	
Altitude/FL	2000ft	1790ft
Transponder	A, C, S	Not fitted
<b>Reported</b>		
Colours	Green	White
Lighting	Nav, HISLs	None
Conditions	VMC	VMC
Visibility	>10km	5-10km
Altitude/FL	2000ft	1800ft
Altimeter	QNH (1020hPa)	QNH
Heading	270°	030°
Speed	120kt	75kt
ACAS/TAS	TAS	PilotAware
Alert	None	None
<b>Separation</b>		
Reported	2-500ft V/0m H	Not Seen
Recorded	~200ft V/0.4NM H	



**THE CHINOOK PILOT** reports that the aircraft was in the vicinity of Marlow, speaking to Heathrow Radar under Basic Service after being handed over by RAF Benson. They had instructed the aircraft to hold clear of controlled airspace, awaiting coordination with Heathrow Tower in order to clear the aircraft to cross the airfield. The aircraft was holding NE of Marlow between Wycombe Air Park and London CTZ. The aircraft was in a level 20° AOB turn to the left, having just been cleared to enter controlled airspace. The angle of bank was increased to 30° whilst passing through north. The No2 Crewman became visual with a light aircraft on the left approximately 0.5NM and 200ft below heading north. The track of the fixed wing aircraft was likely to have been directly underneath their aircraft and was previously unsighted to the crew. They described the aircraft as a small white fixed wing, possibly a Cessna, but were unable to see the registration number. No other member of the crew saw the aircraft. TAS was on and selected to 7NM, but no contact was displayed. Due to the high workload of the controller, the Airprox was reported after the Heathrow crossing had been completed.

The pilot assessed the risk of collision as ‘Medium’.

**THE SKYRANGER PILOT** reports that they were in the vicinity of Marlow at the time of the reported Airprox, but were completely unaware that the Airprox had occurred and did not see the Chinook.

**THE HEATHROW SVFR CONTROLLER** reports that the Chinook was holding at Marlow and receiving a Basic Service. The pilot reported that another aircraft had passed below. The incident took place at 1330, although it was not reported until 1345.

**Factual Background**

The weather at Heathrow was recorded as follows:

METAR COR EGLL 141320Z AUTO 28008KT 240V320 9999 NCD 28/13 Q1019 NOSIG=

## Analysis and Investigation

### UKAB Secretariat

The Chinook and Skyranger pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.<sup>1</sup>

### Occurrence Investigation

### NATS Investigation

The Chinook, displaying Mode-A 7033, was on a VFR flight to cross the London CTR and transit the Heathrow overhead north-to-south. The pilot reported onto the Heathrow SVFR (LL SVFR) frequency at 13:29:34 (all times UTC) approaching Marlow, see Figure 1. An unknown primary return was tracking North East at a range of 3.1NM from [Chinook C/S]. Both aircraft were in Class G airspace below the London TMA, where the base of controlled airspace was 2500ft.

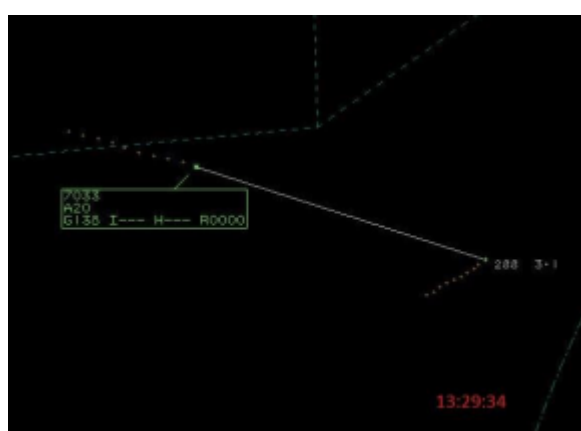


Figure 1: Chinook reported on LL SVFR frequency

The LL SVFR controller responded, instructing the pilot to “squawk ident, QNH one-zero-one-nine, Basic Service, report your level?” The pilot readback Basic Service, the QNH and reporting their altitude as 2000ft. The LL SVFR controller continued to transmit to unrelated aircraft. At 13:30:59 the pilot reported “holding Marlow,” see Figure 2. The LL SVFR controller acknowledged.

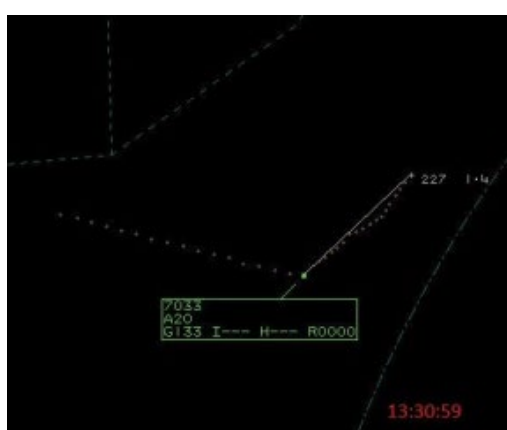


Figure 2: Chinook reported holding at Marlow

At 13:31:13 the LL SVFR controller then instructed the pilot to remain outside Controlled Airspace and that they were “just calling Heathrow Tower to approve the crossing.” The pilot acknowledged this and the helicopter proceeded to initiate a left turn into proximity with the primary radar return.

<sup>1</sup> (UK) SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.

Closest Point of Approach occurred at 13:31:58 and was recorded on Multi-Track Radar as 0.4NM and 200ft (vertical element as later reported by the pilot of [Chinook C/S]), see Figure 3.



Figure 3 CPA between Chinook and unknown return  
Note: No reference to any traffic was made by the pilot at this point.

The LL SVFR controller was on a telephone call with Heathrow Tower obtaining a clearance for [Chinook C/S] and did not observe the primary return. CAP774 2.1 details that a 'Basic Service relies on the pilot avoiding other traffic, unaided by controllers/FISOs. It is essential that a pilot receiving this ATS remains alert to the fact that, unlike a Traffic Service and a Deconfliction Service, the provider of a Basic Service is not required to monitor the flight.'

At 13:32:08 the LL SVFR controller issued a clearance to [Chinook C/S] to enter the London CTR via the heli-routes. As the Chinook entered controlled airspace a Radar Control Service was issued and the helicopter was subsequently transferred to Heathrow Tower. The pilot checked back in with the LL SVFR controller at 13:40:55 when south of Heathrow and was issued onward clearance. The pilot reported at 13:43:02 they would be filing an Airprox on their return to Odiham against "*an aircraft that passed approximately two hundred feet below in the vicinity of Marlow.*" In further discussion, the pilot reported that this had occurred just prior to entering the London CTR.

## Conclusion

The Airprox occurred in Class G airspace when [Chinook C/S] came into proximity with an unknown aircraft in the vicinity of Marlow. The pilot did not report any traffic at the time of the event and no avoiding action by the pilot was observed from the radar replay. The LL SVFR controller was providing the pilot with a Basic Service outside controlled airspace. Closest Point of Approach occurred at 13:31:58 and was recorded on Multi-Track Radar as 0.4NM and 200ft (vertical element as reported by the pilot [Chinook C/S]). As the second aircraft displayed only as a primary radar return it was not possible to confirm the vertical distance from radar replay.

## Summary

An Airprox was reported when a Chinook and a Skyrainger flew into proximity at Marlow at 1332Z on Monday 14<sup>th</sup> September 2021. Both pilots were operating under VFR in VMC, the Chinook pilot in receipt of a Basic Service from Heathrow SVFR and the Skyrainger pilot was 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, 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.

The Board first discussed the actions of the Chinook pilot. They were intending to route along the heli-route and had called the S VFR controller but been told to remain outside CAS until a clearance was received. Some members opined that the area over Marlow was a pinch point, hemmed in by CAS above and to the east and the Wycombe and White Waltham ATZs, and to hold there at that altitude was inviting trouble. They were told by helicopter members familiar with the heli-routes that the Chinook needed to be at 2000ft to enter CAS at Cookham, but they advised that they would always approach from that direction with caution, calling ATC as early as possible and slowing down as much as possible rather than orbiting close to CAS. They also noted that where possible they would opt to use the H9 heli-route, entering CAS to the northwest of Denham because it was less congested outside CAS in that area and it was rare to get a hold on that particular route. On balance members thought that although the Chinook pilot could not have known that they were going to be asked to remain outside controlled airspace, they could have kept a plan B in mind that would have kept them away from orbiting at the edge of CAS (**CF2**). ATC was providing a Basic Service and so the pilot could not expect to get Traffic Information and some members wondered whether they should have ask for an upgrade to a Traffic Service, but without knowing how busy the controller was, it was impossible to say whether this would have been provided or not. However, the TAS on the Chinook could not detect the non-transponding Skyranger (**CF4**) and without any information from ATC, the Chinook pilot had no knowledge that the Skyranger was in the vicinity (**CF3**). The Chinook pilot did not see the Skyranger themselves, but had the report from the crewman who correctly assessed it as 0.5NM away and about 200ft below, and the pilot incorrectly deduced that they had overflown the Skyranger without seeing it (**CF5**). The Board thought that the crewman should be praised for reporting it to the pilot and teamwork demonstrated by the crew was commendable, even if, on this occasion, the situation was not quite what it seemed.

Turning to the Skyranger pilot, they were also transiting through the busy airspace without an ATS and although members recognised that it would not have made any difference to this particular Airprox, they recommended that pilots get an ATS whenever possible if only to gain situational awareness of other transiting traffic. The Skyranger was equipped with PilotAware but the pilot reported that it had not alerted, given that the pilot was not aware of the Chinook at the time members were unsure whether the pilot just didn't remember it alerting, or whether some form of aerial blanking had prevented it from alerting because the Chinook was turning behind the Skyranger. Regardless, the Skyranger pilot had no situational awareness that the Chinook was there (**CF3**).

Finally, in looking at the actions of the S VFR controller, members discussed whether they could have held the Chinook within CAS, and therefore away from the congested airspace. Those with controlling experience of the area noted that without fully knowing the controlling picture at the time, it was not possible to say whether the controller had that course of action available to them. They noted that the controller needed to telephone Heathrow in order to get clearance for the Chinook to continue along the route and that any traffic inbound to Heathrow or Northolt would be a significant factor and so generally controllers would opt to keep aircraft outside CAS until they could be sure they would be able to clear aircraft in safely. Furthermore, members were told that a number of noise complaints in the Cookham area had led to the preference to hold aircraft elsewhere. However, members were told that in order to avoid holding, pilots were advised to give as much notice as possible, calling up on a second box, or asking the previous controller to pre-note were both options to assist the controller in setting up the clearance and avoid any delays. In this case, the controller was providing the Chinook with a Basic Service and so was not required to monitor the aircraft when outside CAS (**CF1**).

When determining the risk members considered the reports from both pilots, the NATS investigation and the radar replay. Some members opined that whilst there had been no risk of collision because the Chinook passed 0.4NM behind the Skyranger, the fact that neither pilot had seen the other aircraft and it was fortuitous that the Chinook had turned behind the Skyranger meant that safety had been degraded. Others countered that the Chinook pilot did not see the Skyranger because they were so far away, and that this was a benign event and could be classed as normal operations in Class G airspace; and it was because the Chinook pilot thought they had overflown the Skyranger that the Airprox had

been reported. After a brief debate the latter view prevailed and members assigned Risk Category E. However, members were at pains to point out that the reporting of the Airprox was the correct course of action, that the incident had raised a number of key learning points, and that they would not wish to discourage such reporting in the future.

## **PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**

### Contributory Factors:

	2021081			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
<b>Ground Elements</b>				
• Situational Awareness and Action				
1	Contextual	• ANS Flight Information Provision	Provision of ANS flight information	The ATCO/FISO was not required to monitor the flight under a Basic Service
<b>Flight Elements</b>				
x • Tactical Planning and Execution				
2	Human Factors	• Insufficient Decision/Plan	Events involving flight crew not making a sufficiently detailed decision or plan to meet the needs of the situation	Inadequate plan adaption
• 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 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
• Any other events				
5		• Any other event	Any other event not listed elsewhere within the event types list.	Pilot concerned by report from crewman

Degree of Risk: E.

### Safety Barrier Assessment<sup>2</sup>

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 Chinook crew chose to orbit in a busy piece of airspace at an altitude likely to be used by GA aircraft.

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

**Electronic Warning System Operation and Compliance** were assessed as **ineffective** because the TAS in the Chinook could not detect the non-transponding Skyraanger.

<sup>2</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

<b>Airprox Barrier Assessment: 2021081</b>		Outside Controlled Airspace							
<b>Barrier</b>		<b>Provision</b>	<b>Application</b>	<b>Effectiveness</b>					
				<b>Barrier Weighting</b>					
				0%	5%	10%	15%	20%	
Ground Element	Regulations, Processes, Procedures and Compliance	✓	✓						
	Manning & Equipment	✓	✓						
	Situational Awareness of the Conflicion & 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	○	○						
<b>Key:</b>		<u>Full</u>	<u>Partial</u>	<u>None</u>	<u>Not Present/Not Assessable</u>	<u>Not Used</u>			
Provision	✓	⚠	✗	○					
Application	✓	⚠	✗	○					
Effectiveness									