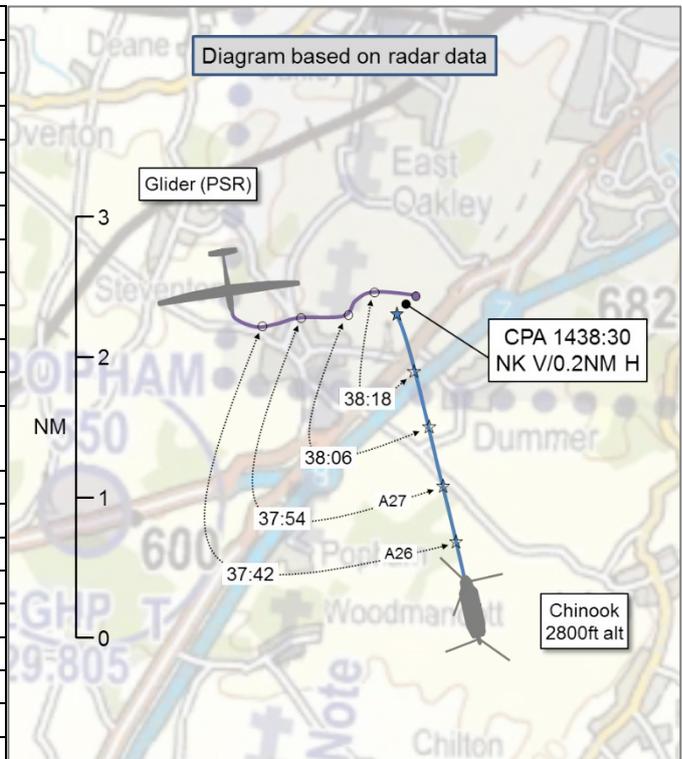


**AIRPROX REPORT No 2019242**

Date: 18 Jul 2019 Time: 1439Z Position: 5113N 00110W Location: ivo Popham

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	Chinook	Glider
Operator	HQ JHC	Unknown
Airspace	London FIR	London FIR
Class	G	G
Rules	IFR	
Service	Traffic	
Provider	Odiham	
Altitude/FL	2800ft	
Transponder	A, C, S	
<b>Reported</b>		Not reported
Colours	Green	
Lighting	HISLs, position, landing	
Conditions	VMC	
Visibility	20km	
Altitude/FL	NK	
Altimeter	QNH (1011hPa)	
Heading	355°	
Speed	NK	
ACAS/TAS	TAS	
Alert	None	
<b>Separation</b>		
Reported	NK V/<1NM H	
Recorded		NK



**THE CHINOOK PILOT** reports routing towards the Odiham IAF for the Odiham RW27 TAC approach, when ATC informed them that there was traffic in the 11 o'clock with no height information. The crew attempted to look for the traffic and continued towards the IAF. Approximately 2-3nm south of the IAF, whilst climbing to altitude 3000ft, the captain informed the crew of a glider in the 12 o'clock. Less than 1nm range, approximately 2-300ft above. The captain immediately levelled at 2800ft and turned left. The glider passed above and down the right-hand side. He opined that because the glider was not fitted with an SSR transponder, no TAS indications were received.

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

**THE GLIDER** could not be traced.

**THE ODIHAM APPROACH CONTROLLER** reports that the Chinook pilot called up requesting a Traffic Service northwest of Solent controlled airspace. He was positively identified, given a Traffic Service, and passed the weather and airfield details, which advised that the TACAN was unserviceable. The pilot advised he was VMC and requested the COP TAC procedure despite the TACAN unserviceability. The controller had a short discussion with the Supervisor and agreed this was not a problem but asked what recovery the Chinook pilot would take should he go IMC; he replied with 'PAR'. The Chinook self-positioned to the IAF. At this time some primary-only contacts were showing in the 2nm 'avoid' around Lasham. The Chinook established in the COP TAC hold; a couple of the primary-only contacts had tracked northwest and were called to the Chinook. The controller asked the Supervisor for altitude details on the potential conflictors from FLARM. The Supervisor advised that one, believed to be in the Chinook's immediate 12 o'clock, was indicating altitude 3400ft. The Chinook was at 3000ft on the Farnborough QNH and less than 1nm track distance so the controller again called the traffic and asked

the Chinook pilot if he required de-confliction advice. The Chinook pilot replied that he did, so the controller upgraded the service to a Deconfliction Service and gave an avoiding action turn onto 360°.

**THE ODIHAM SUPERVISOR** reports that he was monitoring the traffic situation on console next to the Approach controller. The narrative from the Approach controller was an accurate account of the actions taken. FLARM was used as an aid for situational awareness and it was stated on frequency that the level indicated on the conflicting traffic was from the FLARM equipment.

## Factual Background

The weather at Odiham was recorded as follows:

METAR EGVO 181450Z 28012KT 9999 FEW045 SCT120 21/10 Q1011 NOSIG RMK BLU BLU=

## Analysis and Investigation

### Military ATM

An Airprox occurred on 18 Jul 19 at approximately 1435 UTC, 5nm west of RAF Odiham between a Chinook and an unknown glider. The Chinook was receiving a Traffic Service from Odiham Approach, it is not known if the glider was receiving an Air Traffic Service.

The Chinook was conducting a TACAN approach to RAF Odiham in receipt of a Traffic Service from Odiham Approach. Due to the number of radar returns believed to be gliders, the Odiham Supervisor was monitoring a FLARM website to try and aid situational awareness on non-transponding aircraft. Whilst the Chinook was under its own navigation for the IAF, the pilot noticed a glider in their 12 o'clock, less than 1nm away and 2-300ft above. The Chinook captain reported levelling the aircraft and initiating a left turn to avoid the glider.

Although the glider could not positively be identified from the radar reply, analysis shows a primary radar return which is visible in the minutes leading up to the incident, follows the profile described by the Chinook pilot and matches the R/T transcripts provided by Odiham ATC.

Figure 1 was timed at 1436:12 and corresponds with Odiham Approach passing Traffic Information on the traffic believed to be the incident glider and another Chinook departing Odiham. Separation at this point was 6.6nm.

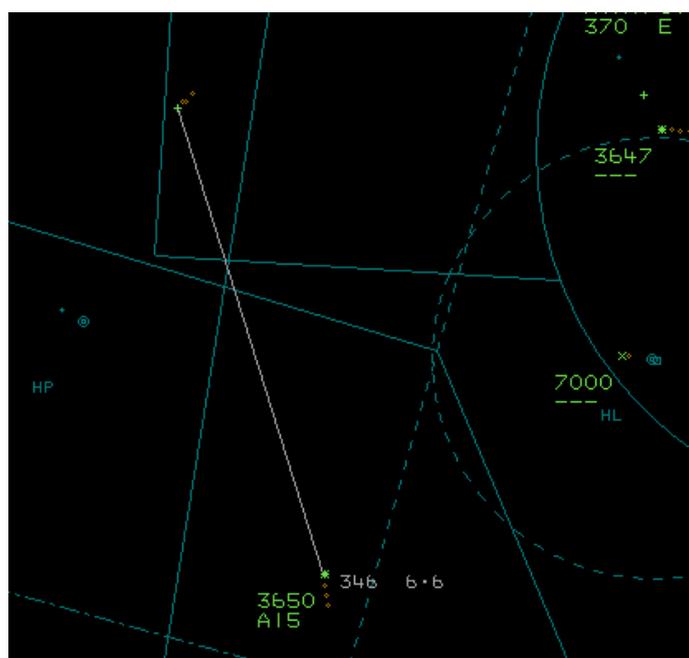


Figure 1

Shortly afterward, the Odiham Approach Controller noticed traffic which they believed was climbing out of Popham and passed this information to the Chinook who reported not being visual with this traffic. By this point, separation between the Chinook and primary contact had decreased to 2.2nm (Figure 2).

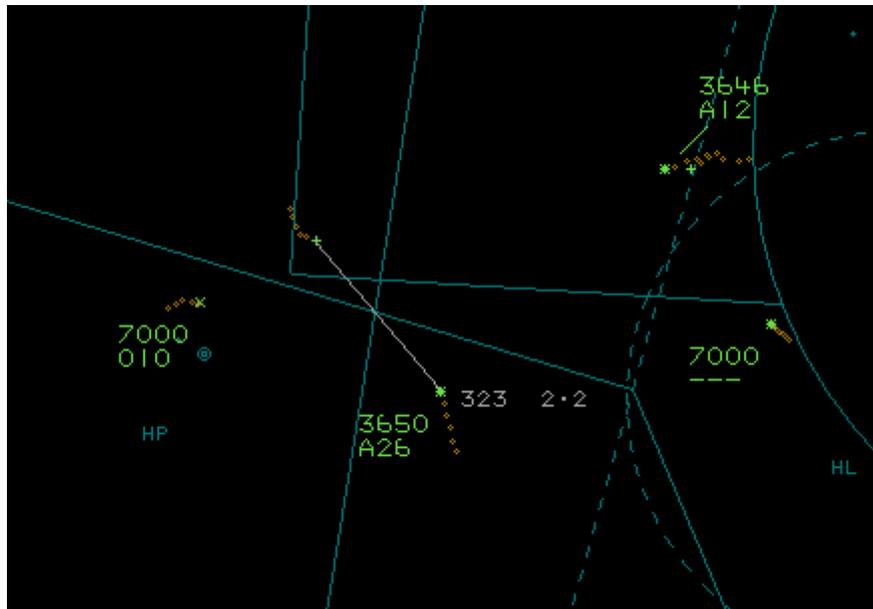


Figure 2

The Odiham Approach Controller passed updated Traffic Information to the Chinook at a range of 1nm (Figure 3). The Chinook pilot reported not being visual.

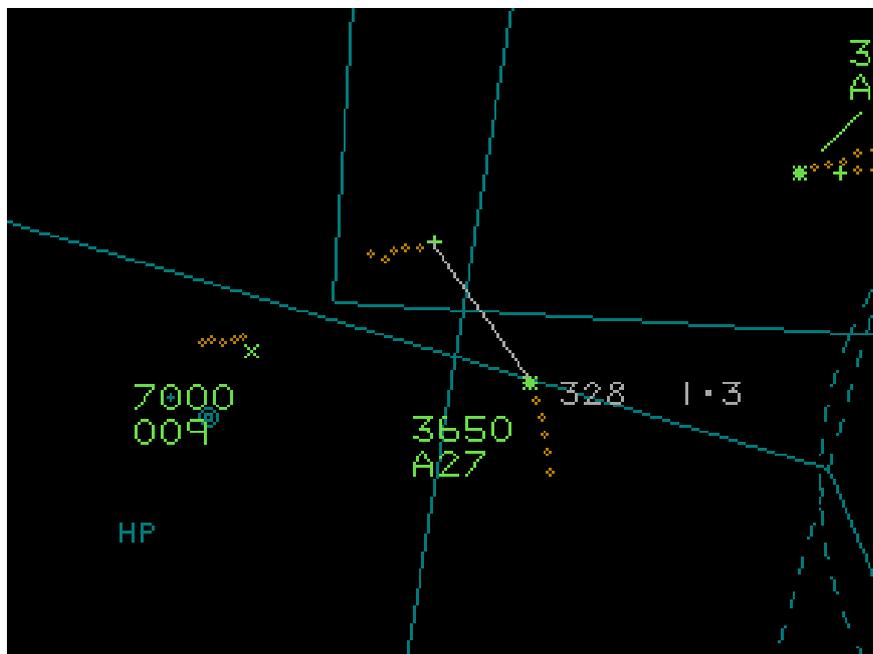


Figure 3

CPA occurred 40sec after this final Traffic Information and was measured at 0.2nm (Figure 4).

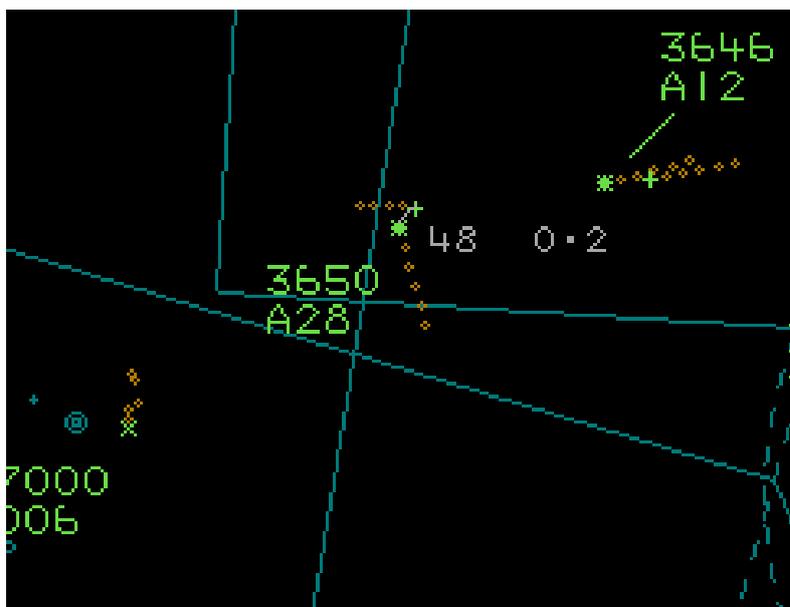


Figure 4 – CPA

Although the Radar Analysis Cell were not able to conclusively identify the unknown glider the radar replay screenshots above mirror the information provided through the R/T transcripts. These show that the Odiham Approach Controller passed Traffic Information to the Chinook on 2 occasions. In addition to this, the Odiham Supervisor was consulting FLARM in order to provide the best possible situational awareness to the Chinook. Accordingly, it is assessed that the controllers involved in this incident discharged their responsibilities appropriately.

### UKAB Secretariat

The Chinook and glider 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>. If the incident geometry is considered as converging then the Chinook pilot was required to give way to the glider<sup>2</sup>.

### Odiham Occurrence Investigation Summary

The area to the west of RAF Odiham is particularly congested with GA and, particularly, gliders during the summer months. In this instance, the altitude of the TACAN IAF coincided with the altitude of one of these gliders. Aircrew have limited SA of glider traffic. ATC-based FLARM and lookout are the only barriers to prevent such events, short of avoiding historically known areas of activity.

The investigation made the following recommendation:

‘Chinook TE3.10 has limited barriers in place to prevent MAC with other air users operating in the geographic area in question without TCAS/TAS and without two-way communication with Odiham ATC. Ultimately, lookout and FLARM are the only credible barriers in place to avoid another re-occurrence of this type. Lookout is degraded in the summer months by the white colouring of gliders, high light levels and lack of contrast with clouds. The FLARM feed held by ATC may have been the only barrier in place that prevented a MAC in this case. As such, it is recommended that FLARM be integrated with the Chinook cockpit, such that lookout can be improved in a manner to that currently employed by TAS equipped aircraft.’

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

<sup>2</sup> SERA.3210 Right-of-way (c)(2) Converging. MAA RA 2307 paragraph 12.

## Comments

### JHC

As alluded to in the RAF Odiham occurrence investigation, there are very limited barriers to prevent MAC with a non-squawking glider [or non-FLARM-equipped Chinook]. With weather conditions as they were, lookout can only go so far and it was fortunate that ATC were able to aid the aircrews' situational awareness with the use of FLARM and good traffic information. Whilst the sighting was late, the captain was able to take timely action to avoid collision.

### BGA

It's good to see appropriate use being made of FLARM-derived information to provide TI. This is a very busy area and encounters in Class G are highly likely.

## Summary

An Airprox was reported when a Chinook and an unknown glider flew into proximity near Popham at 1438Z on Thursday 18<sup>th</sup> July 2019. The Chinook pilot was operating under IFR in VMC in receipt of a Traffic Service from Odiham.

## **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available consisted of a report from the Chinook pilot, 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 first discussed the Odiham controller's report and noted that the change to Deconfliction Service was not contained in the R/T transcript and so they surmised that, at least partially, his report may have included recollections from other activities not associated with the incident. Although the Chinook pilot described receiving Traffic Information on a glider that he subsequently saw, because the controller did not know the glider's altitude from an accredited source, the Traffic Information could not be complete (**CF1**) (ATC use of FLARM-derived information can only be transmitted as generic awareness to pilots because of latency issues).

The Board discussed whether the glider was equipped with FLARM but noted that, even if it had been, neither aircraft was electronically conspicuous to the other (**CF2**) and so see-and-avoid was therefore the only barrier available for collision avoidance. This barrier functioned as intended; the Chinook pilot saw the glider and gave way to it by creating vertical and lateral separation (**CF3**). As a result, members agreed that the event was such that collision risk had been averted in a timely and effective manner.

Some members wondered whether it was possible that routine instrument-training Chinook approaches could perhaps be accomplished with reduced risk in a simulator. A military member advised that such training was conducted in the simulator but, although such activities reduced the risk of collision to the Chinook crew and other aircraft, the availability of simulators was an issue, and there was an associated practical issue of ensuring sufficient controlling currency for ATC personnel (with consequent potential impact on risk for those undertaking the procedure 'live').

Members also noted that although an Airprox was not declared on frequency, the Chinook crew had filed an Airprox DASOR on the day of occurrence but that the Odiham controller report had not been filed until 9 days later. Members therefore considered it unsurprising that the controller had not recalled all elements of the incident and reminded all pilots of the advantages of making an airborne declaration of Airprox on the frequency in use so that associated information and notes could be retained and compiled in a timely manner.

**PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**Contributory Factors:

	2019242		
CF	Factor	Description	Amplification
	<b>Flight Elements</b>		
	<b>• Situational Awareness of the Conflicting Aircraft and Action</b>		
1	Contextual	• Situational Awareness and Sensory Events	Generic, late, no or incorrect Situational Awareness
	<b>• Electronic Warning System Operation and Compliance</b>		
2	Technical	• ACAS/TCAS System Failure	Incompatible CWS equipment
	<b>• See and Avoid</b>		
3	Contextual	• Near Airborne Collision with Aircraft, Balloon, Dirigible or Other Piloted Air Vehicle	A conflict in the FIR

Degree of Risk: C.

Recommendation: Nil.

Safety Barrier Assessment<sup>3</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:**

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **partially effective** because although the Chinook pilot was passed Traffic Information on the glider's bearing, no height information was available to him.

**Electronic Warning System Operation and Compliance** were assessed as **ineffective** because the glider was not compatible with the Chinook TAS and the Chinook was not FLARM-equipped even if the glider had been equipped with FLARM.

<sup>3</sup> 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: 2019242** 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	✓	✓			
<b>Key:</b>		Full	Partial	None	Not Present/Not Assessable	Not Used
Provision	✓	!	✗	○		
Application	✓	!	✗	○	○	
Effectiveness	■	■	■	■	□	