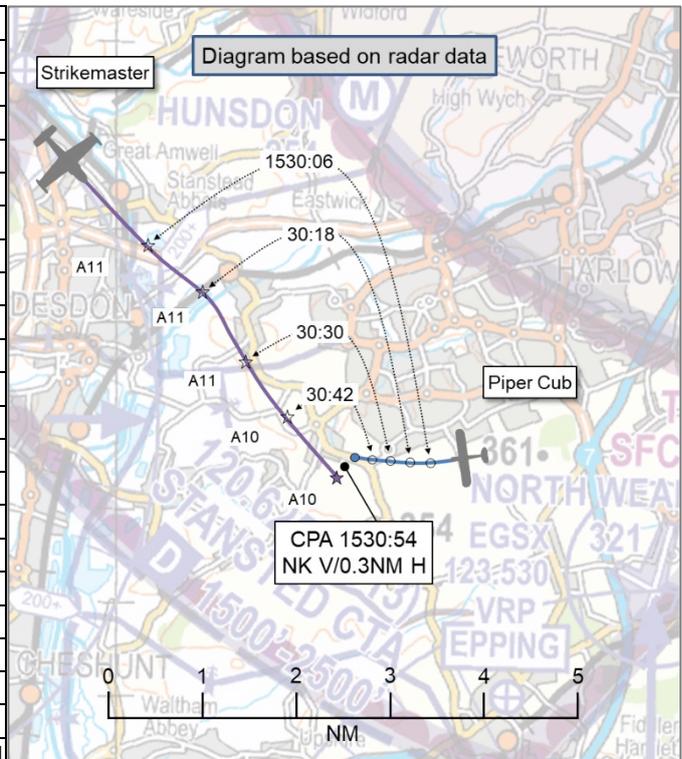


**AIRPROX REPORT No 2023134**

Date: 25 Jun 2023 Time: 1531Z Position: 5144N 00004E Location: 3NM WNW North Weald

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	Piper Cub	Strikemaster
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	AGCS
Provider	Farnborough	North Weald
Altitude/FL	NK	1000ft
Transponder	Not fitted	A, C, S
Reported		
Colours	Yellow	Green/brown
Lighting	Not fitted	Anti-col, landing
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1500ft	1000ft
Altimeter	QNH (1012hPa)	QNH (NK hPa)
Heading	270°	140°
Speed	70kt	240kt
ACAS/TAS	SkyEcho	SkyEcho
Alert	None	None
Separation at CPA		
Reported	~75ft V/150m H	~350ft V/~0.6NM H
Recorded	NK V/0.3NM H	



**THE PIPER CUB PILOT** reports conducting a solo VFR flight. The aircraft had no electrical generator and consequently no transponder. Therefore, on passing Braintree VRP, they contacted Farnborough North Radar and requested a 'non-equipped transit' of the Stansted TMZ 2. This was granted, not above altitude 1500ft and to remain outside CAS. The planned track was between North Weald aerodrome and the Stansted CTR boundary and consequently they were also monitoring the North Weald Radio frequency as they passed north abeam. They would normally make a courtesy call to North Weald but, during an earlier flight, North Weald Radio reported that the aerodrome was closed to fixed-wing traffic all day due to a modelling event. When approximately 4NM northwest of North Weald, and heading west at 1400ft, they sighted a camouflaged Strikemaster aircraft in about the 1:30 o'clock position, in a gentle turn towards and very slightly below, at a range of about 200m. They instinctively pulled back and turned right to initiate avoiding action. They momentarily lost sight of the jet but then both heard and saw the jet reappear in the left 11 o'clock position, still in a slight turn and slightly closer but now diverging down the left-hand side. They were quite shaken and noted that they had fractionally penetrated the Stansted CTA (base 1500ft) by approximately 50ft for approximately 30sec. They corrected their altitude and track and advised Farnborough Radar of the event. Farnborough reported that they could see no other aircraft in the vicinity of the contact they believed to be the Piper Cub (they had not previously been identified) and asked them to confirm their position and track, which they did. They then reiterated that they could not see another aircraft in the vicinity. Farnborough Radar later called back to say that they had contacted North Weald who confirmed a Strikemaster had called them and was landing. The Piper Cub pilot did not recall hearing the Strikemaster pilot contact North Weald prior to the Airprox, although the monitor function on their radio did prioritise the primary frequency (Farnborough Radar) for reception.

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

**THE STRIKEMASTER PILOT** reports conducting a VFR positioning flight to the west of Ware, descending to 1000ft QNH for the approaching Stansted CTA, over the lakes to the east of Hoddesdon, before turning further east towards North Weald. Abeam Ware, and with less than 2min to run to North Weald, they were visual with the airfield and transferred to the North Weald frequency, squawking conspicuity, below the Stansted CTA, and iaw with the procedures for the Stansted TMZ. Just abeam Hoddesdon they saw a yellow high-wing light-aircraft in the 10 o'clock position at about 2NM range and well above, perhaps 400ft. They wing wagged to indicate that they were visual and maintained heading to pass well in front of the other aircraft (around 0.5-0.75NM) before turning around 45° left to position to join the North Weald circuit. Having seen the other aircraft from a good distance, and with significant height deconfliction, no avoiding action was necessary and there was good vertical separation. They did not consider there to be a risk of collision and were perfectly aware of the position of the other aircraft throughout.

The pilot assessed the risk of collision as 'None'.

**THE NORTH WEALD AIR GROUND OPERATOR** reports that the airfield was NOTAM'd closed for a large model aircraft show. In the morning they spoke to [Piper Cub C/S] when they passed to the north, going to the east. About 1500 local they were told by the show organizer that the Strikemaster [pilot] was returning at 1630 local and wanted to speak to them. The pilot phoned and they discussed the displaced threshold because of FOD on the runway. They said their ETA was 1630 local. The Strikemaster pilot contacted them inbound for a right-hand join for a run-and-break for RW20. They landed at 1634 local and, when on the rollout, the phone in the Tower rang with Farnborough asking if a jet had just landed. They confirmed it had and gave the registration. They were informed an Airprox was going to be filed by [Piper Cub C/S]. The Strikemaster pilot was informed. The A/G Operator had not been speaking to the pilot of [Piper Cub C/S].

**THE FARNBOROUGH CONTROLLER** reports [Piper Cub C/S] was transiting through TMZ 2 as a primary [contact] only. The pilot reported that they had passed very close to an opposite direction fast military jet which they thought was a Strikemaster. At the time, the controller believed there was nothing showing on radar, however, an intermittent contact appeared in the North Weald vicinity shortly after. They gave North Weald a call who said a Strikemaster had just landed and gave them the registration. The aircraft didn't appear to be squawking, but North Weald said its squawk was sometimes intermittent. It was in TMZ 2 so should have had a squawk on.

## Factual Background

The weather at Stansted was recorded as follows:

METAR EGSS 251520Z AUTO 18018G28KT 9999 NCD 30/13 Q1012=

TAF EGSS 251104Z 2512/2618 17010KT 9999 FEW045  
PROB40 TEMPO 2513/2517 20016G28KT  
BECMG 2517/2520 27012KT  
PROB30 TEMPO 2517/2519 27015G25KT  
PROB30 TEMPO 2610/2612 29015G25KT 7000 SHRA=

## Analysis and Investigation

### Farnborough Investigation

Description of the event:

Airprox reported on Farnborough LARS North. Traffic conditions and workload was low and radars were serviceable using the Stansted feed. [Piper Cub C/S], a Piper Cub transiting from [departure] to [destination], was given TMZ 2 transit by the Farnborough LARS ATCO, the aircraft was not transponder equipped. The aircraft was not positively identified but given TMZ 2 transit clearance correctly in accordance with the procedure.

1532:07 Farnborough [Piper Cub C/S]

1532:10 Radar [Piper Cub C/S]

1532:12 [Piper Cub C/S] I've just come very close to a fast jet similar level. Can you see anything, is he inbound to North Weald?



Figure 1: Airprox reported by Piper Cub pilot

At this time there was no nearby contact showing on radar, the primary was believed to be [Piper Cub C/S].

15:32:20 [Piper Cub C/S] I believe you're west of North Weald by about 4 miles but I've got absolutely nothing showing on the radar. Intermittent contacts showing within the ATZ of North Weald but not in the vicinity of [Piper Cub C/S]

1532:28 [Piper Cub C/S] that's understood. Just for your record I will be filing an Airprox obviously under a Basic Service just so you know.

1532:36 [Piper Cub C/S] no problem. I think I've got at the moment about equal distance between North Weald and Bovingdon so you've got about 4 or 5 miles to run to Bovingdon is that you?

1532:47 [Piper Cub C/S] ah about 4 or 5 miles to run to Brookmans Park.

15:32:51 Sorry Brookmans park affirm yeah that looks like the one. There is primary contact going into North Weald now that has just appeared but apart from that there's nothing seen near you.

1535:05 [Piper Cub C/S] I think it was a Strikemaster it was um yeah a fast jet camouflaged.

1533:13 Roger okay.

[Piper Cub C/S] continued the flight to [destination] without further incident. After the report by the pilot, the LARS North ATCO called North Weald and was told a Strikemaster aircraft registration [Strikemaster C/S] had recently landed inbound from [departure]. North Weald advised the ATCO the aircraft's transponder was often intermittent.

#### Investigation:

[Piper Cub C/S] was on frequency with [Farnborough] North and reported the Airprox. The aircraft [was] non-transponder equipped and was not identified. No Traffic Information was passed, but this would not have been possible as the aircraft was not identified with no service agreed.

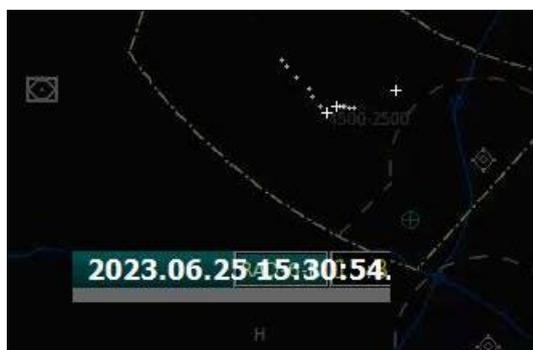


Figure 2: CPA (Farnborough radar screenshot)

#### Conclusions:

[Piper Cub C/S] came into conflict with another aircraft outside controlled airspace.

## UKAB Secretariat

The Piper Cub and Strikemaster 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 head-on or nearly so then both pilots were required to turn to the right.<sup>2</sup> The NATS radar replay displayed the Strikemaster as a primary and secondary track:

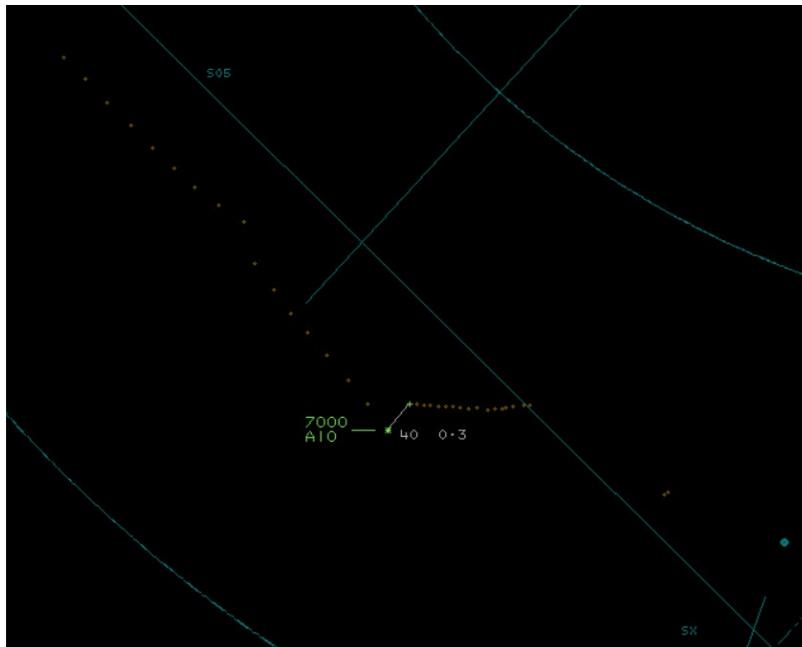


Figure 2: CPA (NATS radar screenshot)

## Summary

An Airprox was reported when a Piper Cub and a Strikemaster flew into proximity near Harlow at 1531Z on Sunday 25<sup>th</sup> June 2023. Both pilots were operating under VFR in VMC, the Piper Cub pilot in receipt of a Basic Service from Farnborough North and the Strikemaster pilot in receipt of an AGCS from North Weald.

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

Information available consisted of reports from both pilots, radar photographs/video recordings, a report from the air traffic controller 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.

Members agreed that the Strikemaster pilot had seen the Cub at an earlier stage than the Cub pilot had seen the Strikemaster, and felt that the Cub pilot had perhaps experienced a degree of startle response when they had seen the Strikemaster at close range. The Board also felt that the Strikemaster pilot may have underestimated the effect of their relatively high speed on the perception of other pilots to their proximity but that their earlier sighting of the Piper Cub, action to avoid and separation at CPA were such that normal parameters had applied, Risk E, with the following contributory factors:

**CF1:** Neither pilot was operating under a service that required monitoring of aircraft position or conflict.

**CF2:** Neither pilot had situational awareness of the other aircraft until first sighted.

<sup>1</sup> (UK) SERA.3205 Proximity.

<sup>2</sup> (UK) SERA.3210 Right-of-way (c)(1) Approaching head-on.

**CF3:** Although each aircraft's TAS was compatible with the other, neither pilot reported having received an alert.

**CF4:** The Cub pilot was concerned by the proximity of the Strikemaster.

Members also questioned why the Farnborough radar display had not shown the Strikemaster secondary radar returns and were briefed that the matter had been highlighted to Farnborough and was in the process of being resolved.

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

### **Contributory Factors:**

2023134				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
<b>Ground Elements</b>				
<b>• Situational Awareness and Action</b>				
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>				
<b>• Situational Awareness of the Conflicting Aircraft and Action</b>				
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
<b>• Electronic Warning System Operation and Compliance</b>				
3	Human Factors	• Response to Warning System	<del>An event involving the incorrect response of flight crew following the operation of an aircraft warning system</del>	CWS misinterpreted, not optimally actioned or CWS alert expected but none reported
<b>• See and Avoid</b>				
4	Human Factors	• Perception of Visual Information	<del>Events involving flight crew incorrectly perceiving a situation visually and then taking the wrong course of action or path of movement</del>	Pilot was concerned by the proximity of the other aircraft

**Degree of Risk:** E.

### **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:

#### **Ground Elements:**

**Situational Awareness and Action** were assessed as **not used** because the Farnborough ATCO was not required to monitor the Strikemaster, under a Basic Service.

#### **Flight Elements:**

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **ineffective** because neither pilot was aware of the other aircraft until sighted.

**Electronic Warning System Operation and Compliance** were assessed as **ineffective** because although the TASs were compatible, neither pilot reported having received an alert.

<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](#).

<b>Airprox Barrier Assessment: 2023134</b>		Outside Controlled Airspace						
<b>Barrier</b>		<b>Provision</b>	<b>Application</b>	<b>Effectiveness</b>				
				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>		<b>Full</b>	<b>Partial</b>	<b>None</b>	<b>Not Present/Not Assessable</b>	<b>Not Used</b>		
Provision	✓	⚠	✗	●				
Application	✓	⚠	✗	●	○			
Effectiveness	■	■	■	■	□			