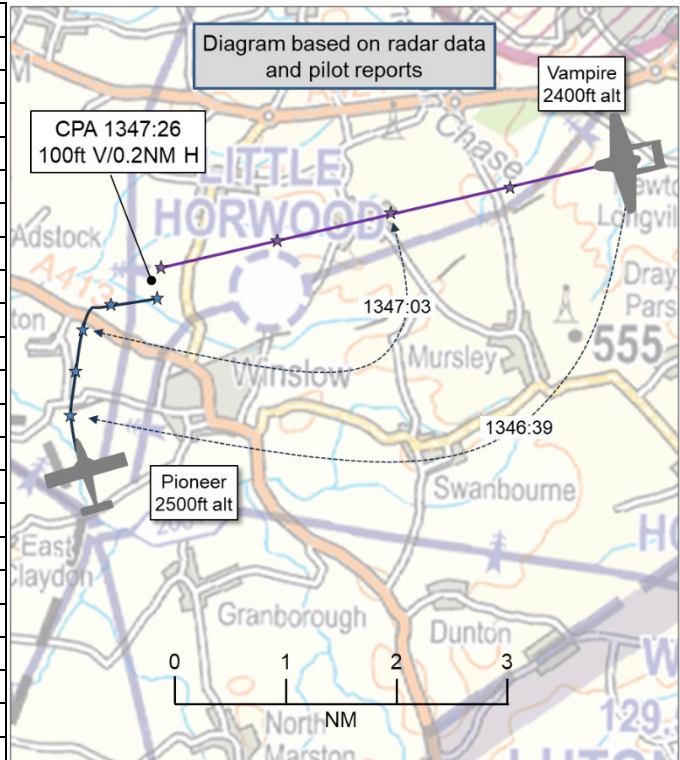


AIRPROX REPORT No 2023148

Date: 13 Jul 2023 Time: 1347Z Position: 5158N 00053W Location: IVO Little Horwood

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Pioneer 300	DH Vampire
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Basic
Provider	Luton Radar	F'borough North
Altitude/FL	2500ft	2400ft
Transponder	A, C, S	A, C, S
Reported		
Colours	Blue/Silver	Silver
Lighting	Nav, Strobes	Nav
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2350ft	2200ft
Altimeter	QNH (1016hPa)	QNH
Heading	078°	260°
Speed	129kt	300kt
ACAS/TAS	PilotAware	Not fitted
Alert	None	N/A
Separation at CPA		
Reported	100ft V/200m H	NK V/NK H
Recorded	100ft V/0.2NM H	



THE PIONEER PILOT reports that this had been an annual test flight for the aircraft permit. They departed from [departure airfield]. They had been under a Basic Service from Luton Radar throughout the flight. The flight had involved various manoeuvres. At the time of the Airprox, the pilot had been readying the aircraft for a baulked landing check. This involved beginning from straight and level to slow the aircraft, which had been in a clean configuration, into a shallow dive. The pilot reports having been in the process of checking for nearby traffic when the Vampire had passed on their port side at an unsafe speed [they judged]. They estimate it had perhaps been 1sec from initial sighting and it then having passed their port wing. Given the Vampire was silver against a grey cloud horizon and near head-on, the pilot reports that they had not identified it until it was approximately 30° to their port.

As an addendum to their report, the Pioneer pilot reflected on the quality of their lookout [judging it to have been] OK in the context of traffic operating at <200 kts. They noted that as they had been about to carry out a baulked landing test, their scan dwelt on their 7 and 5 o'clock positions. They did zig-zag their scan for about 270°, but [felt that] they must have spent 3-4sec on their 5 o'clock before returning to their forward lookout. Just as they had returned to their forward lookout, the Vampire came into view between their 10 and 11 o'clock, and passed them in about 1-2secs. The pilot's assumption is that their position came as much as a surprise to [the Vampire pilot] as theirs did to them. However, because [the Pioneer] colouring includes a vivid blue with nav and strobe [lighting] and the pilot had been in a shallow descent, it is possible the Vampire pilot had an earlier view of the Pioneer. The Pioneer pilot reports that they had not been manoeuvring at the time of the Airprox.

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

THE VAMPIRE PILOT reports that they had been operating the Vampire from [departure airfield] to [destination airfield] under a Basic Service with Farnborough North. [...] The pilot states that they had not been aware of any Airprox during that flight. The Pioneer appeared to have been on their left side

crossing from their left to right above them on a northerly heading. The Pioneer then turned right on an easterly heading toward them while descending. It had not seemed to have been in contact with Farnborough North. The pilot reports that they had not been informed about the traffic as they had been in receipt of a Basic Service.

THE LUTON CONTROLLER reports that they had been informed after the event in question that the pilot of [the Pioneer] had filed an Airprox whilst they had been working as an OJTI and the pilot had been under a Basic Service. The Pioneer pilot had been operating out of [...] and returning there. The controller reports that they did not observe any conflicts.

THE FARNBOROUGH NORTH CONTROLLER reports that they had been informed that an Airprox occurred between a Vampire and a Pioneer on the 13th July 2023 at 1347 on the LARS N sector while they had been working. The controller had no recollection of the event occurring and did not believe that they had been providing radar services to either aircraft involved.

Factual Background

The weather at Luton was recorded as follows:

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METAR EGGW 131320Z AUTO 22011KT 9999 FEW035/// //CB 21/13 Q1016=
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Analysis and Investigation

NATS Safety Investigations

The pilot of the Pioneer had called onto the Luton Intermediate Approach (GW INT) frequency at 1325:53 and had been issued with a Basic Service. The flight had been reported as an annual flight check, operating to and from [...]. The Vampire had been inbound to [...] from [...]. The flight had been operating under a Basic Service from Farnborough LARS and had been issued with a squawk in preparation for handover to Brize Radar.

At 1346:40, the Farnborough LARS controller had passed Traffic Information relating to the Pioneer to the pilot of the Vampire.

A low-level Short Term Conflict Alert (STCA) on the LTC radar display activated between the 2 aircraft at 1347:01. At the time of this alert, the GW INT controller had been engaged in a telephone call for coordination of a flight in a different part of the airspace.

A high-level STCA had activated at 1347:04.

The Farnborough LARS controller had transferred the Vampire to Brize Radar at 1347:11 (CPA minus 15sec).

There was no reference to the Airprox by the pilot of the Pioneer on the GW INT frequency.

UKAB Secretariat

At the time of the event, the Vampire had been indicating a ground speed of 361kts and is therefore governed by:

SERA.6001(a)(7) Classification of airspaces - Class G. IFR and VFR flights are permitted and receive flight information service if requested. All IFR flights shall be capable of establishing air-ground voice communications. A speed limitation of 250 kts IAS applies to all flights below 3050 m (10000ft) AMSL, except where approved by the competent authority for aircraft types, which for technical or safety reasons cannot maintain this speed. ATC clearance is not required.

The operator applied to the UK CAA for a 250kt Approval for the Vampire. This approval was issued on 22nd June 2023 and valid until 21st June 2024 and is for operation above 250kts, below

3050m/100000ft for flying display practice and participation only subject to a number of conditions including:

[...]

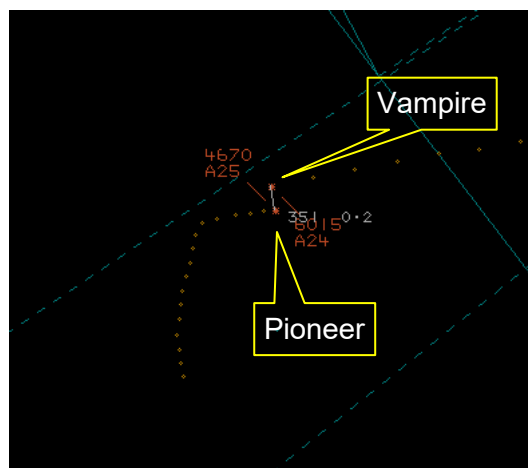
- c) The pilot in command of the aeroplane shall only depart from the specified requirements of UK SERA.6001(a)(4),(5) or (7) to the extent necessary to achieve the purpose of the flight;

[...]

- f) During the said flights the aeroplane should be in receipt of a surveillance-based air traffic service from an Air Traffic Services Unit, except when the aeroplane is flying in a flying display pursuant to Article 86 of the ANO 2016;

When the Vampire pilot had first called, they had not requested a specific service and the Farnborough controller did not ask, but instead allocated a Basic Service which was not questioned by the pilot.

However, timely and very precise Traffic Information had been passed by the Farnborough controller to the pilot of the Vampire on the Pioneer, and acknowledged by the Vampire pilot when the aircraft were still over 6NM apart, but the pilot did not report visual. The Traffic Information was repeated when both aircraft were passing each other less than 1NM apart at which point the Vampire pilot reported being visual with the Pioneer.



CPA 100ft V/0.2NM H 1347:26

Summary

An Airprox was reported when a Pioneer and a Vampire flew into proximity at Little Horwood at 1347Z on Thursday 13th July 2023. Both pilots were operating under VFR in VMC, the Pioneer pilot in receipt of a Basic Service from Luton Radar and the Vampire pilot in receipt of a Basic Service from Farnborough LARS North.

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.

Members firstly discussed the actions of the Pioneer pilot, noting the nature of the flight they had been performing and recognising that the aircraft would have been heavy and engaged in unusual manoeuvres requiring a great deal of 'heads-in' and that the pilot flying would normally be supported by an observer to aid in lookout and situational awareness and commented positively on the pilot's

proactive lookout ahead of each event. The Board noted that the Pioneer pilot had been in receipt of a Basic Service from Luton with the known limitations of that service (CF1), had been equipped with an operational transponder and a branded electronic conspicuity unit for improved situational awareness, and agreed that it was unfortunate that that equipment had not detected any signals from the Vampire (CF8) and had therefore not offered more opportunity for visual acquisition of the Vampire, thus contributing to an effective non-sighting (CF9) for the Pioneer pilot.

Turning to the actions of the Vampire pilot, members reviewed the relevant approval for the event to which the Vampire pilot had been enroute, noting the absence of reference to transit above 250kts in Class G airspace below 10,000ft (CF6). They recognised the contribution that a high transit speed without a surveillance-based service had added to this event (CF5). Although the Vampire pilot had been in receipt of a Basic Service from Farnborough, the Board agreed that this would normally not have provided the more-rounded situational awareness needed both for the Vampire pilot and for those operating in the same area. Members wondered if the pilot of the Vampire had misinterpreted the level of proactivity from the controller and thus had expected more in the way of Traffic Information than a Basic Service usually offered. This reduced service combined with a less-than-ideal view from a Vampire cockpit had reduced the possibility for visual acquisition but, in this case, although under a Basic Service, the Farnborough controller had proactively provided Traffic Information on the Pioneer 45sec ahead of the CPA enabling the Vampire pilot to see and ensure sufficient separation from the Pioneer.

In reviewing the roles of the Luton and Farnborough controllers, members noted the Basic Service provided to the Pioneer pilot by the Luton controller but recognised that the distraction of telephone coordination (CF2) for other activity in their area by the Luton controller had led to them having missed an STCA (CF4) 25sec ahead of the CPA that may have afforded the opportunity for Traffic Information to have been passed to the Pioneer pilot (CF3) and a resultant lack of situational awareness of the presence of the Vampire (CF7). Members acknowledged that the Farnborough controller had likely recognised the effect of the Vampire pilot’s higher speed and, although providing a Basic Service (CF1), praised the controller for having monitored the flight and passing Traffic Information at critical points.

When determining the risk, members considered the reports from both pilots together with reports from the controllers involved, radar screenshots and video recordings. They agreed that although the Pioneer pilot had been concerned by the proximity of the Vampire, the Vampire pilot had had good visual contact with the Pioneer ahead of its turn towards the Vampire, and there had therefore been no risk of collision. Members assigned a Risk Category C to this Airprox.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2023148				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Ground Elements				
• 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
2	Human Factors	• Task Monitoring	Events involving an individual or a crew/team not appropriately monitoring their performance of a task	Controller engaged in other tasks
• Electronic Warning System Operation and Compliance				
3	Human Factors	• ATM personnel operation/interpretation of equipment	An event involving the operation or interpretation of ATM equipment by ATM personnel	Controller did not adequately act on the EWS indications
4	Technical	• STCA Warning	An event involving the triggering of a Short Term Conflict Alert (STCA) Warning	
Flight Elements				
• Regulations, Processes, Procedures and Compliance				

5	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				
6	Human Factors	• Action Performed Incorrectly	Events involving flight crew performing the selected action incorrectly	Incorrect or ineffective execution
• Situational Awareness of the Conflicting Aircraft and Action				
7	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				
8	Human Factors	• Response to Warning System	An event involving the incorrect response of flight crew following the operation of an aircraft warning system	CWS misinterpreted, not optimally actioned or CWS alert expected but none reported
• See and Avoid				
9	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

Degree of Risk: C.

Safety Barrier Assessment¹

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

Ground Elements:

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the Luton controller had received an STCA indication that they had not acted on as at that time they had been engaged in a telephone call for coordination of a flight in a different part of the airspace.

Flight Elements:

Regulations, Processes, Procedures and Compliance were assessed as **ineffective** because the Vampire pilot had been operating outside the provisions of their CAA approval.

Tactical Planning and Execution was assessed as **partially effective** because the Vampire pilot had transited between their departure and destination airfields below 10,000ft and at a speed in excess of 250kts.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the Pioneer pilot, operating under a Basic Service and having received no TAS alerts, had no situational awareness of the Vampire.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the onboard TAS unit for the Pioneer did not detect the transponder signals from the Vampire.

¹ 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: 2023148		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 Conflicition & 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							