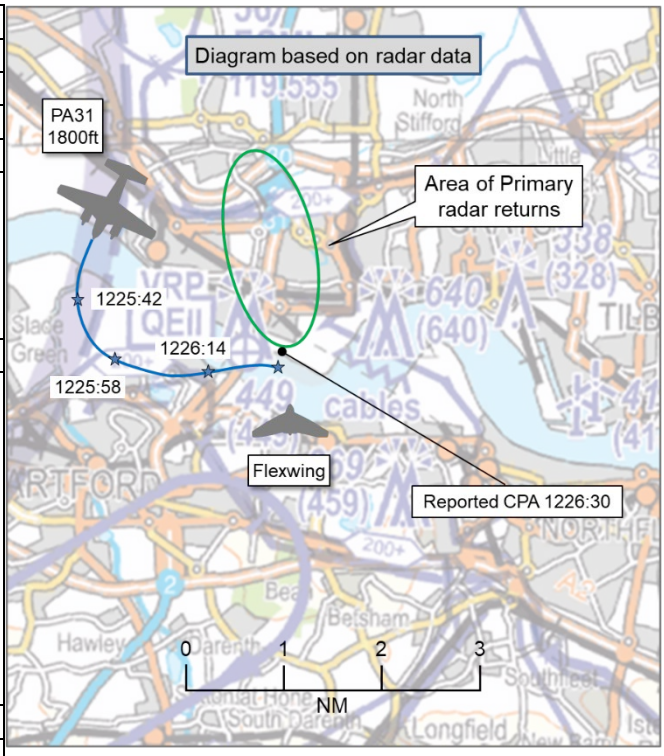
AIRPROX REPORT No 2024256

Date: 04 Oct 2024 Time: 1227Z Position: 5127N 00015E Location: QE2 Bridge, London

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA31	Flexwing
Operator	Civ Comm	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	Untraced
Service	Basic	
Provider	Thames Radar	
Altitude/FL	1800ft	
Transponder	A, C, S	
Reported		
Colours	White	Untraced
Lighting	Nav, strobes, bcn	
Conditions	VMC	
Visibility	>10km	
Altitude/FL	1750ft	
Altimeter	QNH (1015hPa)	
Heading	'Easterly'	
Speed	160kt	
ACAS/TAS	TAS	
Alert	None	
Separation at CPA		
Reported	20ft V/10m H	NK
Recorded	NK	



THE PA31 PILOT reports that they had been conducting an ILS calibration for LCY RW27 and had completed a level run and turned back eastbound to position for the next profile. They were given a Basic Service outside [controlled airspace] by Thames Radar and maintained a level of 1750-1800ft as this was the starting altitude for the next run. Thames called to advise that although they were under a Basic Service there was traffic in their 10 o'clock at around 1NM. This traffic was acquired and also showed on the aircraft TAS. As the PA31 pilot had looked back from this, their peripheral vision caught sight of the other aircraft on their wingtip, crossing right-to-left (south-to-north) and at the same altitude. They were very close (estimate around 50ft) and they recall having seen the wing increasing its angle of attack to climb above them. At its closest, the PA31 pilot estimated the other aircraft had been as close as 20ft. This had happened in a split second and they had had no time to react before the Flexwing had passed just above them. As the PA31 pilot had turned back inbound to LCY, the Flexwing was visible just north of the centreline for RW27, and the right hand seat pilot kept it visual until they had passed. As they had completed their next profile and positioned outbound they had climbed to the starting altitude of their next approach and, at 2400ft, the Flexwing had passed underneath them heading south. At no point did it show on their TAS which had [accurately] shown much other traffic that day.

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

Unfortunately, despite significant effort, **THE FLEXWING PILOT** could not be traced.

THE THAMES RADAR CONTROLLER reports that the PA31 pilot reported an encounter with an unknown aircraft to the south of their position whilst flying downwind for an ILS calibration approach to London City RW27. The aircraft was not visible to the Thames Radar controller on NODE Multi-Track Radar, however, the pilot subsequently reported to the UK Airprox Board an encounter with a Flexwing aircraft that was described as having been as close as 20ft from their aircraft. The PA31 was operating

on a Basic Service under the control of Thames Radar outside controlled airspace. Traffic Information was called on an aircraft to their the left-hand side and the pilot reported visual. The pilot subsequently notified the UK Airprox Board of an Airprox with an aircraft on the right-hand side which passed in close proximity. This other aircraft was not shown on the radar display of the Thames Radar controller and therefore no Traffic Information had been passed relating to the confliction.

Factual Background

The weather at London City airport was recorded as follows:

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METAR EGLC 041220Z AUTO 08005KT 050V130 9999 BKN036 15/07 Q1021=
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Analysis and Investigation

NATS Safety Investigations

The PA31 pilot had been performing routine ILS calibration aerial work at London City [Airport] and was on frequency with the Thames Radar (TMS) controller. After performing a calibration approach to RW09, the PA31 had been tracking on a northerly heading maintaining 1500ft to the northwest of the airfield. At 1038:29 the TMS controller advised the pilot "*you are right on the edge of Controlled Airspace there, so it'll be a Basic Service outside, Radar Control in, if you're happy with that?*", the pilot replied, "*Radar Control in, Basic out, thank you very much we'll stick with that"*. The aircraft was subsequently maintaining 1700ft below the London Terminal Manoeuvring Area (LTMA) tracking on a downwind easterly heading, to the south of the extended centreline. At 1226:03 the TMS controller reminded the pilot that they were still under a Basic Service outside controlled airspace and passed Traffic Information on an aircraft "*just northeast of you there in your ten o'clock about a mile just the other side of the M25, similar level, southbound*". The pilot acknowledged the call and reported "*visual*".

Safety Investigations was informed on the 9th October 2024 that the PA31 pilot had reported an Airprox. In their report, the PA31 pilot had identified an additional aircraft south of their position as the [aircraft involved in] the Airprox, rather than the aircraft located in their 10 o'clock, for which Traffic Information was passed by the TMS controller. The radar replay that replicated what was displayed to the TMS controller at the time of the event showed no primary or secondary surveillance radar (SSR) returns to the south of the PA31 at the time of the reported Airprox that could be identified as the 'Flexwing' aircraft reported by the PA31 pilot.

UKAB Secretariat

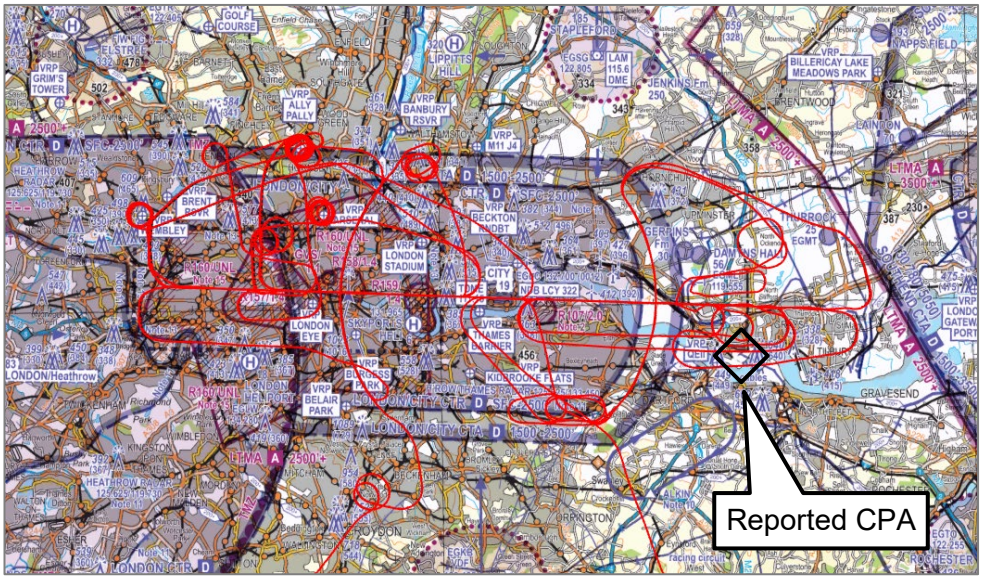


Figure 1: Pilot provided image of the PA31 flightpath for the entirety of its task. Reported CPA (marked): 1226:30

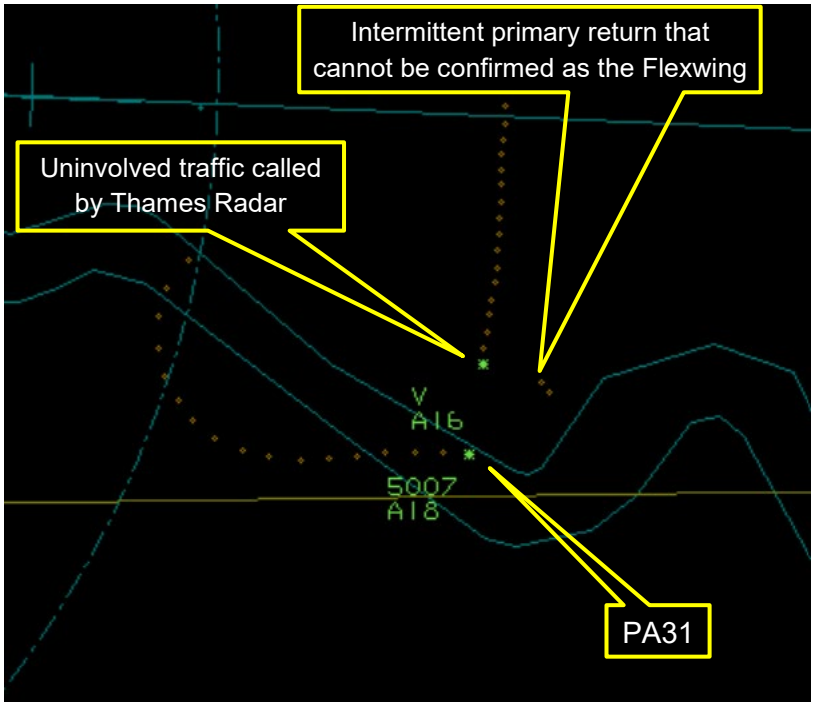


Figure 2: At reported CPA – 1226:30. Southbound aircraft was a Pipistrel 164. 2 unattributed returns to the northeast of the PA31 that could not be positively confirmed as the Flexwing.

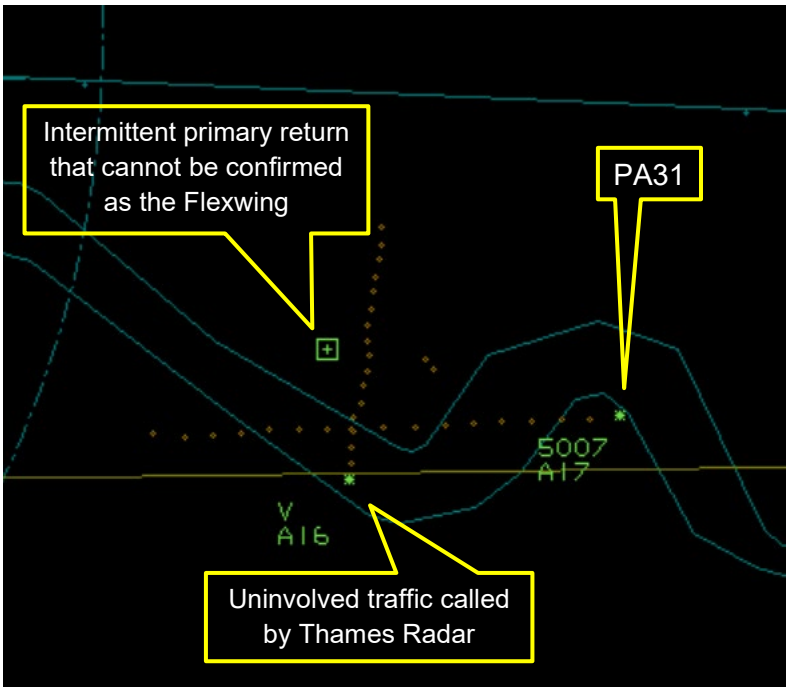


Figure 3: At 1227:08 – a potential continuation of the 'unidentified primary contact'. That return subsequently tracked towards the northeast and disappeared 16sec later just after having crossed the southbound uninvolved aircraft's track.

The PA31 was tracked at all stages via NATS radar. Unfortunately, despite significant effort, the Flexwing pilot could not be traced. The comprehensive description of the event received from the PA31 pilot when tied to the radar images at Figures 2 and 3 suggests that the primary contact was the other aircraft involved in the Airprox.

The PA31 and Flexwing pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.[1]

Summary

An Airprox was reported when a PA31 and a Flexwing flew into proximity at the Queen Elizabeth II bridge, London at 1227Z on Friday 4th October 2024. The PA31 pilot was operating under VFR in VMC, and in receipt of a Basic Service from Thames Radar. Unfortunately, the Flexwing pilot could not be traced.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of a report from the PA31 pilot, 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.

The Board discussed the information available for this event, recognising that that had been limited to the original report from the PA31 pilot, a report from the Thames Radar controller and a subsequent NATS investigation. Members firstly discussed the actions of the PA31 pilot, noting that they had been completing an extremely complex and difficult task, accepting that accuracy within the work is key to a successful conclusion and that the concentration of the crew is therefore primarily focussed on work within the cockpit. The PF had been supported by 2 other crew members to enable safe operation, had been in receipt of an Air Traffic Service that had switched between a Radar Control Service inside controlled airspace and a Basic Service whilst outside, and had been equipped with a Traffic Alerting System which, in this case, had registered no emissions from the Flexwing (**CF3**). When combined with no related Traffic Information available from the Thames Radar controller, the Board agreed that the pilot had not had any situational awareness of the presence of the Flexwing (**CF2**) and that they had consequently sighted the Flexwing at an extremely late stage as it had passed from their right-to-left hand side (**CF4**). Members felt that there had been little more the pilot could have done to have avoided this event.

Turning to the actions of the Thames Radar controller, members acknowledged the level of service offered, and the constraints under which such services are given. They recognised that the PA31 crew had been given a lower level of service outside controlled airspace and that this reflected the controller's inability to provide Traffic Information on other traffic that they could not see. The Board praised the controller for their continuing active involvement whilst the PA31 had been under the less-involved Basic Service, offering information on all those contacts shown to them but, in the case of the Flexwing, had not had any situational awareness of it prior to the event (**CF1**). Members felt that the controller had done all possible in this case.

When determining the risk of the Airprox, with confirmed radar data available only for the PA31, the Board considered that detail alongside the description of the event from the pilot. They agreed that there had been an extremely close encounter and that there had been a risk of collision (**CF5**). They noted that the PA31 pilot had seen the Flexwing too late to take any avoiding action and thought that the separation had been such that safety had been reduced to the bare minimum and providence had played a major part in the 2 aircraft not colliding. Consequently, the Board assigned Risk Category A to this event.

[1] (UK) SERA.3205 Proximity.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024256			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Situational Awareness and Action			
1	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, no or inaccurate Situational Awareness
	Flight Elements			
	• Situational Awareness of the Conflicting Aircraft and Action			
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
	• Electronic Warning System Operation and Compliance			
3	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			
4	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			
5	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[2]

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 of the Confliction and Action were assessed as **ineffective** because the Thames Radar Controller had no situational awareness of the presence of the Flexwing.

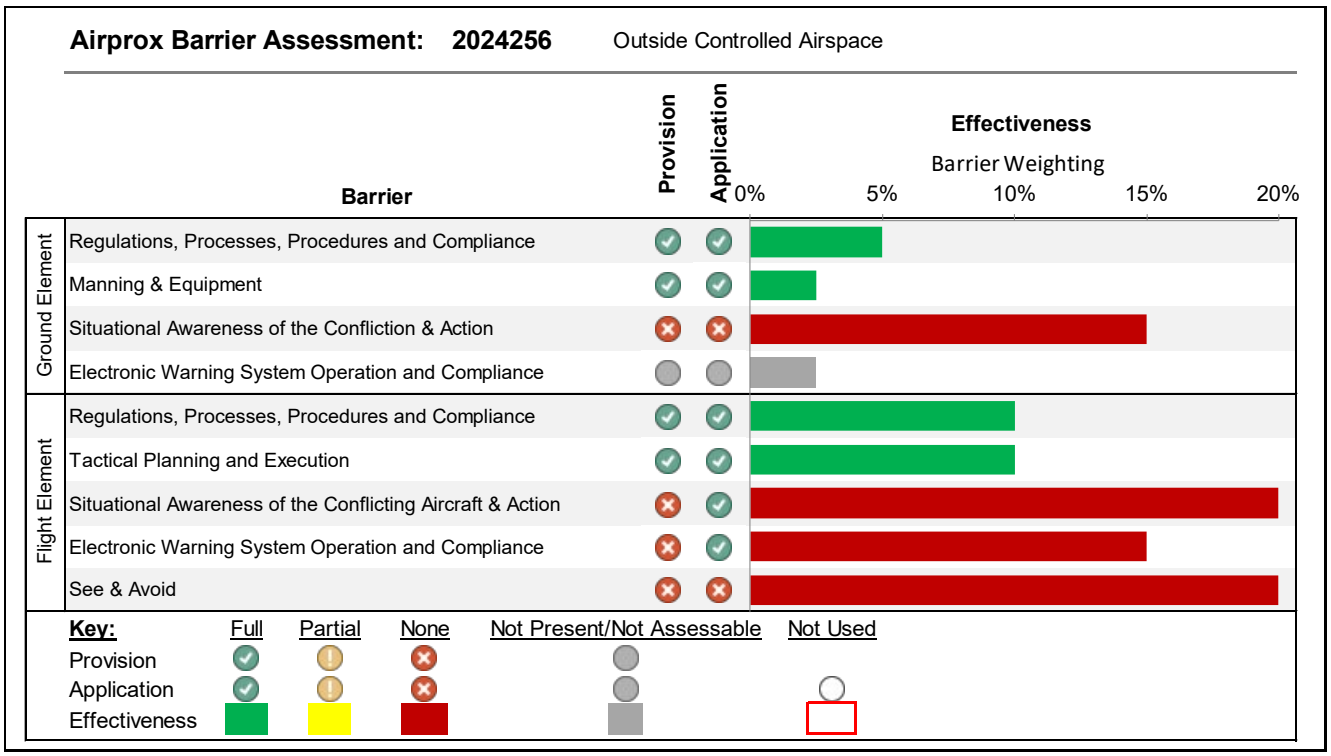
Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the PA31 pilot had no situational awareness of the presence of the Flexwing.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the equipment carried by the PA31 had not been able to detect any electronic emissions from the Flexwing.

See and Avoid were assessed as **ineffective** because the PA31 pilot had sighted the Flexwing at or around the moment of CPA.

[2] 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: 2024256
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
Key:
Full
Partial
None
Not Present/Not Assessable
Not Used
Provision
Application
Effectiveness