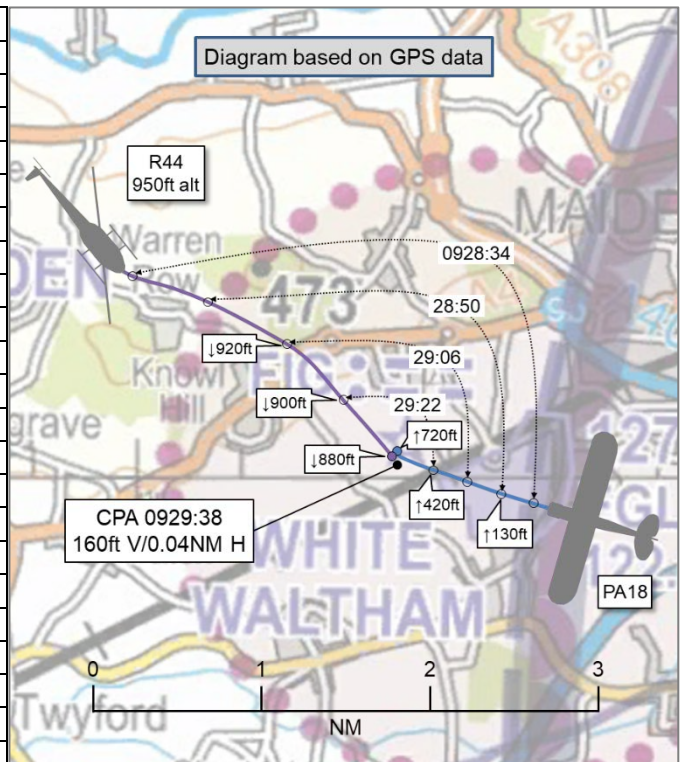


AIRPROX REPORT No 2021152

Date: 18 Aug 2021 Time: 0930Z Position: 5130N 00048W Location: White Waltham ATZ

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA18	R44
Operator	Civ FW	Civ Comm
Airspace	White W'tham ATZ	White W'tham ATZ
Class	G	G
Rules	VFR	VFR
Service	AGCS	AGCS
Provider	Waltham Radio	Waltham Radio
Altitude/FL	720ft	880ft
Transponder	Not fitted	A, C, S
Reported		
Colours	White	Blue, white
Lighting	Strobe, nav	HISL, landing light
Conditions	VMC	VMC
Visibility	5-10km	>10km
Altitude/FL	600ft	500ft
Altimeter	QFE (1013hPa)	QNH (NK hPa)
Heading	300°	NK
Speed	65kt	100kt
ACAS/TAS	Not fitted	TAS
Alert	N/A	None
Separation at CPA		
Reported	100ft V/150m H	50-100ft V/100m H
Recorded	160ft V/0.04NM H ¹	



THE PA18 PILOT reports that they were flying a training detail in the circuit at White Waltham with a student in the front seat. After 2 circuits, they heard [the R44 pilot] call Waltham Radio to ask if any aircraft were in the circuit. Waltham Radio replied '1 Cub'. The PA18 pilot also radioed [PA18 c/s] final 29 touch and go'. They further radioed 'Cub is on final' which [the R44 pilot] acknowledged. The PA18 pilot then saw the R44 at a range of approximately 500ft and halted their climb to preserve separation.

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

THE R44 PILOT reports conducting a pipeline survey with one observer and one pilot, both in the front seats. They were on task, with the observer looking at the pipeline on the ground with reference to their laptop. The pilot was positioning the aircraft relative to the pipeline with reference to the observer's laptop. At about 5-10 miles out, they made a call to Waltham Radio informing them of their intentions to transit the ATZ from NW to SE at a height of 500ft. Waltham Radio responded with circuit direction and QNH, so the pilot asked them to clarify how many aircraft were in the circuit; one pilot responded to the A/G operator's call. Their readability was 2-3 with a loud, high-pitched background noise which made it difficult to hear exactly where in the circuit they were. The R44 pilot called entering the ATZ from the NW, with their altitude, and next called crossing the RW29 climb-out. It was shortly after this that they saw the PA18. The late sighting surprised both crew-members and no avoiding action was taken as it was clear at that stage that there was no longer a risk of collision, though separation was less than they would have liked. They believe the late sighting was due to the other aircraft being relatively stationary against the terrain, possibly in a blind spot behind the instrument console, their observer or their laptop. The other pilot called 'visual with the helicopter' shortly after and sounded relatively calm. This gave them the impression that [the PA18 pilot] might have had them in sight for

¹ GPS-derived.

longer than they had [the PA18 in sight], given their position as relatively high in [the PA18 pilot's] windscreen and set against the sky rather than the ground.

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

THE WHITE WALTHAM AIR GROUND OPERATOR reports that, at approximately 1030, [the R44 pilot] made a call to Waltham Radio to say that they would like to route through the ATZ. They asked if there was any circuit traffic. The AGO made a radio call on 122.605MHz to ask if all aircraft in the circuit could make themselves known. The only response came from [the pilot of] a Cub [c/s supplied] who reported that they were on finals for RW29. [The R44 pilot] acknowledged the radio call from the Cub pilot. The AGO did not see the alleged Airprox but, when the pilot of [the PA18] came into Operations, they made it quite clear that the helicopter had passed very close to them. The AGO believes that [another helicopter] was also on frequency.

Factual Background

The weather at Heathrow Airport was recorded as follows:

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METAR COR EGLL 180920Z AUTO 28009KT 9999 BKN023 OVC031 18/14 Q1017 NOSIG=
METAR COR EGLL 180950Z AUTO 28009KT 9999 BKN021 BKN026 OVC032 19/14 Q1017 NOSIG=
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Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radar replay was undertaken. The PA18 was not equipped with a transponder so it was not possible to identify – by use of the radar alone – the single primary radar return detected shortly before CPA (see Figure 1). However, both pilots provided the UKAB Secretariat with their GPS log files from the flight and the position of the primary radar return correlated with the positional information from the PA18 pilot's GPS log file. The NATS radars held a stable track on the R44 throughout the moments leading up to the Airprox and this track also correlated with the GPS data provided by the R44 pilot. Using the GPS data provided by both pilots, a CPA of 0.04NM horizontal and 160ft vertical separation was measured.

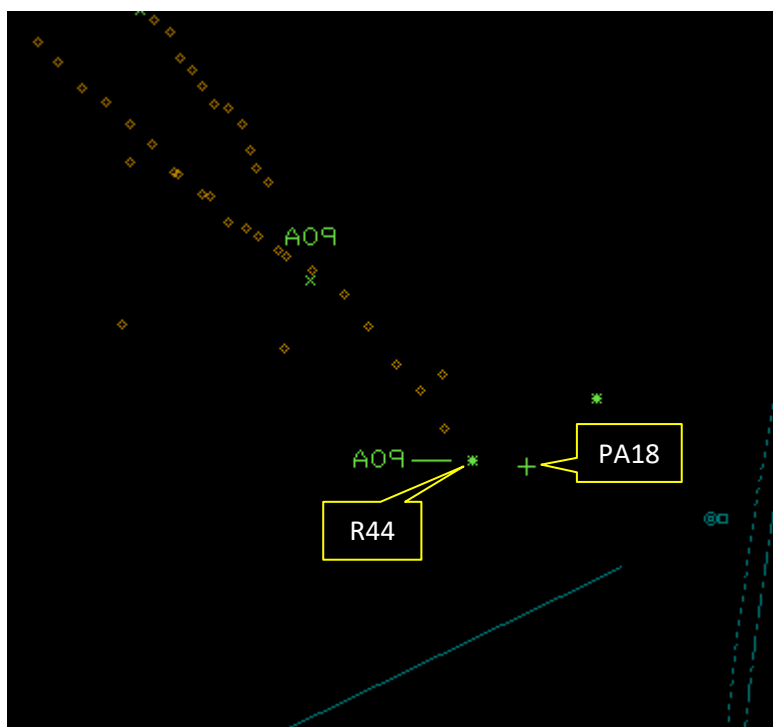


Figure 1 – 0929:35 – single primary radar return

The PA18 and R44 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.² An aircraft operated on or in the vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in operation.³ If there is no flight information centre at the aerodrome the commander must obtain information from the air/ground communication service to enable the flight to be conducted safely within the aerodrome traffic zone.⁴

Summary

An Airprox was reported when a PA18 and an R44 flew into proximity in the White Waltham ATZ at 0930Z on Wednesday 18th August 2021. Both pilots were operating under VFR in VMC and both pilots were in receipt of an AGCS from Waltham Radio.

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.

Due to the exceptional circumstances presented by the coronavirus pandemic, this incident was assessed as part of a 'virtual' UK Airprox Board meeting where members provided a combination of written contributions and dial-in/VTC comments.

The Board first considered the actions of the PA18 pilot and heard from a GA pilot member familiar with White Waltham that it is not uncommon for pipeline survey aircraft to transit through the White Waltham ATZ as part of their tasking. Members quickly agreed that the PA18 pilot had responded to the Air Ground operator's request to identify themselves for the benefit of the R44 pilot, and had included their position in the circuit to aid the R44 pilot's situational awareness. However, the PA18 pilot had only gleaned generic information on the position and altitude of the R44 and had not therefore had specific situational awareness of the R44's position relative to their own aircraft (**CF5**). However, the Board agreed that it had been for the R44 pilot to conform with or avoid the pattern of traffic formed in the circuit and therefore the PA18 pilot had followed the correct procedures in continuing with their touch-and-go. Members concluded that the PA18 pilot had not expected the R44 to be where it was (on the climb-out lane from the runway in use on a near-reciprocal heading) and had, therefore, sighted the aircraft at a late stage (**CF7**) and had had to arrest their climb out to maintain separation.

The Board then considered the actions of the R44 pilot and quickly agreed that, as the pilot joining the ATZ, it had been for them to integrate safely with the PA18 already established in the circuit pattern. Members noted that the R44 pilot had had difficulty understanding the transmission from the PA18 pilot regarding their position and considered that the R44 pilot had, therefore, not obtained information to enable their flight to be conducted safely within the ATZ or sufficient situational awareness for them to integrate with the PA18, contributing directly to the Airprox (**CF1, CF3**). Additionally, members wondered why the R44 pilot, on receipt of the airfield details from the Air Ground operator, had not adapted their routing to conduct the pipeline inspection from SE to NW which, whilst acknowledging it may not have fitted with the pilot's intended mission flow, would have been more consistent with the circuit direction and avoided the possibility of a head-on encounter with circuit traffic (**CF2**). The Board noted that the PA18 pilot had not transmitted their intentions to conduct a touch-and-go, but nevertheless judged that the R44 pilot could have requested more information from the PA18 pilot, particularly in light of the garbled transmission that they had received previously (**CF4**). Members agreed that, in the event, the R44 pilot had only gleaned generic situational awareness regarding the positioning of the PA18 and its pilot's intentions (**CF5**) and that they had also been unable to supplement their situational awareness from their TAS equipment as this could not detect the non-transponder-equipped PA18 (**CF6**). Members concluded, therefore, that the R44 pilot had been relying heavily on

² (UK) SERA.3205 Proximity.

³ (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.

⁴ The Rules of the Air Regulations 2015, Section 3, Article 11(5).

their lookout to detect the PA18 and agreed with the R44 pilot's report that their lookout had been compromised to some degree by the aircraft's structure and the observers laptop screen, leading to them only sighting the PA18 at a point in time where it had been too late to materially affect the separation (**CF8, CF9**).

The Board then briefly considered the role of the White Waltham Air Ground operator and members quickly agreed that they had done all that had been required of them in responding to the R44 pilot's joining call and requesting pilots in the circuit to identify themselves. The Board agreed that the Air Ground operator had had no part to play in this event.

Finally, the Board considered the risk involved in this incident. Members noted that the PA18 had not been equipped with a transponder and was therefore very grateful to the PA18 pilot for having supplied their GPS log file. Similarly, the Board was also grateful to the R44 pilot for having provided their GPS file as the provision of this data had eliminated any questions as to differing errors in recoding equipment and had therefore greatly enhanced the Board's understanding of the evolution and geometry of the event. Members noted that the measured lateral separation had been ~250ft (0.4NM) and the vertical separation 160ft, and also noted that the aircraft had been travelling in opposite directions. Additionally, the PA18 had been at a critical stage of flight (just after take-off) which the Board felt had added to the overall risk of this encounter. However, it is the Board's role to assess only the risk of collision, and to this end the Board concluded that safety margins had been much reduced, that safety had not been assured and that a risk of collision had existed (**CF10**). Accordingly, the Board assigned a Risk Category B to this Airprox.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2021152			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Flight Elements				
• Regulations, Processes, Procedures and Compliance				
1	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				
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
3	Human Factors	• Monitoring of Environment	Events involving flight crew not to appropriately monitoring the environment	Did not avoid/conform with the pattern of traffic already formed
• Situational Awareness of the Conflicting Aircraft and Action				
4	Human Factors	• Lack of Communication	Events involving flight crew that did not communicate enough - not enough communication	Pilot did not request additional information
5	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				
6	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				
7	Human Factors	• Identification/Recognition	Events involving flight crew not fully identifying or recognising the reality of a situation	Late sighting by one or both pilots
8	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
9	Contextual	• Visual Impairment	Events involving impairment due to an inability to see properly	One or both aircraft were obscured from the other

• Outcome Events			
10	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: B

Safety Barrier Assessment⁵

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 **not used** because the White Waltham Air Ground Operator was not required to maintain situational awareness on traffic in the circuit and their only involvement was to request that all pilots within the circuit make themselves known.

Flight Elements:

Regulations, Processes, Procedures and Compliance were assessed as **ineffective** because the R44 pilot did not conform with or avoid the pattern of traffic in the White Waltham circuit. Additionally, the R44 pilot did not obtain information to enable their flight to be conducted safely within the White Waltham ATZ.

Tactical Planning and Execution was assessed as **ineffective** because the R44 pilot did not conform with or avoid the pattern of traffic in the White Waltham circuit and flew in opposition to the prevailing circuit's climb-out lane at or around circuit height.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because both pilots only had generic situational awareness regarding the presence and position of the other aircraft, and the R44 pilot did not request clarification from the PA18 pilot of their unintelligible transmission.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the TAS on-board the R44 could not detect the non-transponding PA18.

See and Avoid were assessed as **partially effective** because the PA18 pilot saw the R44 late and could only level off to maintain separation, and the R44 pilot did not see the PA18 in time to take action to materially increase the separation.

⁵ 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: 2021152 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:		<u>Full</u>	<u>Partial</u>	<u>None</u>	<u>Not Present/Not Assessable</u>	<u>Not Used</u>		
Provision	✓	⚠	✗	⊘				
Application	✓	⚠	✗	⊘	○			
Effectiveness	■	■	■	■	□			