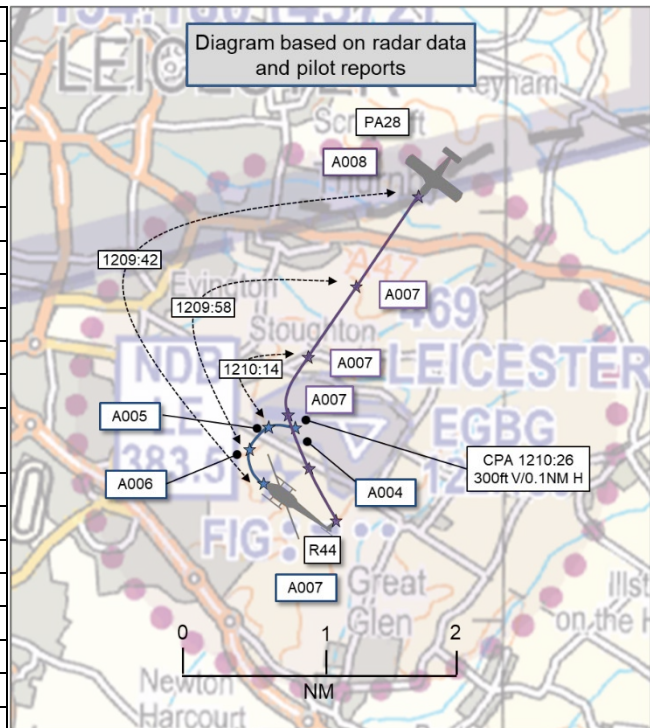


AIRPROX REPORT No 2023094

Date: 13 May 2023 Time: 1210Z Position: 5236N 00102W Location: Leicester ATZ

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	R44	PA28
Operator	Civ Helo	Civ FW
Airspace	Leicester ATZ	Leicester ATZ
Class	G	G
Rules	VFR	VFR
Service	AGCS	AGCS
Provider	Leicester Radio	Leicester Radio
Altitude/FL	A004	A007
Transponder	A, C, S+	A, C, S
Reported		
Colours	NR	Blue and White
Lighting	NR	Beacon, Strobes, Landing, Nav.
Conditions	VMC	VMC
Visibility	NR	<5km
Altitude/FL	500-600ft AGL	900ft AGL
Altimeter	QNH (1028hPa)	QFE
Heading	100°	100°
Speed	50kt	100kt
ACAS/TAS	TAS	Not fitted
Alert	Information	N/A
Separation at CPA		
Reported	NR V/NR H	500ft V/100m H
Recorded	300ft V/0.1NM H	



THE R44 PILOT reports that they had been flying solo circuits on RW10R. They had turned from base onto final, which is quite close to the runway to avoid overflying the Aero Club. As they turned, they had an [indication] on the EC equipment/TAS [... branded ADS-B In/Out and display model] of traffic in their 9 o'clock, at the same level. They looked and saw a fixed-wing aircraft [straight ahead]. They had descended by this point to 500-600ft AGL in preparation for final [for the H]. Their initial thought had been that the other aircraft had been about to turn final for RW10L, although they thought they were leaving it quite late. The fixed-wing aircraft did not turn final for RW10L and appeared to turn slightly towards the R44. This alarmed the R44 pilot as they were gaining speed to avoid the PA28, however, they stayed on a [fixed] relative bearing. The R44 pilot then generously lowered the collective to avoid the fixed-wing aircraft.

THE PA28 PILOT reports arriving at Leicester with a lowering cloud base down to around 900ft QFE. Their pilot/passenger called for airfield information, AFIS [sic] advised runway in use had been 10LH. They had been aware of a call from a helicopter that had been approaching the airfield to land on RW04 [they recalled]. The PA28 pilot joined and called "downwind RW10LH" maintaining 900ft and continued to base leg. Subsequent to that call they heard no radio calls from AFIS [sic] or position calls from any other aircraft. Due to poor visibility, the PA28 pilot arrived on final too close to make a safe landing and decided, as there had been no reported traffic to conflict, to cross to the dead-side maintaining VFR at 900ft to re-join crosswind/left-hand downwind RW10LH. The PA28 pilot recalls that if they had opted for a go-around from that position, the other option, it would also have resulted in entering the dead-side on the same basis. They report being aware of a helicopter, with rotors turning, ahead at 500ft or greater below them manoeuvring on the dead-side. The PA28 pilot reports that they maintained safe separation at a height of 900ft whilst maintaining VFR and continuous visual contact with the helicopter until past it; their pilot/passenger recalls at that point that they heard a call stating that an aircraft had passed overhead. The PA28 pilot then joined, via crosswind, downwind to RW10LH and landed. The

PA28 pilot recalls that at no time there had been any chance of a collision between the 2 aircraft, that they were in visual contact at all times with the helicopter, and there had been at least 500ft height difference between them. The helicopter circuit is described as at a max of 700ft and the published recommended dead-side level not below 1200ft. On this occasion, due to cloud, only 900ft could be achieved, however this is still 200ft above the helicopter circuit height. The airspace is not controlled or restricted, just advisory by the airfield (all actions were at pilots discretion).

The pilot opined that the [R44] pilot had been making an approach to RW10, (it had not been clear if this had been the asphalt runway or the grass runway used by helicopters) but as there had been no AFIS [sic] call or calls from the pilot i.e. downwind, final etc of any aircraft at the airfield other than the initial call of the helicopter landing on RW04 [they recall], and their own aircraft, they were totally unaware of any other traffic in the airfield circuit. Despite the considerable period that had elapsed from the date of the alleged Airprox and contact made to the PA28 pilot to respond to it, they and their pilot/passenger are totally confident that as no aircraft had made any position calls, [...] they believed the airspace at the airfield to have been completely clear and that there had been no traffic to conflict with the action that they took in light of the low cloud and poor visibility conditions. They note that they are a pilot with 34 years' experience and over 1200 hours of recreational flying [and have] visited the majority of GA airfields in the UK, Ireland and France. They state that they are well versed in the various procedures of each and have visited Leicester as pilot-in-command on many occasions. Their pilot/passenger has similar experience and hours and both feel that the action taken in the circumstances had been reasonable, safe and that no Airprox or danger to either aircraft occurred. However, in retrospect, the PA28 pilot accepts that, despite being convinced that there had been no traffic to conflict, a traffic call reporting their routing over the dead-side at 900ft should have been made. They also feel that the student pilot should be reminded of the need to make standard position calls at all times when at the airfield as, had they done so, they would have alerted the PA28 pilot of their presence and position.

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

THE LEICESTER A/G RADIO OPERATOR reports that they are a member of Leicestershire Aero Club and hold a Radio Operators Certificate of Competence endorsed to operate the Air/Ground radio at Leicester Airport. On Saturday 13th May 2023 they worked a 1200 to 1600 shift and took over from the morning operator in the tower shortly before 1200. The runway in use had been RW10. The visibility reported as 6km and the weather fine but overcast. There had been no cloudbase information, but recalled that it looked fairly low. One of the first calls had been from a PA28 stating that they were inbound to Leicester from the north-east and requesting airfield information. The A/G operator replied '[aircraft callsign] the runway in use is 10 with a left-hand circuit for fixed wing aircraft and a right-hand circuit for rotary. The QFE is 1010hPa.' [Aircraft callsign] repeated the information back correctly and added that 'they would do an overhead join.' The only other aircraft on frequency at that time were a club aircraft that had been landing and an R44 using the callsign [Student R44C/S]; the A/G operator did not know the registration of the aircraft. The R44 had been doing right-hand circuits on 10, with the final approach to the H situated in the centre of the airfield. The A/G Operator had been expecting the PA28 [pilot] to report overhead descending dead-side, but did not hear any further transmissions from the aircraft. Student [R44C/S] called downwind right-hand. The next call came from Student [R44C/S] calling 'Finals runway 10. That was a close one with the PA28.' The A/G operator passed the surface wind. The only PA28 on frequency at that time had been [PA28 C/S]. They saw behind them the R44 on finals approximately adjacent to the RW10 numbers and [PA28 C/S] crossing the RW28 numbers to go crosswind - it looked lower than normal circuit height. At this point they would be approximately 900m apart. The A/G operator did not understand what the Student [R44 C/S] pilot had been talking about with the 'that was a close one' comment. Prior to this they had not seen where the two aircraft were, or what had happened. Student [R44 C/S] landed at 1212 and taxied to park. [The PA28 pilot] called downwind and did a long downwind leg before landing at 1214.

Factual Background

The weather at East Midlands Airport was recorded as follows:

METAR EGNX 131150Z 05006KT 340V080 9999 BKN015 11/07 Q1028=

Analysis and Investigation

UKAB Secretariat

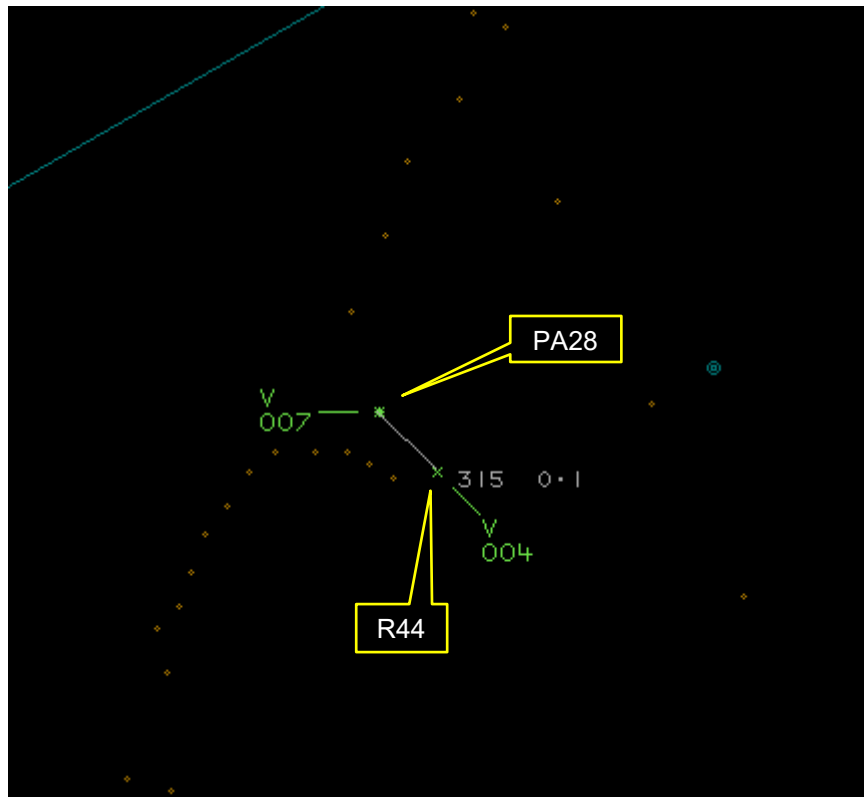


Figure 1: Radar tracked CPA 300ftV/0.1NM H 1210:26

The R44 had been equipped with an electronic warning system that had been triggered by the PA28 which, according to the R44 pilot's report, had enabled the R44 pilot to visually acquire the other aircraft at a late stage and take action to increase separation between the two. The PA28 pilot reports having been visual with the R44 throughout but, although both aircraft were on the AGCS frequency, the PA28 pilot made their initial call outside the ATZ and no further calls were heard by the Air/Ground Operator or R44 pilot until after the R44 pilot had declared an Airprox.

Airfield Information for Leicester is published as follows:

Circuit Height:

Fixed wing traffic at 1000ft QFE, rotary traffic at 700ft QFE

Circuit Directions:

10, 33, 22, 34, 24 – Left Hand Fixed Wing, Right Hand Rotary

28, 15, 04, 16, 06 – Right Hand Fixed Wing, Left Hand Rotary

Joining Instructions: Standard overhead joins preferred. Do not fly below 1200ft QFE on the dead-side to maintain separation from rotary traffic.

The R44 and PA28 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 An aircraft operated on or in the

¹ (UK) SERA.3205 Proximity.

vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in operation.²

Summary

An Airprox was reported when an R44 and a PA28 flew into proximity at Leicester airfield at 1210Z on Saturday 13th of May 2023. Both pilots were operating under VFR in VMC and in receipt of an Air/Ground Communications Service from Leicester Radio.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings and a report from the Air/Ground Operator involved. 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 considered the actions of the R44 (student) pilot. They noted that the pilot had made the correct calls at 'Downwind' and 'Final' positions and agreed that they had acted expeditiously in descending at the point they had received a warning from their TAS equipment (**CF7**). However, Members also noted that the point at which the R44 pilot had become visual with the PA28 had been late (**CF8**) and that they had then been concerned by its proximity (**CF9**).

Members went on to discuss the actions of the PA28 pilot. They noted the PA28 pilot's call for joining the airfield and also that neither the R44 pilot nor the AGO heard any further calls from the PA28 pilot until after the event had been signalled to the Air/Ground radio operator by the R44 pilot. Members noted the PA28 pilot's need to descend below the minimum prescribed join height of 1200ft (**CF1**) due to the 'worse than expected' weather at Leicester and that the pilot had been aware of the R44 in the circuit, but felt that perhaps the PA28 pilot could have announced on the radio the fact that they had been forced lower by the weather and that they could not have complied with the published joining procedure (**CF2**). Members also opined that it may have been more appropriate for the PA28 pilot to have adjusted their arrival to better suit the weather conditions and avoid flying to the south of the runway (**CF3**), particularly as the pilot had been familiar with operations and that the airfield operates both left and right-handed circuits for fixed-wing and rotary traffic. They opined that the PA28 pilot had not assimilated the R44 pilot's circuit position radio calls and had been unable to recognise that there had been a potential conflict (**CF6**). The Board members did feel that the PA28 pilot had made the correct decision to go around due to the weather and having recognised their inability at that stage to conform with the pattern in place and positioning of the R44 (**CF4**).

Members then discussed the role played by the Air/Ground Radio operator. They opined that, as an Air/Ground unit, the operator and pilots of circuit traffic place greatest reliance on the use of radio to build their situational awareness, and the reported lack of calls between the PA28 pilot's intention to join and the event being announced by the R44 pilot left little scope for greater input by the Air/Ground operator in this case, and generally poor situational awareness for the 2 pilots involved (**CF5**).

Members discussed the prevailing situation at Leicester, noting that it is traditionally a very busy airfield, with a combination of rotary and fixed-wing traffic, opposing circuit directions and the service currently offered as an Air/Ground Communications Service, and felt that a review of operations by the operator in the near-future might be appropriate, although the Board stopped short of making a Safety Recommendation in this regard.

When assessing the risk, members considered the reports from the pilots, the Air/Ground Radio operator and the radar replays available. They noted that the separation between the two aircraft had been reduced below that expected (and provisioned for in the joining procedures) and that, therefore, safety had been degraded, but that the PA28 pilot had maintained continuous visual contact with the

² (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome..

R44 and therefore there had been no risk of collision. Accordingly, the Board assigned a Risk Category C to this Airprox.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2023094			
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	• Accuracy of Communication	Events involving flight crew using inaccurate communication - wrong or incomplete information provided	Ineffective communication of intentions
3	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
4	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			
5	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
6	Human Factors	• Understanding/Comprehension	Events involving flight crew that did not understand or comprehend a situation or instruction	Pilot did not assimilate conflict information
	• Electronic Warning System Operation and Compliance			
7	Contextual	• Other warning system operation	An event involving a genuine warning from an airborne system other than TCAS.	
	• See and Avoid			
8	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
9	Human Factors	• Perception of Visual Information	Events involving flight crew incorrectly perceiving a situation visually and then taking the wrong course of action or path of movement	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: C

Safety Barrier Assessment³

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 Conflication and Action were assessed as **not used** because the Air/Ground Radio operator was not required to sequence the aircraft.

Flight Elements:

³ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

Regulations, Processes, Procedures and Compliance were assessed as **ineffective** because the PA28 pilot, driven by a low cloudbase, had flown on the deadside of the fixed-wing circuit below the prescribed 1200ft QFE minimum.

Tactical Planning and Execution was assessed as **ineffective** because the PA28 pilot had not broadcast their intention to join an active circuit below the prescribed minimum and had not conformed with traffic already in the pattern.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because both pilots had only generic situational awareness of the presence of the other aircraft (from RT calls) and the PA28 pilot had not assimilated that the R44 had been operating up to 700ft in the rotary circuit.

See and Avoid were assessed as **partially effective** because both pilots sighted the other aircraft at a later than optimum stage.

Airprox Barrier Assessment: 2023094		Outside Controlled Airspace		Effectiveness				
Barrier		Provision	Application	Barrier Weighting				
				0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance	✓	✓	[Green bar to 5%]				
	Manning & Equipment	✓	✓	[Green bar to 2.5%]				
	Situational Awareness of the Conflication & Action	✗	○	[Red bar to 15%]				
	Electronic Warning System Operation and Compliance	●	●	[Grey bar to 2.5%]				
Flight Element	Regulations, Processes, Procedures and Compliance	✓	✗	[Red bar to 10%]				
	Tactical Planning and Execution	✓	✗	[Red bar to 10%]				
	Situational Awareness of the Conflicting Aircraft & Action	⚠	⚠	[Yellow bar to 20%]				
	Electronic Warning System Operation and Compliance	⚠	✓	[Green bar to 15%]				
	See & Avoid	⚠	⚠	[Yellow bar to 20%]				
Key:		Full	Partial	None	Not Present/Not Assessable	Not Used		
Provision	✓	⚠	✗	●				
Application	✓	⚠	✗	●	○			
Effectiveness	[Green]	[Yellow]	[Red]	[Grey]	[Red box]			