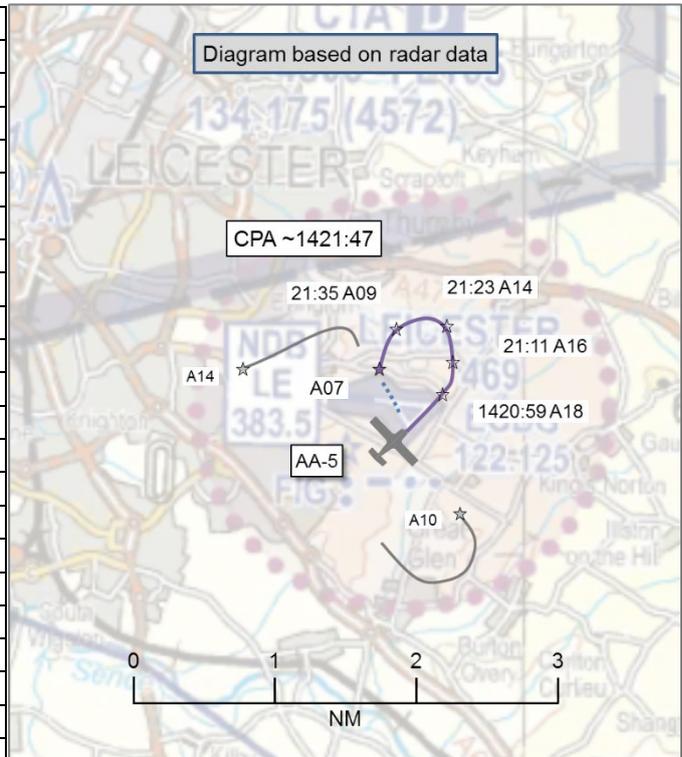


AIRPROX REPORT No 2019016

Date: 28 Jan 2019 Time: 1422Z Position: 5236N 00102W Location: Leicester aerodrome (469ft)

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	AA-5
Operator	Civ FW	Civ FW
Airspace	Leicester ATZ	Leicester ATZ
Class	G	G
Rules	VFR	VFR
Service	AGCS	AGCS
Provider	Leicester	Leicester
Altitude/FL	NK	800ft
Transponder	A, C, S	A, C, S
Reported		
Colours	White, blue	Red, green
Lighting	Strobes, nav	Strobe, landing
Conditions	VMC	VMC
Visibility	>25km	10km
Altitude/FL	500ft	1000ft
Altimeter	QFE (989hPa)	QNH (1031hPa)
Heading	330°	050°
Speed	75kt	100kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	100ft V/0m H	Not seen
Recorded	NK	



THE PA28 PILOT reports that he had just taken off from RW33 and was climbing out. He raised the flaps and, as he approached 600ft QFE, he checked he was clear to turn left onto crosswind. He then saw an aircraft pass right-to-left directly underneath. The other aircraft was well below circuit height and proceeded to join downwind ahead of another aircraft already in the circuit. The Airprox aircraft pilot had advised he was descending deadside (which the PA28 pilot had observed whilst on the ground as he completed a clearance turn before entering RW33 for departure). The PA28 pilot stated that had he not had the rate of climb that he did, he believed there could have been a direct conflict due to the other aircraft's low height as it crossed directly in front of traffic departing from RW33.

He assessed the risk of collision as 'High'.

THE AA-5 STUDENT PILOT reports conducting his first qualifying solo cross country flight. It was a clear-weather day with no clouds and good visibility. He did not see the other aircraft so he did not take any avoidance action. He only realised an Airprox had occurred when he was notified the next day.

THE A/G OPERATOR reports that the AA-5 pilot called for joining and landing information. He was advised that the active runway was RW33 left-hand for fixed-wing traffic, right-hand for rotary, and that the QFE was 989hPa. The AA-5 pilot read-back the information and his next call was 'descending deadside 33'. The PA28 pilot lined up on RW33, was passed the surface wind and took off.

Factual Background

The weather at East Midlands was recorded as follows:

METAR EGNX 281420Z 30013KT CAVOK 04/M05 Q1007=

Analysis and Investigation

UKAB Secretariat

The PA28 and AA-5 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard¹. 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 operation².

Summary

An Airprox was reported when a PA28 and an AA-5 flew into proximity at Leicester airfield at 1422hrs on Monday 28th January 2019. Both pilots were operating under VFR in VMC, both in receipt of an AGCS from Leicester Radio.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings (which did not show the PA28 until after CPA) and a report from the A/G 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 discussed the AA-5 pilot's overhead join. The Leicester AIP entry³ states,

'1 CIRCUITS

...

- b) The standard overhead join is preferred for fixed wing
- c) Fixed wing circuits will be at 1000 FT QFE.

...

- f) The standard fix wing join is overhead. Aircraft should not descend below 1200 FT QFE on the deadside due to the helicopter circuit below at 700 FT QFE.'

It was apparent from the radar replay that the AA-5 pilot had not flown a standard overhead join because he had descended from a height of 1300ft aal in the 'overhead' to about 900ft aal on the deadside and further to an estimated 230ft aal crosswind (**CF1, CF2, CF4**). Members commented that it was fortuitous there were no helicopters in the RW33 right-hand circuit at the time, and were perplexed that a pilot would descend to such a height in the visual circuit without realising that he was dangerously low. It appeared from the AA-5 pilot's report that he had no awareness of having done so and members discussed possible reasons. The student pilot would have been passed a QNH on departure from his home airfield (the London QNH was 1008hPa), and would then have been passed the airfield details when he contacted Leicester. The student should have set the Leicester QFE (989hPa) but reported setting 1031hPa. The Board surmised that he probably conflated the runway heading with the QFE, setting 1031hPa instead of 989hPa (**CF3**). This would have caused the altimeter to overread by about 1100ft.

Having probably completed his join 'by the numbers' rather than visually assessing his height as well, the AA-5 pilot ended up passing below the PA28 from right-to-left and so did not integrate with the pattern of traffic already in the visual circuit (**CF6**). Although the PA28 pilot had observed the AA-5 descending deadside, his SA on the AA-5 was not sufficient to alert him to its height as he subsequently climbed out because he would not have expected the AA-5 pilot to have flown the profile he did (**CF5**). Members noted that he re-sighted the AA-5 at a late stage (**CF8**), and that the AA-5 pilot reported not seeing the PA28 (**CF7**). The Board therefore agreed that although avoiding action had not been required because the PA28 pilot was already climbing, the achieved separation was such that safety had been much reduced below the norm.

¹ SERA.3205 Proximity.

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

³ EGBG AD 2.22 FLIGHT PROCEDURES

PART C: ASSESSMENT OF CAUSE AND RISK**Contributory Factors:**

CF	Factor	Description	Amplification
	Flight Elements		
	• Regulations, Processes, Procedures and Compliance		
1	Human Factors	• Flight Crew ATM Procedure Deviation	Regulations/procedures not complied with
	• Tactical Planning and Execution		
2	Human Factors	• Incorrect Decision/Plan	Incorrect or ineffective execution
3	Human Factors	• Operation with Incorrect Altimeter Setting	
4	Human Factors	• Aircraft Navigation	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	Pilot had no, or only generic, Situational Awareness
6	Human Factors	• Monitoring of Other Aircraft	Pilot did not sufficiently integrate with the other aircraft
	• See and Avoid		
7	Human Factors	• Monitoring of Other Aircraft	Non-sighting by one or both pilots
8	Human Factors	• Monitoring of Other Aircraft	Late-sighting by one or both pilots

Degree of Risk: B.

Recommendation: Nil.

Safety Barrier Assessment⁴

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 an AGCS does not have provision for this barrier.

Flight Elements:

Regulations, Processes, Procedures and Compliance were assessed as **ineffective** because the AA-5 pilot did not fly the overhead join correctly.

Tactical Planning and Execution was assessed as **ineffective** because the AA-5 pilot descended to a low level and flew crosswind below the notified circuit height.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because although the correct radio calls were made, the PA28 pilot did not know that the AA-5 pilot had descended to below circuit height.

See and Avoid were assessed as **partially effective** because although the PA28 pilot had a late sighting of the AA-5, no avoiding action was required because he was already in the climb.

⁴ 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: 2019016		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</u>	<u>Not Used</u>		
Provision	✓	!	✗	●				
Application	✓	!	✗	●		○		
Effectiveness								