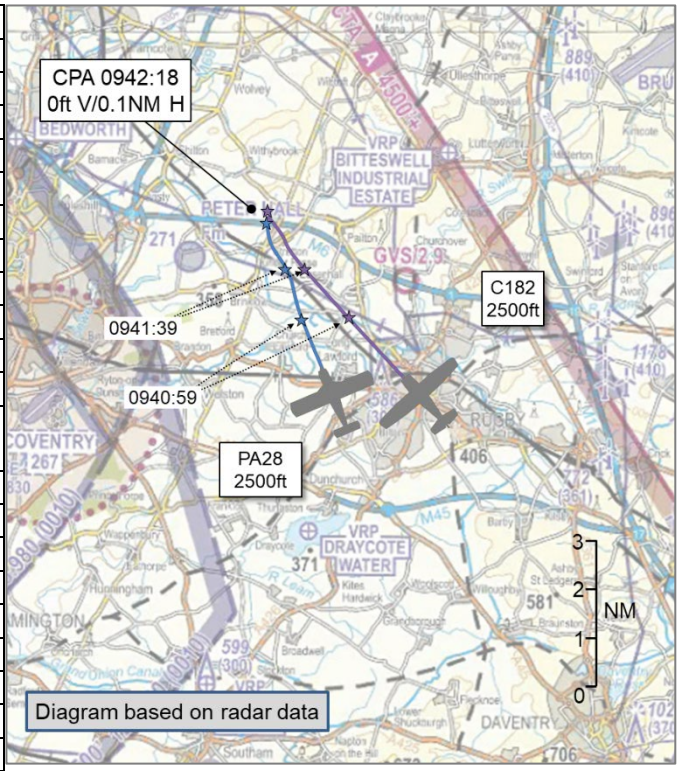
AIRPROX REPORT No 2021034

Date: 24 Apr 2021 Time: 0942Z Position: 5226N 00121W Location: 3NM SE Nuneaton

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	C182
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Listening Out
Provider	East Midlands	Birmingham
Altitude/FL	2500ft	2500ft
Transponder	A, C	A, C, S
Reported		
Colours	Blue, White	White, Blue
Lighting	Anti-cols, Nav	Strobes, Nav, Beacon
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2500ft	2500ft
Altimeter	QNH (1029hPa)	QNH
Heading	135°	317°
Speed	90kt	120kt
ACAS/TAS	SkyEcho	Not fitted
Alert	None	N/A
Separation		
Reported	0ft V/100m H	2-300ft V/200ft H
Recorded	0ft V/0.1NM H	



THE PA28 PILOT reports that they were flying straight and level when a C172-type aircraft climbed from below and behind and crossed 100m directly in front of their aircraft. It was too late and too fast to take any avoiding action. They reported the near miss immediately to air traffic control, who replied that they were on a Basic Service and responsible for see-and-avoid and that the controller would take details in a moment, which after a few minutes they did.

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

THE C182 PILOT reports that they were on a second solo-student Nav-Ex, they were level at 2500ft. They were visual with an aircraft 3NM ahead before they reached Rugby, but it was tracking 90° across their path towards the Birmingham controlled airspace so they passed behind. When they had passed Rugby they saw the aircraft again out of the left window, around 2-3NM away. They then kept the aircraft out of the left window. It was slightly above and they were travelling faster, so they kept the other aircraft in sight until they were ahead and no longer visual. At this point, they assumed the other pilot would follow the rules of the air and give way to the right, passing above and behind the C182. They then heard about the Airprox from Birmingham Radar around 5 minutes later. The controller claimed [the C182 pilot] climbed through [the PA28's] altitude, but the flight data backs up that they hadn't changed altitude throughout the flight up to that point. Upon speaking to Birmingham they said the C182 was showing at 2600ft, but the altimeter was showing 2500ft, so possibly they deemed the vertical separation to be less than it was.

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

THE EAST MIDLANDS CONTROLLER reports that they were the Radar controller operating a combined Approach and LARS. [PA28 C/S] called East Midlands Radar and requested a Basic Service. A LARS Basic Service squawk was given and the pilot acknowledged the Basic Service. The controller

was on the landline to TC WELIN, taking a radar handover on a training flight inbound to East Midlands when [the PA28 C/S] called "Airprox." This was acknowledged and the pilot was reminded that they were on a Basic Service and responsible for their own lookout. The frequency was busy and the details were passed a short time later when there was a minor lull in RT loading. The pilot of [PA28 C/S] reported the Cessna climbed up from underneath him and passed 300ft in front. The likely aircraft was seen to be wearing a Birmingham listening out squawk and the Birmingham controller established and passed the aircraft's details, the pilot reported to Birmingham that they had maintained 2500ft since Banbury.

Factual Background

The weather at East Midlands was recorded as follows:

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METAR EGNX 240920Z 08007KT 030V100 CAVOK 11/M00 Q1029=
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Analysis and Investigation

CAA ATSI

The PA28 pilot was transiting south to north, VFR, through the gap between Birmingham and East Midlands controlled airspace, at altitude 2500ft, and was in receipt of a Basic Service from East Midlands Radar.

The C182 pilot was on their 2nd solo student navigation flight and was operating VFR, at altitude 2500ft. The pilot was not in receipt of an ATC service but was listening out on the Birmingham Radar frequency, and transponding code 0010.

ATSI had access to the reports from the pilots of both aircraft and the occurrence report from the East Midlands controller. The RTF and Area radar recordings were reviewed for the period leading up to the event. Screenshots in this report have been taken from the NATS Area Radar and are not indicative of the radar picture being presented to the controller at the time of the event.

The East Midlands controller report indicated that the PA28 pilot initially advised them of the Airprox while the controller was on the landline, accepting a radar handover on an inbound IFR training flight. The initial report was acknowledged and when a sufficient gap in RTF transmissions was available, the pilot was invited to pass the details of the Airprox.

The controller was providing combined Approach Radar and LARS at the time of the Airprox. The frequency was busy in the lead up to the event, and the controller was dealing with IFR and VFR inbounds, an IFR training flight and VFR transit aircraft, one of which was a student pilot. In the interest of brevity, only the RT exchanges between the PA28 pilot and the controller have been included in this report.

At 09:36.50 the PA28 pilot made initial contact with the East Midlands controller and requested a Basic Service. A Basic Service was agreed, and the controller passed a QNH of 1029 and asked the pilot to say again their altitude and position. The pilot read back QNH 1029 and confirmed that they were at altitude 2500ft, and now 3NM south of Draycot Water. The controller turned their attention to other aircraft.

At 09:38.00 the controller confirmed the Basic Service again and instructed the PA28 pilot to squawk 4571 (Figure 1). Both aircraft were approximately 32NM south of East Midlands Airport and are likely to have been close to the edge of the controller situational display.

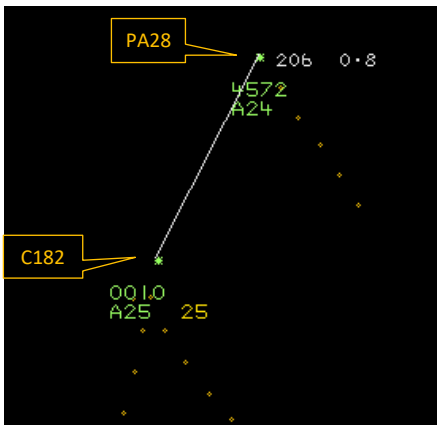


Figure 1 - 09:38.00

The controller then turned their attention to other aircraft. The following screenshots display the progress of the aircraft, leading up to CPA occurring.

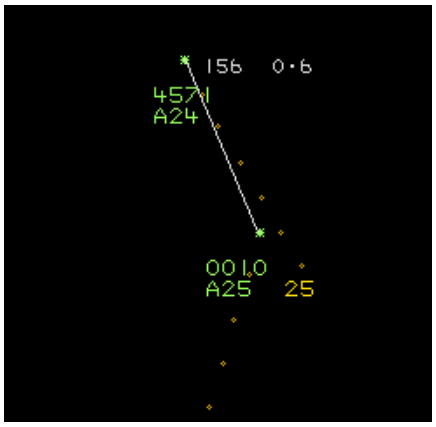


Figure 2 – 09:38.22

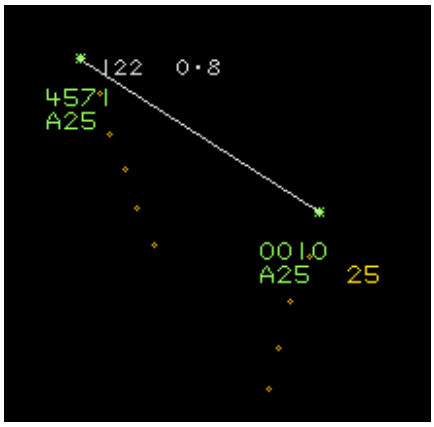


Figure 3 – 09:38.47

Figure 4 – 09:41.50

At 09:42.15 CPA occurred, with the two aircraft displayed at the same altitude and 0.1NM apart.

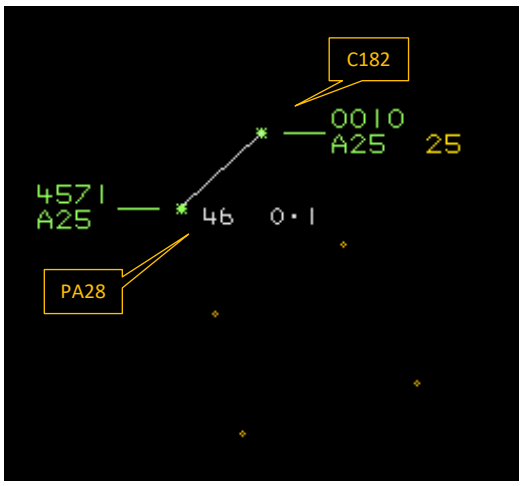


Figure 5 – 09:42.15 CPA

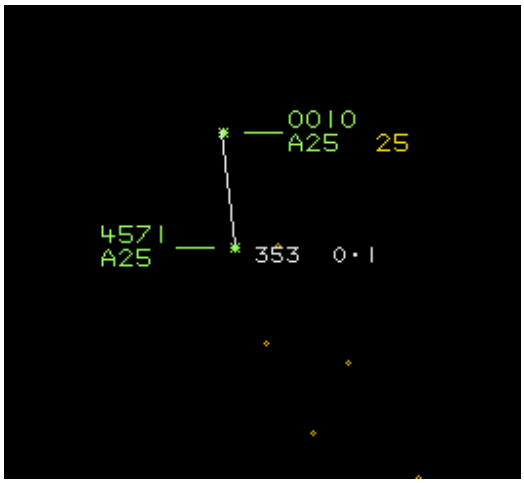


Figure 6 – 09:42.27

At 09:42.40 the PA28 pilot transmitted *"Airprox (callsign)".* The controller responded with, *"(callsign) pass your message"*. The pilot advised that they had just had a near miss with a Cessna type aircraft that had come up right in front of the aircraft's nose. The controller reminded the pilot that they were under their own lookout, on a Basic Service. The pilot acknowledged this and advised that they were just letting someone know. The controller was on the landline to the WELIN Sector, accepting a radar handover, and advised the pilot to standby and that they would come back to them shortly.

The controller completed the radar handover and turned their attention to vectoring an IFR inbound aircraft approaching the ILS, dealing with an inbound IFR training flight, passing Traffic Information to a transit aircraft and terminating the service on a VFR transit flight.

At 09:46.50 the controller turned their attention back to the PA28 pilot and asked them to pass the details of the Airprox. The pilot advised that a high wing Cessna type light aircraft had come up from underneath them, in front of the aircraft, and had missed them by about 300ft. The controller acknowledged the details and asked for an approximate location. The pilot responded that they had been at Nuneaton.

CAP 493 Section 1, Chapter 1, Paragraph 3.2 requires that where air traffic service units provide both flight information service and air traffic control service, the provision of air traffic control service shall have precedence over the provision of flight information service, whenever the provision of air traffic control service so requires (SERA.9001 (c)).

CAP 774 states the following:

> Given that the provider of a Basic Service is not required to monitor the flight, pilots should not expect any form of traffic information from a controller/FISO. A pilot who considers that he requires a regular flow of specific traffic information shall request a Traffic Service.

And

> If a controller/ FISO considers that a definite risk of collision exists, a warning shall be issued to the pilot (SERA.9005(b)(2) and GM1 SERA.9005(b)(2)).

The controller was not required to monitor the flight of the PA28, and was busy delivering air traffic control services to their IFR inbound and IFR training traffic, as well as coordinating the VFR inbound traffic with the Aerodrome controller and accepting a radar handover from an adjacent ATC unit. Much of their attention was required to be focussed close to the airfield, to ensure ILS capture for the IFR traffic and safe integration of the inbound VFR traffic.

Under a Basic Service, whether Traffic Information has been provided or not, the pilot remains responsible for collision avoidance without assistance from the controller.

UKAB Secretariat

The PA28 and C182 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] If the incident geometry is considered as overtaking then the PA28 pilot had right of way and the C182 pilot was required to keep out of the way of the other aircraft by altering course to the right and no subsequent change in the relative positions of the two aircraft shall absolve the overtaking aircraft from their obligation until it is entirely past and clear.[2]

Summary

An Airprox was reported when a PA28 and a C182 flew into proximity at Nuneaton at 0942Z on Saturday 24th April 2021. Both pilots were operating under VFR in VMC, the PA28 pilot in receipt of a Basic Service from East Midlands Radar and the C182 pilot was not in receipt of an ATS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings and reports from the air traffic controllers 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.

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 looked at the actions of the PA28 pilot. They were receiving a Basic Service from East Midlands and under the provision of a Basic Service the controller was not required to monitor the flight and so they did not receive Traffic Information (**CF1**). Although the pilot was using SkyEcho, it did not alert to the aircraft approaching from behind and members thought this was probably due to aerial blanking (**CF5**). However, this resulted in the pilot not having any situational awareness that the C182 was approaching from behind (**CF4**), and the angle from which the C182 approached meant that the pilot did not see the C182 until it was ahead of him (**CF8**, **CF9**). The Board praised the pilot for reporting the Airprox over the RT because, in alerting ATC, it enabled the unit to preserve the RT and radar data.

Turning to the actions of the C182, they were visual with the PA28 for some time as they tracked northbound on their Nav-ex. Some members wondered why the pilot had not taken an early decision to change their heading by a few degrees to ensure a greater separation, however, those with flying instructor experience noted that students very often become fixated with remaining on heading, worried that they may get lost if they deviate from track. Nevertheless, members thought that this came down to airmanship, in that by remaining on heading and overtaking the PA28 in such close proximity, the C182 pilot had caused concern by surprising the PA28 pilot as they appeared ahead of them (**CF6**, **CF7**). As the overtaking aircraft, the C182 pilot was required to remain clear of the PA28 until they had entirely passed (**CF2**) and members noted that the pilot had misunderstood the regulation, in that their obligation to remain clear did not stop once they were alongside the PA28 (**CF3**). For an easy to understand explanation of the overtaking rule, pilots were encouraged to look in the Skyway Code[3].

The Board briefly discussed the role that ATC had to play. They noted that the PA28 was receiving a Basic Service from East Midlands and the C182 was listening out on the Birmingham frequency and wearing a monitoring squawk. The East Midlands controller was busy controlling inbound aircraft and the position of the Airprox was some way from East Midlands in an area that would not have been the focus of their attention, consequently the controller did not see the confliction. Members noted that it was difficult to know who was the best option to provide a service in the area, but that East Midlands was the LARS provider. Furthermore, pilots were encouraged to request a Traffic Service if Traffic

[1](UK) SERA.3205 Proximity.
[2](UK) SERA.3210 Right-of-way (c)(3) Overtaking.
[3] CAA Skyway Code

Information was required. Pilots were also reminded that wearing a listening squawk and monitoring a frequency did not provide any ATS at all, but would allow controllers to monitor aircraft routing close to, and hopefully prevent infringement of, CAS.

When assessing the risk some members felt that the close proximity of the two aircraft, with only 0.1NM separation at the same level, described an incident where there had been a risk of collision. However, others countered that the C182 pilot was visual with the PA28 as they approached from behind, until the point that they pulled ahead due to being the faster aircraft. Therefore, whilst acknowledging that it would have come as a surprize to the PA28 pilot, the nature of the encounter meant that the two aircraft could not have collided. The latter view prevailed and the Board agreed that although safety had been degraded, there had been no risk of collision; Risk Category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2021034			
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
	Flight Elements			
x	**• Regulations, Processes, Procedures and Compliance**			
2	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			
3	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			
4	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			
5	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			
6	Human Factors	• Incorrect Action Selection	Events involving flight crew performing or choosing the wrong course of action	Pilot flew close enough to cause concern
7	Contextual	• Loss of Separation	An event involving a loss of separation between aircraft	Pilot flew into conflict
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

Degree of Risk: C.

Safety Barrier Assessment[4]

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

Flight Elements:

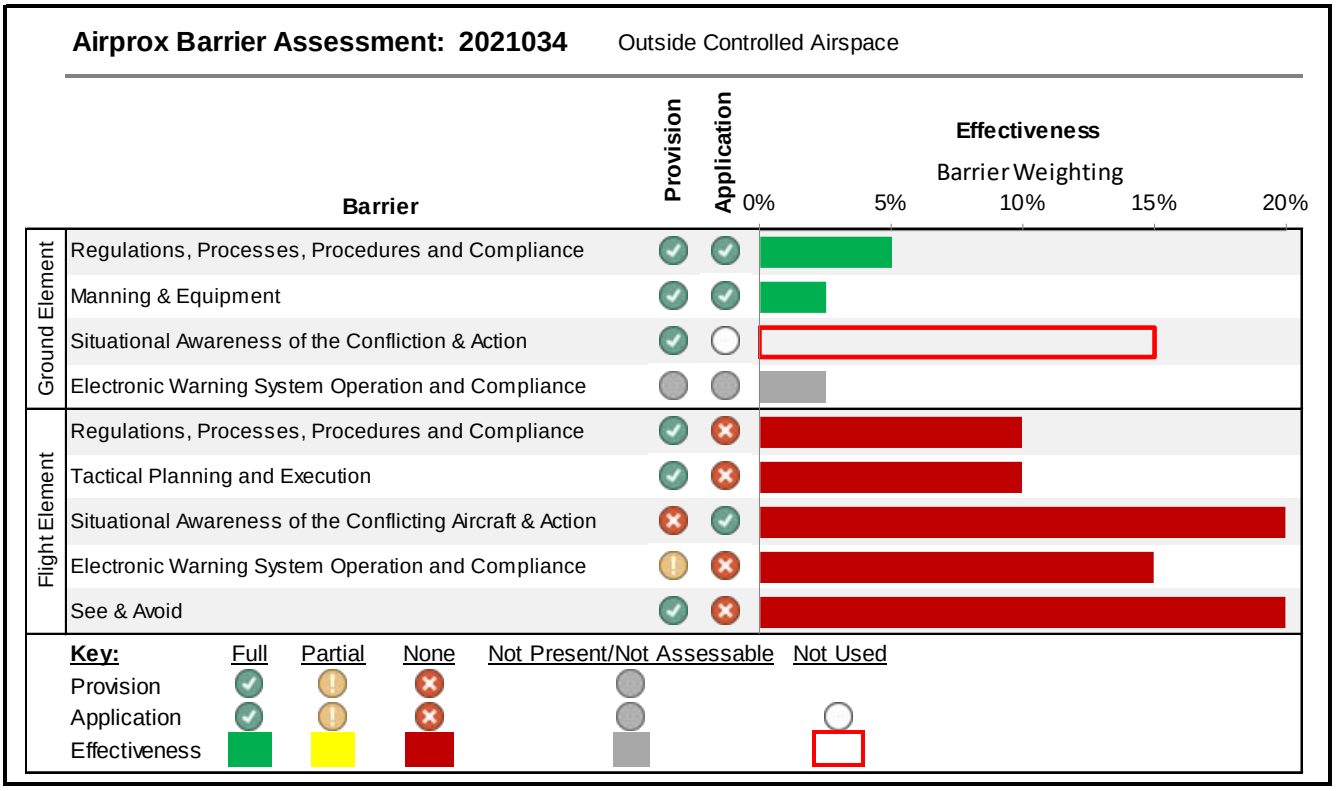
Regulations, Processes, Procedures and Compliance were assessed as **ineffective** because the C182 pilot did not continue to give way whilst overtaking.

Tactical Planning and Execution was assessed as **ineffective** because the C182 perceived that the PA28 would give way once they were on the right, when in fact the overtaking regulation still applied.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the PA28 pilot had no situational awareness that the C182 was overtaking.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the SkyEcho in the PA28 did not alert as expected.

See and Avoid were assessed as **ineffective** because the PA28 pilot did not see the C182 in time to take avoiding action and the C182 pilot did not allow sufficient separation as they overtook the PA28.



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