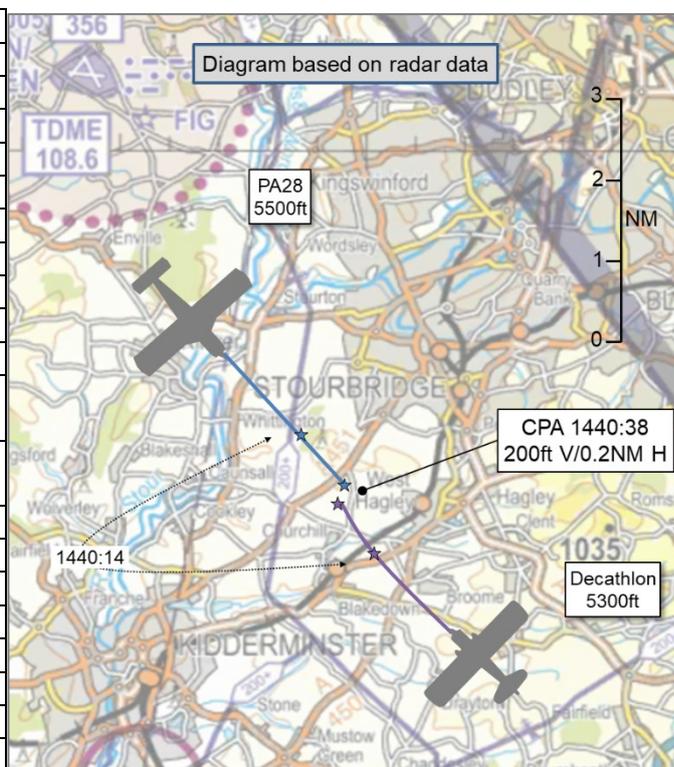


AIRPROX REPORT No 2021131

Date: 23 Jul 2021 Time: 1441Z Position: 5225N 00210W Location: 2.6NM E Kidderminster

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	Decathlon
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Listening Out	Listening Out
Provider	Birmingham	Birmingham
Altitude/FL	5500ft	5300ft
Transponder	A, C, S	A, C, S
Reported		
Colours	White, Yellow, Red	White, Red
Lighting	Strobes, Anti-Cols, Landing, Beacon	Beacon
Conditions	VMC	VMC
Visibility	>10km	NR
Altitude/FL	5600ft	NK
Altimeter	QNH (1016hPa)	NK
Heading	140°	310°
Speed	127kt	105kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	'Below'	200ft V/300m H
Recorded		200ft V/0.2NM H



THE PA28 PILOT reports they departed Hawarden VFR on a Basic Service en-route. They levelled at 1900ft owing to a scattered/broken cloud base at about 2200ft. Visibility was pretty poor (around 8KM) and they decided to climb above the weather. They upgraded to a Traffic Service, and requested an IFR climb from Hawarden to 5500ft (chosen in accordance with the semi-circular rule for their heading). Hawarden passed some Traffic Information which led them to initially climb to 4000ft and once clear they continued climb to 5500ft where conditions were VMC, with an estimated cloud top at 4000-4500ft, visibility of 10-15km. With Shawbury LARS NOTAM'd as closed, they stayed with Hawarden for as long as they could on a Traffic Service until south-east of Shawbury, then with no other LARS service available, they switched to the Birmingham Listening Squawk as they would be operating underneath the Birmingham CTA (base FL065). Workload was light, and they felt lookout was good, however 3-4 miles east of Kidderminster they saw a flash of colour in their peripheral vision to the right, underneath the starboard wing. Their passenger said they'd seen an aircraft flash by also, noting the colour as white and red. The passenger estimated that it had been between the cloud top (about 4500ft) and the PA28 (5500ft). The pilot thought that, based on the brief sighting, it was very close to them and they did not have time to take avoiding action. Following the encounter, they reviewed their actions and weren't sure what more they could have done to avoid the Airprox. They were outside the range of Brize and East Midlands LARS, a Basic Service from London Information was the only other service available, which provides very limited situational awareness, Birmingham doesn't offer a LARS and the controller was heard being curt with other GA traffic calling up for zone transits and they had chosen the level to improve their visibility and to make use of the protection the semi-circular rule can sometimes offer. All their lights had been left on deliberately. They pondered whether the position of the aircraft in relation to them (low, starboard), meant that their view of it was blocked by the height of the instrument panel to the right of them. This corner of the cockpit limits views below and to the right. The passenger may have had a view of this corner and had been calling out traffic to the pilot as requested, but did not sight this conflict. Being a group aircraft, it does not have a conspicuity device and while the pilot had used

them before, they had found them to be of inconsistent value owing to a mix of standards and cockpit configurations which offers varying effectiveness. That being said, in the meantime they intended to purchase one of the conspicuity devices as they recognised they do offer some protection.

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

THE DECATHLON PILOT reports that they commute regularly between Chester and London, and consequently did not clearly recall the precise details. They noted that they tried to select unusual cruise levels (avoiding whole thousands of feet) and avoided obvious hotspots. By the time they saw the other aircraft, the pilot had already altered course [they believed], and from that point on there was nil risk of collision, although they thought it may have been higher before the change of course occurred.

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

Factual Background

The weather at Birmingham was recorded as follows:

METAR EGBB 231420Z 09011KT 9999 SCT022 21/15 Q1016=

Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radars was undertaken and both aircraft were displaying in primary and secondary radar. Both were squawking 0010, the Birmingham listening squawk. Listening squawks are intended to allow an air traffic controller the opportunity to alert a pilot if they were about to infringe controlled airspace (but there can be no guarantee that pilots will always be warned), and does not imply any form of ATC service is being provided. The aircraft were on reciprocal headings, the PA28 indicated a height of 5500ft and the Decathlon 5300ft, see Figure 1. Figures 2-4 show the two aircraft as they closed and then passed 200ft and 0.2NM apart.

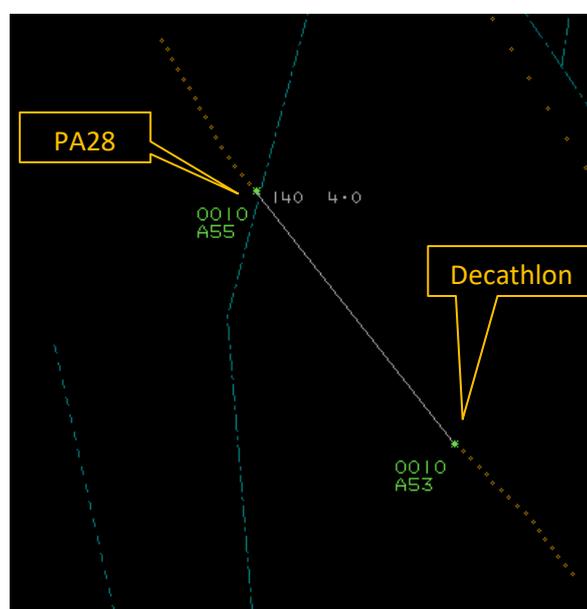


Figure 1: 1439:43

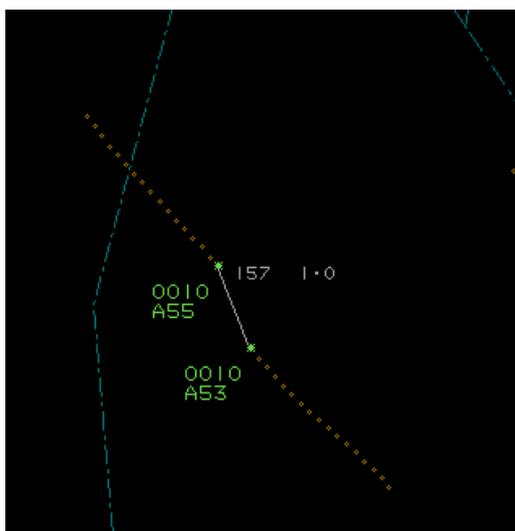


Figure 2: 1440:26

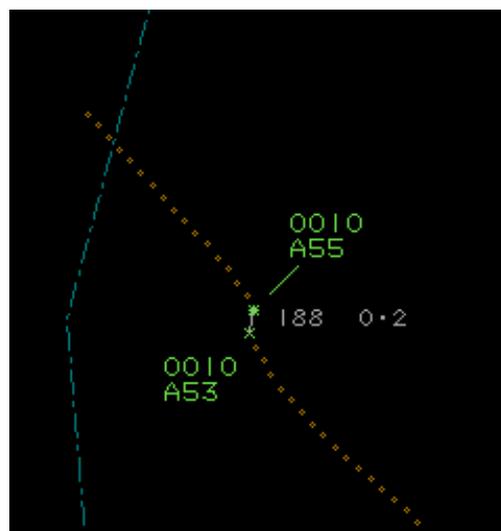


Figure 3: 1440:38

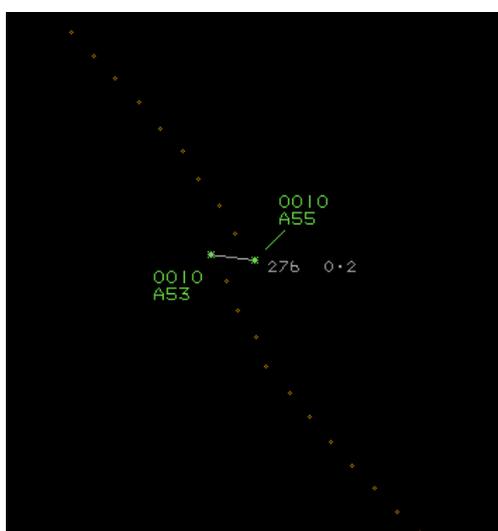


Figure 4: 1440:42

The PA28 and Decathlon 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 head-on or nearly so then both pilots were required to turn to the right², however SERA.3205 still applies.

Summary

An Airprox was reported when a PA28 and a Decathlon flew into proximity in the vicinity of Kidderminster at 1440Z on Friday 23rd July 2021. Both pilots were operating under VFR in VMC, neither pilot was in receipt of an ATS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots and radar photographs/video recordings. 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.

¹ (UK) SERA.3205 Proximity.

² (UK) SERA.3210 Right-of-way (c)(1) Approaching head-on.

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 discussed the actions of the PA28 pilot. They noted that there was no obvious LARS provider in the area. Some members, noting the pilot's comment about hearing the Birmingham controller being curt with other pilots, wondered whether this had put off the pilot from calling to request a service, however given that Birmingham did not provide a LARS, they may not have received a service even if they had called. Whilst there was nothing within either pilot report to suggest that the pilots did not know what they were receiving on this occasion, members wished to remind pilots that displaying a listening squawk did not imply any service from an ATC unit, the purpose of the squawk was to allow ATC to call pilots if they believed a pilot may be about to infringe CAS. In this event, with both pilots only listening out on the frequency, neither received any situational awareness about the other (**CF1**). Members commended the PA28 pilot for their TEM planning and for choosing to fly at a semi-circular level. Without any prior situational awareness, and no CWS in either aircraft, see and avoid was the final barrier. In the event the PA28 pilot saw the other aircraft too late to take any avoiding action (**CF2**).

Turning to the Decathlon pilot, they were also listening out on the Birmingham frequency and displaying a listening squawk. Members thought that although flying at unusual levels was a good idea, had the pilot been flying at the correct semi-circular level there would have been even more separation between the two aircraft. Similarly to the PA28 pilot, the Decathlon pilot did not have any CWS and without an ATS had no situational awareness about the PA28 (**CF1**), until they saw it, again too late to take any avoiding action (**CF2**).

The Board then discussed the lack of LARS provision, noting that some ATSU's had dropped their commitment to providing a LARS and that the closure of RAF units had exacerbated the situation. Controlling members noted that the money given to units to provide a LARS did not cover the cost of a dedicated controller, which meant units were taking on extra risk without any benefits; one of the many reasons why units might be giving up their LARS commitment. Members felt that the LARS capability badly needed investment and that the lack of an available ATS contributed to this Airprox. They were told by the Chair that the CAA were currently investigating LARS provision in the UK and the feasibility of such a dedicated service as opposed to the current system which (when present) is only delivered where spare capacity is available.

Finally, in determining the risk, members considered the reports of both pilots and the radar screenshots. They thought that although both pilots saw the other aircraft late and so safety had been degraded, the separation was such that there had been no risk of collision; Risk Category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2021131			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
	Flight Elements			
	• Situational Awareness of the Conflicting Aircraft and Action			
1	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
	• See and Avoid			
2	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

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:

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither pilot had any situational awareness that the other aircraft was in the vicinity until they saw it.

See and Avoid were assessed as **ineffective** because neither pilot saw the other aircraft in time to materially affected the separation prior to CPA.

Airprox Barrier Assessment: 2021131		Outside Controlled Airspace		Effectiveness																			
Barrier		Provision	Application	0%	5%	10%	15%	20%															
Ground Element	Regulations, Processes, Procedures and Compliance	●	●	[Bar chart showing 5% effectiveness]																			
	Manning & Equipment	●	●	[Bar chart showing 5% effectiveness]																			
	Situational Awareness of the Confliction & Action	●	●	[Bar chart showing 15% effectiveness]																			
	Electronic Warning System Operation and Compliance	●	●	[Bar chart showing 5% effectiveness]																			
Flight Element	Regulations, Processes, Procedures and Compliance	●	●	[Bar chart showing 10% effectiveness]																			
	Tactical Planning and Execution	●	●	[Bar chart showing 10% effectiveness]																			
	Situational Awareness of the Conflicting Aircraft & Action	✘	●	[Bar chart showing 20% effectiveness]																			
	Electronic Warning System Operation and Compliance	●	●	[Bar chart showing 15% effectiveness]																			
	See & Avoid	✘	✘	[Bar chart showing 20% effectiveness]																			
Key: <table border="0" style="display: inline-table; vertical-align: middle;"> <tr> <td>Full</td> <td>Partial</td> <td>None</td> <td>Not Present/Not Assessable</td> <td>Not Used</td> </tr> <tr> <td>●</td> <td>●</td> <td>✘</td> <td>●</td> <td>○</td> </tr> <tr> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> </tr> </table>									Full	Partial	None	Not Present/Not Assessable	Not Used	●	●	✘	●	○	■	■	■	■	■
Full	Partial	None	Not Present/Not Assessable	Not Used																			
●	●	✘	●	○																			
■	■	■	■	■																			

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