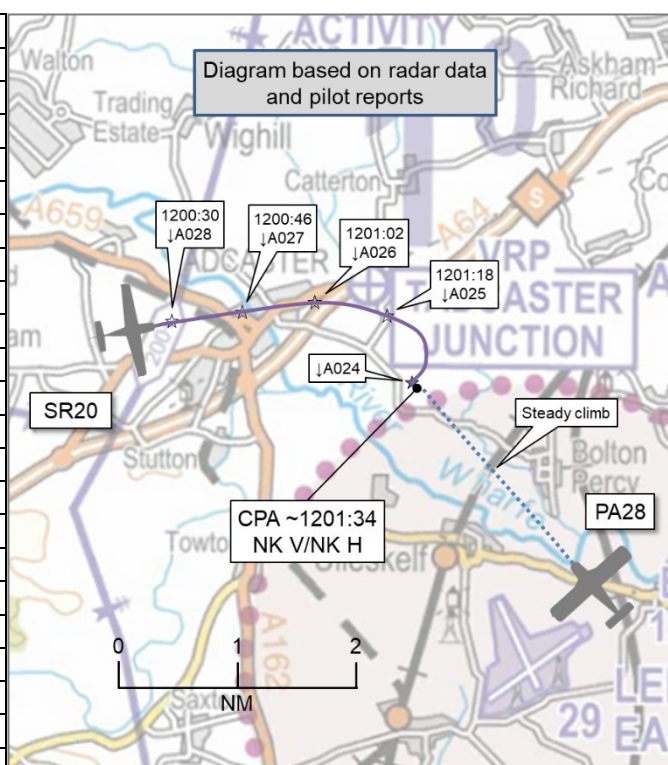


## AIRPROX REPORT No 2022175

Date: 12 Aug 2022 Time: ~1202Z Position: ~5353N 00113W Location: 1.5NM E Tadcaster

### PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	SR20
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	AGCS	AGCS
Provider	Fenton Radio	Fenton Radio
Altitude/FL	NK	2400ft
Transponder	None <sup>1</sup>	A, C, S
Reported		
Colours	White, Blue	White, Blue
Lighting	Anti-Cols	Strobes, Landing
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1900ft	1300ft
Altimeter	QNH (1020hPa)	QFE (NK hPa)
Heading	340°	225°
Speed	80kt	100kt
ACAS/TAS	SkyEcho	Not fitted
Alert	None	N/A
Separation at CPA		
Reported	20ft V/0m H	0ft V/300ft H <sup>2</sup>
Recorded	NK V/NK H	



**THE PA28 PILOT** reports that they were climbing out of Leeds East, following the local procedure of leaving the zone via one of the VRPs, climbing to 2000ft, on an exercise to teach stalling. They had departed RW06 and were leaving via Tadcaster. Their student was flying when they caught sight of the Cirrus, in a wide left-hand downwind position. Due to the time available, they took control and used full controls to pitch the aircraft down, avoiding the Cirrus by approximately 20ft. They didn't report the incident at the time, ([this was] considered retrospectively) because of the startle factor and concern for the student's welfare.

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

**THE SR20 PILOT** reports that they were arriving into Leeds East on a VFR flight plan. [They had] crossed Leeds Bradford airspace at 4400ft. On leaving Class D [airspace, they] changed to Fenton Radio for airfield information and descended via Tadcaster Junction for a left base join for RW06. They passed Tadcaster Junction at 2400ft and descended outside the zone and then joined left base at 1000ft. They did not see the other aircraft but their passenger saw it to their left and climbing. The conflicting traffic passed them during their descent from Tadcaster Junction to the left base turn and was departing the zone to the northwest. During the time they were in contact with Fenton Radio, they didn't hear any radio traffic from other aircraft. Upon landing they discussed the incident with the Fenton Air/Ground radio operator.

<sup>1</sup> The PA28 pilot reported having a Mode AC transponder fitted, however this was not detected by the NATS radar.

<sup>2</sup> The SR20 pilot in command did not visually acquire the PA28, however their passenger did become visual and provided the estimated separation.

**THE FENTON AIR/GROUND RADIO OPERATOR** reports that on that day, all aircraft entering and leaving the ATZ were given runway in use and either QFE or QNH. They don't recall any radio calls regarding this incident.

The log has [the PA28] taking off 1156 and [the SR20] landing at 1206.

## Factual Background

The weather at Leeds Bradford was recorded as follows:

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METAR EGNM 121150Z 07006KT 020V120 CAVOK 26/12 Q1021
METAR EGNM 121220Z 11007KT 060V150 CAVOK 27/11 Q1021
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## Analysis and Investigation

### UKAB Secretariat

An analysis of the NATS radar replay was undertaken. The SR20 was detected and their descent and arrival track aligned with the description from the pilot report. The PA28 was not detected by the NATS radar and so their track, as depicted in the diagram, is an estimation based on pilot reports. In the absence of recorded track information it has not been possible to determine an exact time of CPA or to measure the separation.

The Leeds East Airport (LEA) UK AIP entry section AD 2.20 Local aerodrome regulation, section 4 Warnings, b, states:

*Pilots are to join and depart via the aerodrome VRPs, joining the visual circuit from the crosswind, downwind, base or finals. No deadside or overhead joins due to the conjoined ATZ with Sherburn in Elmet airfield to the south.*

The Leeds East Airport (LEA) UK AIP entry section AD 2.22 flight procedures, section 2 VFR flights states:

*Arrival Procedures:*

*The arrival procedures for traffic arriving at LEA will be via VFR reporting points at 1500 FT AAL.*

*Departure Procedures:*

*VFR departures from Runway 06 will be via the appropriate LEA VFR reporting point, at 2000 FT AAL before turning on track.*

The elevation of Leeds East Airport is stated as 29ft amsl.

The PA28 and SR20 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.<sup>3</sup> If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right.<sup>4</sup> When two aircraft are converging at approximately the same level, the aircraft that has the other on its right shall give way.<sup>5</sup> When an aircraft carries a serviceable SSR transponder, the pilot shall operate the transponder at all times during flight, regardless of whether the aircraft is within or outside airspace where SSR is used for ATS purposes.<sup>6</sup>

<sup>3</sup> (UK) SERA.3205 Proximity.

<sup>4</sup> (UK) SERA.3210 Right-of-way (c)(1) Approaching head-on.

<sup>5</sup> (UK) SERA.3210 Right-of-way (c)(2) Converging.

<sup>6</sup> (UK) SERA.13001. Operation of an SSR transponder.

## Summary

An Airprox was reported when a PA28 and an SR20 flew into proximity 1.5NM east of Tadcaster at 1202Z on Friday 12<sup>th</sup> August 2022. Both pilots were operating under VFR in VMC, both pilots in receipt of an AGCS from Fenton 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 Radio 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.

The Board first considered the actions of the PA28 pilot and members were encouraged that the pilot had been utilising additional EC equipment to help to enhance their awareness of traffic in the area; however, the Board noted that it had not been compatible with the equipment fitted to the SR20 (**CF4**), and so no alert had been generated. Members discussed that, although both the PA28 pilot and the SR20 pilot had been on the same frequency, the PA28 pilot had not reported hearing the inbound SR20 pilot and the Board agreed that they had not had any prior awareness of its presence (**CF3**). A GA pilot commented that, at airfields where an Air/Ground Radio facility is utilised, it can enhance the situational awareness of other airspace users if pilots announce when they are leaving the ATZ. The Board noted that the PA28 pilot had become visual with the SR20, however, members agreed that this had been too late for the avoiding action which they had taken to have been effective at materially increasing the separation (**CF5**).

Next, members discussed the actions of the SR20 pilot and a GA pilot member stated that it is often helpful, when approaching an airfield and when able, for a pilot to position their aircraft so that the airfield appears on the same side of the aircraft as the circuit direction, so, as an example, if a left-hand pattern is expected, position the aircraft so that the airfield is to the left. Members agreed that this would help a pilot to visually acquire and to integrate with traffic, however, it was noted that it is not always possible to achieve this. The Board discussed that the SR20 pilot had, in accordance with the published Leeds East arrival procedures, routed via a VRP, however, they had not been at the recommended altitude (**CF1, CF2**) and members agreed that, as a result, the vertical deconfliction designed in to the procedures had been reduced. The Board revisited the earlier discussion that the pilots had been using a common frequency, and again noted that the SR20 pilot had not reported hearing the departing PA28, and so they had not had any awareness of its presence (**CF3**). Although the SR20 pilot reported that their passenger had become visual with the PA28, members noted that the pilot themselves had not visually acquired it at any point (**CF6**).

The Board then considered the involvement of the ground element in this event and agreed that, at an airfield which operates an Air/Ground radio facility, the radio operator can only pass on information which has been provided to them by pilots, and that the AGO had acted within the privileges of their licence.

Finally, in assessing the risk of collision, the Board noted that the EC equipment carried by the PA28 pilot had been unable to detect the SR20. Members agreed that that neither pilot had had any prior situational awareness regarding the presence of the other aircraft and, although the PA28 pilot had become visual with the SR20, it had been at a time too late for the avoiding action they had taken to materially increase separation. Therefore, the Board concluded that providence had played a major part in events, that the separation that had existed had been fortuitous and the bare minimum, and that there had been a serious risk of collision (**CF7**). As such, the Board assigned a Risk Category A to this Airprox.

**PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK****Contributory Factors:**

2022175				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
<b>Flight Elements</b>				
<b>• Regulations, Processes, Procedures and Compliance</b>				
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
<b>• Tactical Planning and Execution</b>				
2	Human Factors	• Action Performed Incorrectly	Events involving flight crew performing the selected action incorrectly	Incorrect or ineffective execution
<b>• Situational Awareness of the Conflicting Aircraft and Action</b>				
3	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
<b>• Electronic Warning System Operation and Compliance</b>				
4	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
<b>• See and Avoid</b>				
5	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
6	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
<b>• Outcome Events</b>				
7	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:** A

**Safety Barrier Assessment<sup>7</sup>**

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 **partially effective** because, although the SR20 pilot had routed via a VRP in accordance with the local arrival procedures, they had not been at the altitude specified.

**Tactical Planning and Execution** was assessed as **partially effective** because, although the SR20 pilot had routed via a VRP, in accordance with the local arrival procedures, they had not been at the altitude specified.

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **ineffective** because neither pilot had had any awareness of the presence of the other aircraft prior to sighting it.

<sup>7</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

**Electronic Warning System Operation and Compliance** were assessed as **ineffective** because the EC equipment carried by the PA28 pilot had been incompatible with, and therefore unable to detect, the transponder on the SR20.

**See and Avoid** were assessed as **ineffective** because the PA28 pilot had become visual with the SR20 at a stage when it had been too late for their avoiding action to materially increase separation and, although the passenger in the SR20 had become visual with the PA28, the pilot had not.

<b>Airprox Barrier Assessment: 2022175</b>		Outside Controlled Airspace						
<b>Barrier</b>		<b>Provision</b>	<b>Application</b>	<b>Effectiveness</b>				
				Barrier Weighting				
				0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance	✓	✓					
	Manning & Equipment	✓	✓					
	Situational Awareness of the Conflication & 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	✗	✗					
<b>Key:</b>		<u>Full</u>	<u>Partial</u>	<u>None</u>	<u>Not Present/Not Assessable</u>	<u>Not Used</u>		
Provision	✓	⚠	✗	○				
Application	✓	⚠	✗	○				
Effectiveness								