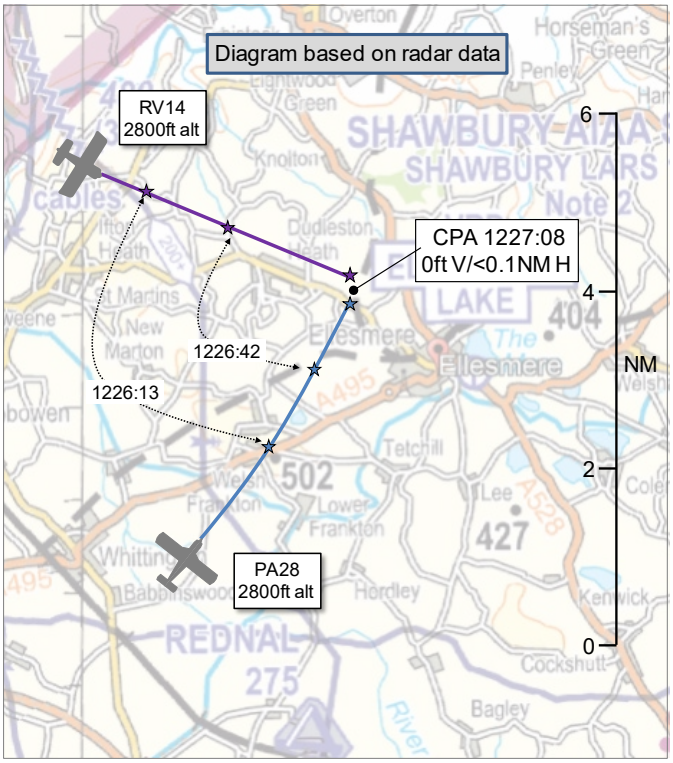
AIRPROX REPORT No 2024036

Date: 24 Feb 2024 Time: 1227Z Position: 5255N 00255W Location: 1.5NM NW Ellesmere Lake

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	RV14
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	AGCS
Provider	Hawarden Radar	Sleap Radio
Altitude/FL	2800ft	2800ft
Transponder	A, C, S	A, C, S
Reported		
Colours	White with brown & blue stripe	White and Blue
Lighting	Landing, nav, anti-coll & wing strobes	3 strobes, flashing landing lights.
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2700ft	2143ft
Altimeter	SPS	QFE
Heading	045°	135°
Speed	100kt	154kt
ACAS/TAS	Not fitted	Not fitted
Separation at CPA		
Reported	<100ft V/<100m H	NK V/NK H
Recorded	0ft V/<0.1NM H	



THE PA28 PILOT reports tracking southwest conducting [an instructional flight]. After seeing multiple other aircraft conducting general handling further south, they turned the aircraft 180° and tracked northeast. While the student was struggling to get the aircraft trimmed, they were at the same altitude and heading for a good few minutes. They initially saw two possible contacts at their 2 o'clock position and, while scanning out to the right and finding one of the aircraft (it was no conflict) they looked forward to see an aircraft on their left at roughly the 10 o'clock position heading directly towards them. They immediately took the controls for an avoidance action, pitching down whilst the other aircraft pitched up and left, with the other aircraft passing in front of them left-to-right, possibly within 100ft or less. [They opined that it was] unknown why the aircraft broke-off left instead of right which tracked it in front of them instead of behind, while they maintained track creating another near collision in the same Airprox. Nothing was heard over the frequency from the other aircraft or ATC regarding the Airprox. They continued the lesson with no other issues.

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

THE RV14 PILOT reports that after a one hour flight they were en-route to Sleap. They were very near to the overhead join height of 2000ft and heading near to the recognised VRP of Ellesmere Lake. They had previously obtained [their destination airfield] information. From memory and their standard arrival procedure they stated their VRP position, Ellesmere Lake, which would indicate to other aircraft their location and intention. Looking and scanning their forward view they suddenly saw the approaching aircraft lower than them by at least 700ft. They took evasive action by turning left and maintaining their height. After a few seconds they levelled the aircraft and could not see the other aircraft. They continued with their overhead join.

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

THE HAWARDEN CONTROLLER reports that the [PA28 pilot] was being provided a Traffic Service by the Hawarden Radar controller. Traffic Information was passed and [the PA28 pilot] reported visual with the conflicting aircraft. They were not informed of the Airprox until being notified by the Airprox Board. [UKAB Note: The Hawarden controller reported events after CPA, the Traffic Information referred to another aircraft, not the Airprox RV14.]

Factual Background

The weather at Hawarden was recorded as follows:

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METAR EGNR 241220Z VRB02KT 9999 FEW018 SCT022 08/02 Q0995
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Analysis and Investigation

Hawarden ATSU

[UKAB note: the Investigation report has been heavily redacted to include only those elements relevant to the Airprox aircraft. Hawarden misidentified the second aircraft involved and provided an investigation involving a different aircraft.]

Information available consisted of tape transcript, relevant flight progress strip, meteorological report, radar and ATC recordings.

Hawarden controller Interview

[The controller] took over Hawarden Radar at 1218 and [the PA28] was on frequency under a Basic Service operating approximately 20-30 miles to the southeast of Hawarden. [The PA28 pilot] requested to upgrade their service to a Traffic Service as they commenced general handling in the vicinity of Ellesmere Lake. At the time [the controller] commenced the Traffic Service they did not believe there was any traffic to affect [the PA28] and given that [what they believed to be] the unknown traffic was routing away from [the PA28] at that time, they worked other traffic inbound and then observed unknown traffic starting to route towards to [the PA28] and called this as 'pop-up traffic' to [the PA28 pilot] who confirmed that they were visual.

Event sequence

1218 There were numerous aircraft operating in an area 20-30 miles south of Hawarden. One of the 0430 squawks (Hawarden) was [the PA28].

1226 [The PA28 pilot] requested a Traffic Service to work in a block between 1500ft – 3500ft.

1227:44 [The PA28 pilot] confirmed the squawk was 0431. [An aircraft with an] 1177 [squawk] appeared to be turning away from [the PA28] and appeared to be 4 miles to the southwest of [the PA28], with both aircraft turning onto a south-westerly heading, however, the [aircraft displaying] 1177 [on radar] continued in the left turn.

Conclusion

[The PA28 pilot] was provided with a Traffic Service by the Radar ATCO and at the commencement of the service an [aircraft squawking] 1177 was 4 miles southwest of [the PA28] on a similar heading and [the controller] believed it would not conflict. When it was apparent that the [aircraft squawking] 1177 had turned onto a northeasterly heading towards [the PA28], and at approximately 3 miles separation, Traffic Information was passed. The pilot of [the PA28] reported visual with the traffic. The Radar ATCO then updated [the PA28 pilot] on the progress of that unknown traffic, which had then passed [the PA28]. [UKAB note: the aircraft squawking 1177 was not the RV14 involved in the Airprox.]

There were several aircraft operating in an area approximately 20 to 30 miles south of Hawarden, two of which were 0430 squawks on Basic Services working Hawarden and the others were 7000 or 1177 squawks. One of the [Hawarden] 0430 squawks was [the PA28], before they routed further north to commence general handling approximately 20 miles south of Hawarden, at which point they switched to a Traffic Service and a 0431 squawk and [the PA28] was confirmed as identified by [the controller]. Ellesmere Lake is 20 miles south of Hawarden in class G [airspace], so traffic operating in this area is not obliged to call Hawarden for any service.

CAA ATSI

The pilot of the PA28 was on a local VFR instructional flight. They reported that they were in receipt of a Basic Service from Hawarden at the time of the Airprox.

The pilot of the RV14 was on a local VFR flight. They had been inbound to Sleap and planning to join overhead at 2000ft, via Ellesmere Lake VRP. They reported that they were in receipt of an AGCS from Sleap at the time of the Airprox.

The Hawarden controller was not informed of the Airprox at the time of the event. In their subsequent report the controller said that they believed that the PA28 pilot was in receipt of a Traffic Service at the time of the Airprox. The RV14 was unknown traffic to the Hawarden controller.

The Hawarden RT recording was not made available to ATSI and Hawarden did not provide radar screenshots within their investigation report, which was received at the eleventh hour. As such this report has been compiled at short notice, using the pilot, the controller and the unit investigation reports, the latter of which included a transcript of the RT exchanges between the controller and the PA28 pilot. The timings of the transmissions within the transcript were utilised by ATSI alongside the NATS radar recording to produce the radar screenshots within this report. The aircraft levels within the screenshots are displayed as flight levels and the QNH entered into the display processor was 995hPa. The screenshots are not necessarily indicative of what the Hawarden controller was viewing in the lead-up to the event.

Important note: ATSI established during the compilation of this report that the Hawarden controller and the Hawarden investigator had identified the incorrect conflicting aircraft within their reports i.e., not the RV14.

At 1212:21 the PA28 pilot made initial contact with the radar controller on departure from Hawarden, squawking 0430, with the aircraft on a southerly heading. The pilot requested a Basic Service, and this was agreed. The RV14 was observed to be 30 miles southwest of the PA28 tracking northeast at this time and was not a factor to the PA28.

By 1224:00 the RV14 pilot had changed track to the east and the aircraft were 8NM apart and still not a factor to each other (Figure 1).

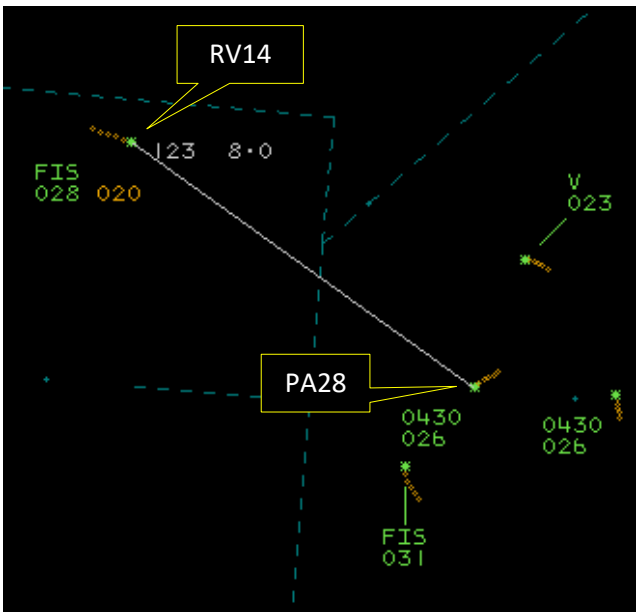

Figure 1 – 1224:00

At 1225:30 the PA28 pilot had turned onto a northeasterly track and there was 4.9NM between the two aircraft, with them indicating co-altitude (Figure 2).

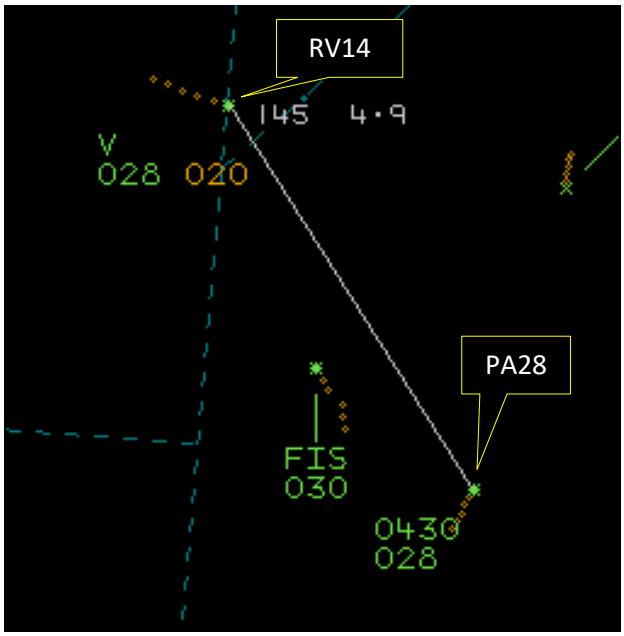

Figure 2 – 1225:30

By 1226:30 there was 2.1NM between the two aircraft, with them indicating co-altitude (Figure 3).

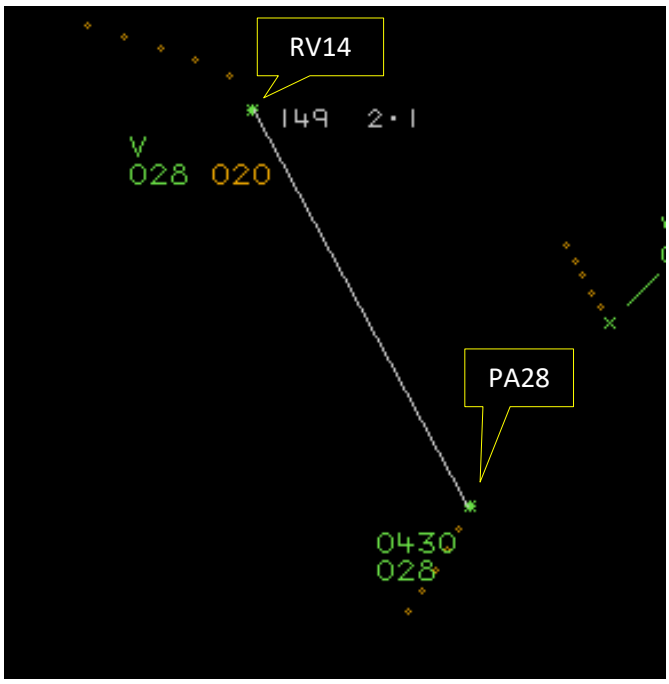

Figure 3 – 1226:30

At 1226:50 the pilot requested that the service be upgraded to a Traffic Service, and the pilot was instructed to squawk 0431 (Figure 4).

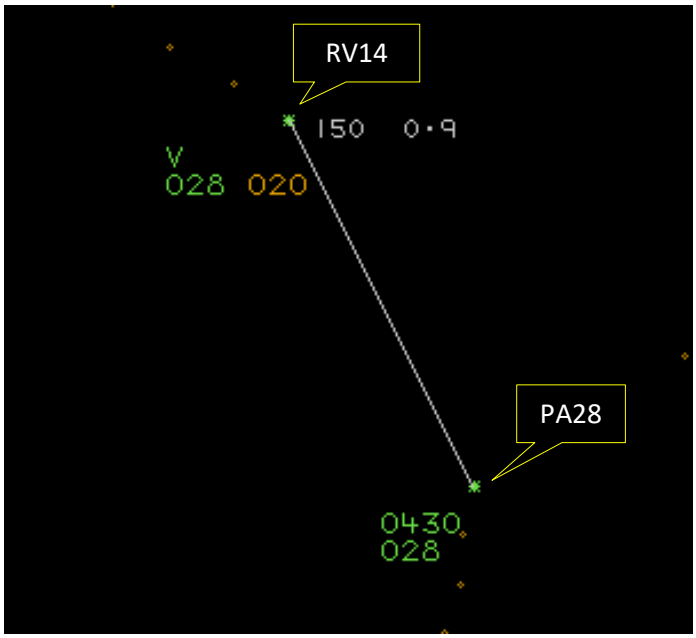

Figure 4 – 1226:50

At 1227:05 CPA occurred with the lateral distance between the two aircraft displayed as 0.0NM and indicating co altitude. Of note is that the squawk had not yet changed to the allocated discrete squawk of 0431 i.e., the aircraft had not yet been identified and the service had not yet been upgraded to a Traffic Service (Figure 5).

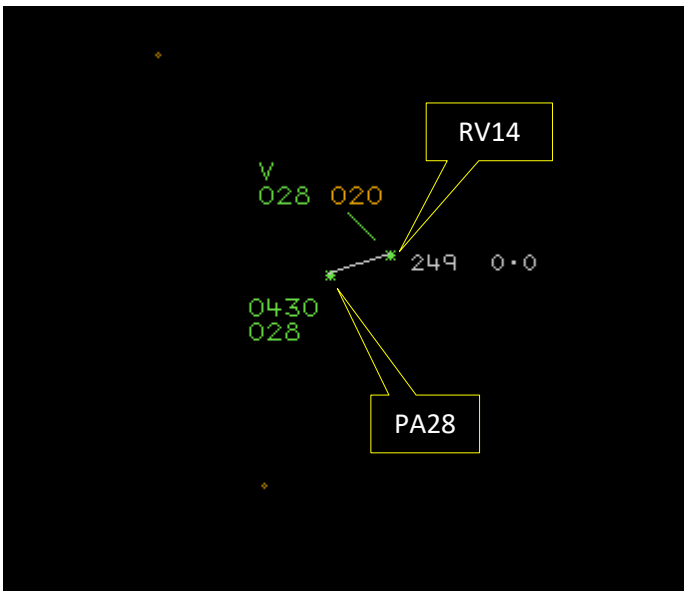

Figure 5 -1227:05 CPA

At 1227:38 the pilot asked for confirmation of the change of squawk and the controller confirmed that it was 0431.

At 1227:44 the controller advised the pilot that they were, "*identified, Traffic Service, report your altitude*?" The pilot reported being at altitude 2000ft and operating in the block 1500 and 3500ft. The controller advised the pilot that they would be operating below the sector safety altitude at times and would be responsible for their own terrain clearance. The pilot acknowledged.

The PA28 pilot continued on a northbound track after the Airprox. The Traffic Information timed at 1228:50 and 1229:58 that is referred to within the Hawarden unit report and the associated RT transcript, was Traffic Information that was passed to the PA28 pilot on an aircraft that was unrelated to this Airprox but believed by Hawarden to be the conflicting aircraft in the Airprox. As such, this Traffic Information and the mention of the incorrect use of the term 'pop up traffic' within the unit investigation report had no relevance to this Airprox.

UKAB Secretariat

Both aircraft were positively identified on radar using Mode S data. The RV14 on track to their destination via Lake Ellesmere VRP and the PA28 on an instructional flight heading approximately north-northeast back to their base on a converging track (Figure 6). The separation displayed in ATSI's CPA screenshot above could not be replicated.

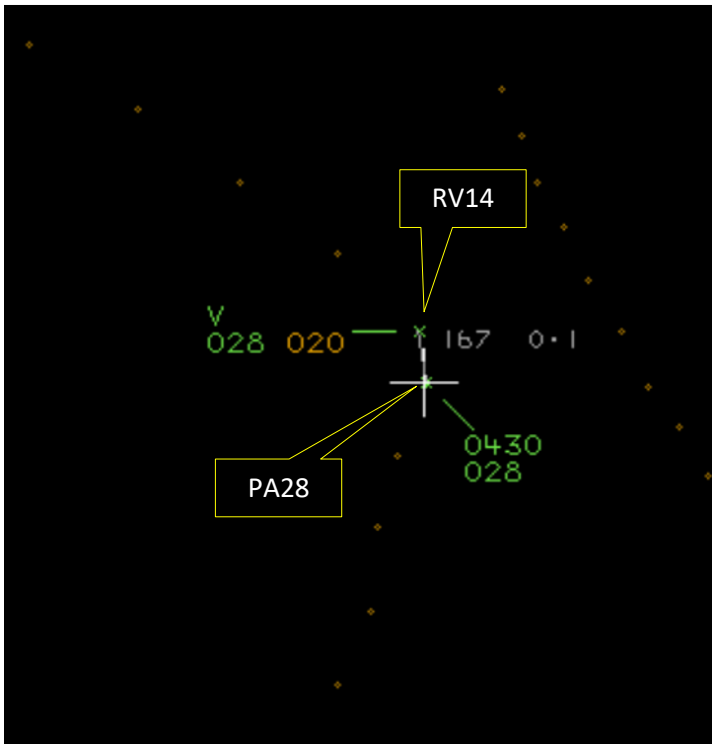

Figure 6 – CPA – 1227:08.

The PA28 and RV14 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 right.[2] If the incident geometry is considered as converging then the RV14 pilot was required to give way to the PA28.[3]

Summary

An Airprox was reported when a PA28 and an RV14 flew into proximity 1.5NM NW of Ellesmere Lake at 1227Z on Saturday 24th February 2024. Both pilots were operating under VFR in VMC, the PA28 pilot in receipt of a Basic Service from Hawarden and the RV14 pilot in receipt of an Air/Ground Communication Service from Sleap.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, a report from the air traffic controller involved and reports from the appropriate operating authorities. 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 looked at the ground elements involved in this Airprox, as they were concerned that there may have been a lack of communication from ATC. However, the Board came to the agreement that the controller had provided a Traffic Service when requested, which was after the CPA. The Board agreed that, at the time of CPA, the controller had been providing the PA28 pilot with a Basic Service and had not been required to provide monitor the aircraft (**CF1**). The Board's discussion regarding the ATS provided deemed that the PA28 pilot may have been better served had they requested the Traffic Service sooner (**CF2**), especially considering that the pilot had described the airspace as busy with 'multiple other aircraft'. Members further agreed that, had Traffic Information been provided, the PA28 pilot may well have gained sufficient situational awareness of the RV14 whereas, in actuality, they had none (**CF3**).

[1] (UK) SERA.3205 Proximity..
[2] (UK) SERA.3210 Right-of-way (c)(1) Approaching head-on.
[3] (UK) SERA.3210 Right-of-way (c)(2) Converging..

In continuation of the discussion regarding radio calls and timeliness of communication, the Board wondered why the RV14 pilot had not also been in receipt of a Basic or Traffic Service and, on viewing the chart and distance of Ellesmere VRP from Sleap, they agreed that the pilot had made a timely call to Sleap Radio and that this had been the most appropriate frequency for the RV14 pilot to have selected. Members considered this as unfortunate, only inasmuch that it had also led to the RV14 pilot having had no situational awareness of the presence of the PA28 (**CF3**). Members felt that it was important to emphasise the necessity of a good lookout in such circumstances, as both pilots had sighted the other's aircraft belatedly (**CF4**).

Concluding their discussion, members were in agreement that, as neither pilot had had specific situational awareness of the other, the PA28 and RV14 had reached sufficient proximity to have reduced safety margins much below the norm, and that a collision was averted by a combination of late avoiding action and providence (**CF5**). As such, the Board assigned Risk Category B to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024036			
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			
	• Tactical Planning and Execution			
2	Human Factors	• Communications by Flight Crew with ANS	An event related to the communications between the flight crew and the air navigation service.	Pilot did not request appropriate ATS service or communicate with appropriate provider
	• Situational Awareness of the Conflicting Aircraft and Action			
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
	• See and Avoid			
4	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
	• Outcome Events			
5	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: B.

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:

Ground Elements:

Situational Awareness of the Confliction and Action were assessed as **not used** because the Hawarden controller was not required to monitor the PA28 on a Basic Service.

Flight Elements:

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

Tactical Planning and Execution was assessed as **partially effective** because the PA28 pilot had belatedly requested a Traffic Service.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither the PA28 nor the RV14 pilots were aware of the presence of the other aircraft.

See and Avoid were assessed as **partially effective** because both the PA28 and RV14 pilots had a late sighting of the other's aircraft.