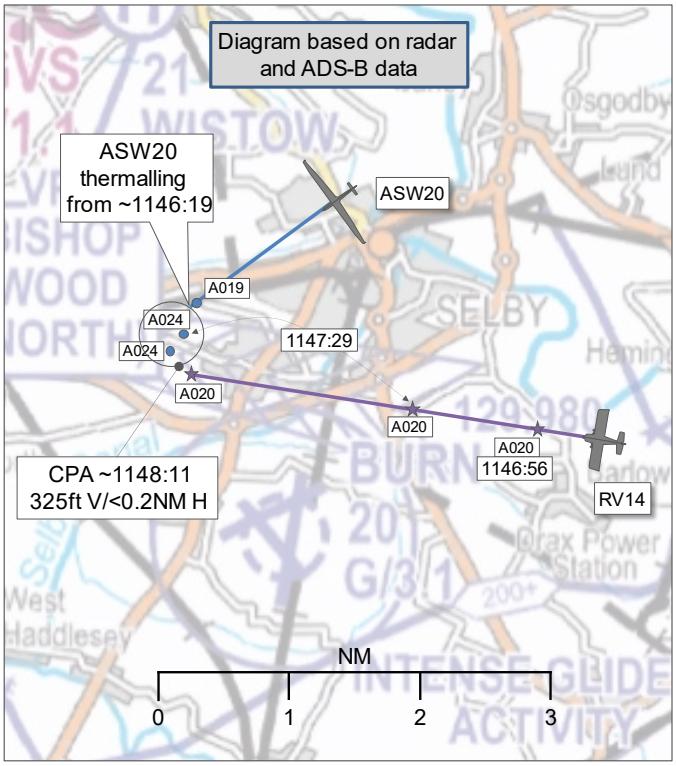
AIRPROX REPORT No 2024067

Date: 20 Apr 2024 Time: ~1148Z Position: 5346N 00106W Location: Thorpe Wood, Selby

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	ASW20	RV14
Operator	Civ Gld	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Listening Out	AGCS
Provider	Burn Traffic	Sherburn Radio
Altitude/FL	2355ft	2030ft
Transponder	None[1]	A, C, S+
Reported		
Colours	White, orange	White/blue
Lighting	Canopy flasher	Wingtip & tail strobe
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	NR	2000ft
Altimeter	NK	QFE
Heading	NR	285°
Speed	NR	136kt
ACAS/TAS	FLARM & SkyEcho	Not fitted
Alert	None	None
Separation at CPA		
Reported	100ft V/ 0ft H	NK V/ NK H
Recorded	325ft V/<0.2NM H	



THE ASW20 PILOT reports that at approximately 1150 they were thermalling within Burn airspace [UKAB note: there is no airspace associated with Burn gliding site], above west Selby (Thorpe Wood area), when a blue, low-wing, monoplane with white wings travelling at high speed passed 100-200ft beneath them, heading approximately 300° towards Sherburn in Elmet or Leeds East. They had failed to see [the aircraft] before they were about 5sec from them. [The other pilot] gave no indication of seeing them at all, nor was any radio call heard on [Burn's Club frequency] or [the generic gliding frequency]. They were transmitting from an [EC device], ADS-B, squawking 7000 Mode C and displaying a canopy flasher.

They further reported that they do not hold an FRTOL yet and, with hindsight, it would have been better to have tuned [the radio] to Sherburn.

THE RV14 PILOT reports that no action was taken as they were unaware of the other aircraft. They were level at 2000ft with 3 miles to run for a standard overhead join at Sherburn. Most aircraft approaching from the east request joining instructions at Selby. They had the joining instructions, so they were on the look-out for circuit traffic at Sherburn as well as traffic joining and leaving the airfield. Saturday is a busy day at Sherburn. They had the transponder on, had set 7000 and were transmitting ADS-B.

THE SHERBURN RADIO OPERATOR had not submitted a report, although the Head of Training at the aero club stated that they could only assume that the PIC [of the RV14] had contacted Sherburn Radio on departure and arrival as they do not keep communication records. They had no awareness of the Airprox.

[1] Pilot reported Mode A and C, but nothing seen on the NATS radar.

Factual Background

The weather at Leeds Bradford was recorded as follows:

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METAR EGNM 201150Z 03007KT 350V080 9999 SCT036 09/01 Q1029
METAR EGNM 201120Z 02009KT 340V070 9999 SCT035 10/01 Q1029
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The Sherburn-in-Elmet arrival procedures from the AIP are as follows:

2 ARRIVALS

a. Fixed wing aircraft to join overhead at 2000 FT QFE and descend in accordance with the 'Standard Overhead Join' procedure.
b. Initial contact with A/G 122.610 MHz within range 5 NM of the ATZ.
c. Helicopters route inbound at 700 FT QFE. Should it be necessary to join crossing the active runway, do so at 90° across the runway at midpoint not below 200 FT AAL

Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radar replay was undertaken, and the RV14 was positively identified using Mode S data, passing over the reporting point at a similar height and time stated in the ASW20 pilot's narrative (Figure 1).

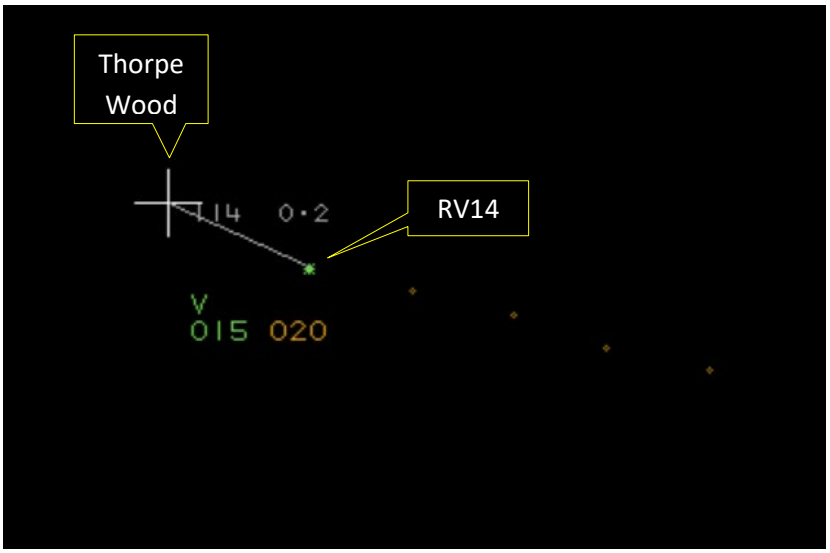


Figure 1 – Time 1148:11 the RV14 at 0.2NM from Thorpe Wood (the reported point of CPA)

Both aircraft were identified by ADS-B, but the ASW20 did not appear on the radar replay. The track and altitude of the RV14 displayed on radar replay were coincident with the ADS-B output (Figure 2).

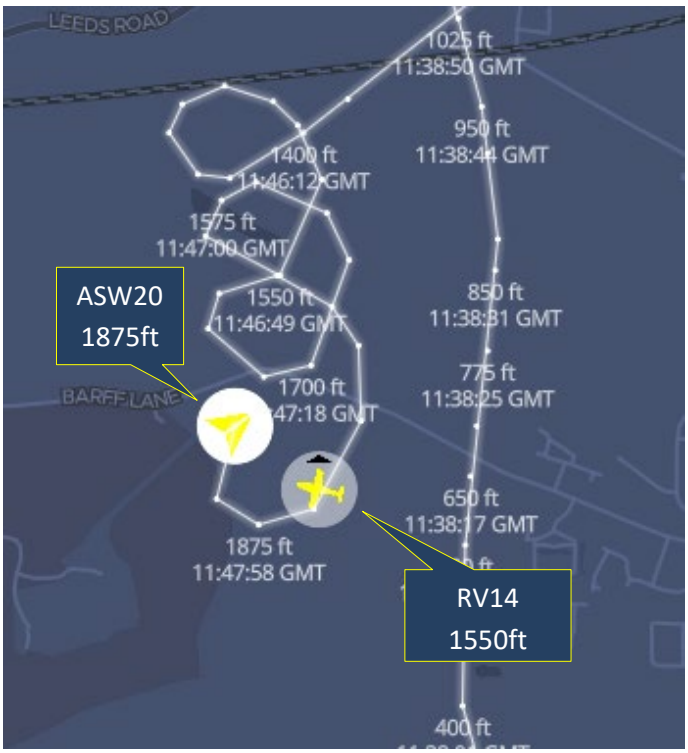


Figure 2 – Time ~1148:11 CPA

Thorpe Wood, Selby is 1NM to the east of Sherburn-in-Elmet's ATZ on the approach to RW28. The aircraft altitudes in Figures 1 and 2 are based on 1013hPa. The point of CPA was calculated as around 1148:11 as the ASW20 was manoeuvring clockwise through the northerly position of its next orbit.

The ASW20 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.[2] If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right.[3] If the incident geometry is considered as converging then the RV14 pilot was required to give way to the ASW20 glider.[4]

Comments

AOPA

Pre-flight route planning is just as important for safety as lookout is whilst flying. In this case, flying to the north of an area of intense glider activity, it may have been prudent to radio the glider site as the area is approached, then call the destination airfield, improving everyone's situational awareness. It is well known gliders are difficult to see when head on and that using all available resources to identify where other airspace users are is recommended.

BGA

The ASW20 pilot/owner is to be commended for fitting three different Electronic Conspicuity (EC) systems which, if operating correctly, would collectively be expected to provide situational awareness both to, and of, the greatest number of other airspace users. Although it's unfortunate that the ASW20 transponder does not seem to have been operating during this incident, the RV14 pilot does not mention having an EC system that detects transponders, so presumably could not have gained awareness of the ASW20 in this way. On the other hand, the ADS-B-based TAS carried by the ASW20 would have been expected to have detected the RV14's reported ADS-B

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

transmissions, but the ASW20 pilot reports not receiving any such warning. It would be useful to understand why this barrier did not function.

This incident once again highlights the difficulty of seeing a small aircraft approaching head-on at speed, as the RV14 would have appeared to the ASW20 pilot. Where forward-pointing high-intensity landing lights are fitted, many pilots now opt to leave them permanently switched on in daylight, to aid visual conspicuity in this direction. A glider circling in a thermal climb will typically complete one 360° turn every 20sec, during which time an aircraft approaching at 136kt would cover 0.75NM. The pilot of a thermalling glider must look for aircraft approaching from every direction; although continuously turning facilitates 360° lookout, it also leaves the pilot unsighted in any specific direction for about half the time.

Summary

An Airprox was reported when an ASW20 and an RV14 flew into proximity at Thorpe Wood, Selby at around 1148Z on Saturday 20th April 2024. Both pilots were operating under VFR in VMC, the ASW20 pilot was listening out on Burn gliding club and the generic gliding frequencies, and the RV14 pilot was in receipt of an AGCS from Sherburn.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, GPS tracks, radar photographs/video recordings and a report from the 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 looked at the actions of the ASW20 glider pilot and some members questioned the wisdom of the pilot's positioning relative to a newly established RNP approach procedure for Sherburn-in-Elmet.[5] On studying the RNP approach and the provisos for using it, the Board agreed that the ASW20 had been above the approach path and that, as no RNP approaches had been booked for that day, the pilot had been entitled to be there, with the RNP approach not being relevant to the Airprox. Members felt that the glider pilot, despite not having had a FRTOL, had missed a significant opportunity to tune in to Sherburn's frequency to 'listen in' and obtain relevant information of traffic operating in the vicinity of and approaching Sherburn. The Board agreed that without this information the ASW20 pilot had had no situational awareness of the position of the RV14 (**CF1**) and that this had been compounded by the ASW20's EC devices not detecting the emissions from the RV14's transponder (**CF2**). Nonetheless, the Board commended the ASW20 pilot for their diligence in having had multiple EC devices available and their transponder switched on. The Board was unable to determine why none of these devices had operated as expected.

Turning their attention to the actions of the RV14 pilot, the Board discussed a suggestion that the pilot had surreptitiously flown the RNP approach because their track had followed the same path and overflown the initial fix at the prescribed height. Members considered the RV14 pilot's approach and noted that they had flown in accordance with Sherburn's VFR join. Members also agreed that the RV14 pilot could have rerouted slightly to avoid flying in such close proximity to Burn glider site, notwithstanding that this had not contributed to this Airprox but would be wise to consider for future planning. Members further discussed the use of radio and EC equipment for the RV14 as it had also been suggested that the RV14 pilot could have transmitted their intentions on Burn's club frequency, but it was not known if the RV14 had a second radio installed that could have been utilised, and not considered practical to do this on a single radio during the approach phase to Sherburn. Members agreed therefore, that the RV14 pilot had not had situational awareness of the ASW20's position or manoeuvres (**CF1**) and were disappointed that the RV14 did not have EC installed, leaving the pilot to rely on their lookout, in regards to which the Board wondered if the RV14 pilot's attention had been too

[5] IAP for RW28 at Sherburn-in-Elmet introduced 10th August 2023 eAIS Package United Kingdom (nats.co.uk)

focused on checking the circuit pattern ahead to the point of not having seen the ASW20 glider thermalling 1NM outside Sherburn's ATZ (**CF3**).

In conclusion to their discussion, some of the members were of the opinion that no risk of collision had existed but they all agreed that the ASW20 pilot had been concerned by the proximity of the RV14 (**CF4**). The majority assessment was that safety had not been assured and that a risk of collision had been present (**CF5**). As such, the Board assigned Risk Category B to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024067			
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, inaccurate or only generic, Situational Awareness
	• Electronic Warning System Operation and Compliance			
2	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			
3	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
4	Human Factors	• Perception of Visual Information	Events involving flight crew incorrectly perceiving a situation visually and then taking the wrong course of action or path of movement	Pilot was concerned by the proximity of the other aircraft
	• 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[6]

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

Ground Elements:

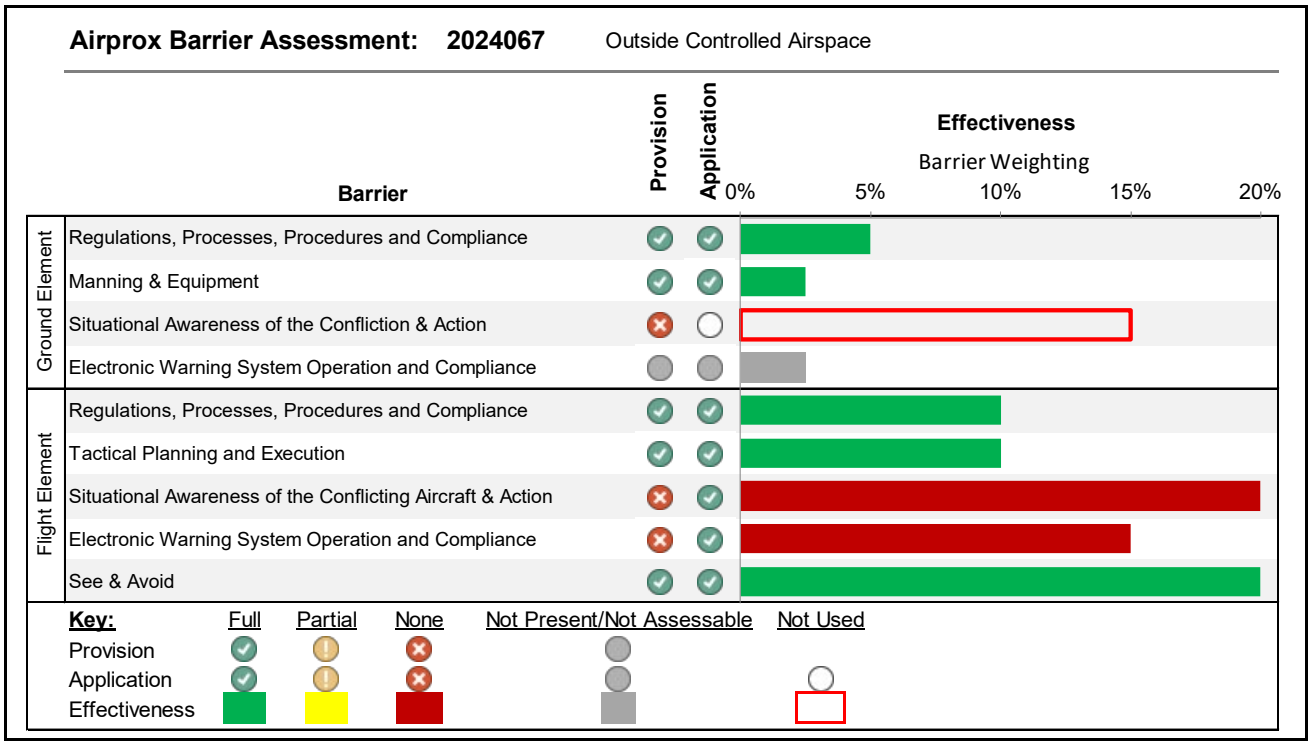
Situational Awareness of the Confliction and Action were assessed as **not used** because the Sherburn Radio operator was not required to monitor the aircraft.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither the ASW20 pilot nor the RV14 pilot were aware of the presence or position of the other aircraft.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the electronic conspicuity systems on the ASW20 did not detect the electronic transmissions from the RV14.

[6] 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: 2024067
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:
Full
Partial
None
Not Present/Not Assessable
Not Used
Provision
Application
Effectiveness