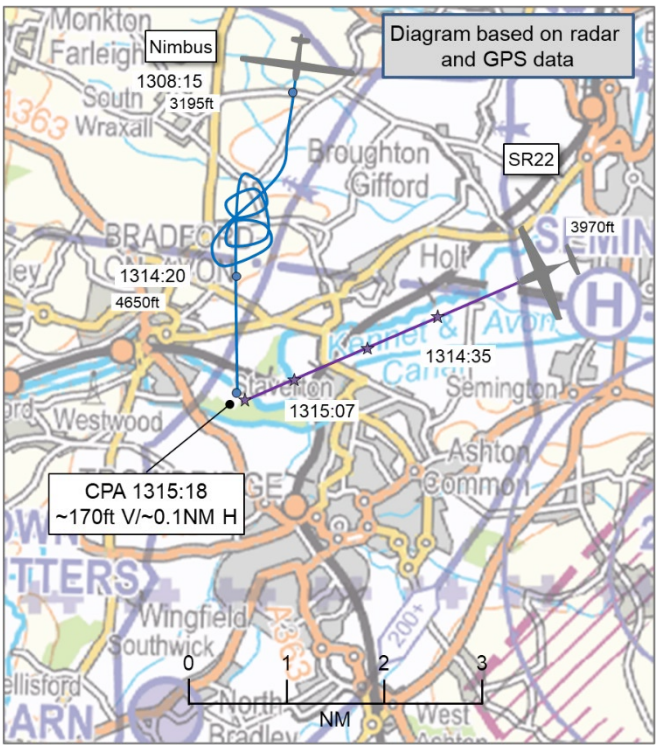
AIRPROX REPORT No 2024167

Date: 18 Jul 2024 Time: 1315Z Position: 5120N 00213W Location: 1NM west of Trowbridge

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Nimbus	SR22
Operator	Civ Gld	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	Listening Out
Provider	N/A	Bristol
Altitude/FL	4140ft	3970ft
Transponder	Not fitted	A, C, S
Reported		
Colours	White	Silver
Lighting	None	Landing, taxy, nav, anti-colls, strobes
Conditions	VMC	VMC
Visibility	>10km	NR
Altitude/FL	2800ft	3000ft
Altimeter	QFE	NR
Heading	190°	NR
Speed	70kt	NR
ACAS/TAS	FLARM	TAS
Alert	None	None
Separation at CPA		
Reported	75ft V/0NM H	Not seen
Recorded	~170ft V/~0.1NM H	



THE NIMBUS PILOT reports that they had been on a solo cross-country flight routeing [departure and recovery airfield] to The Park. The other aircraft had appeared from below and behind their port wing on a heading of approximately 260° and took no avoiding action. The Nimbus pilot believed that the other aircraft had possibly been an 'RV' model.

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

THE SR22 PILOT reports that they were unaware of the other aircraft and had not seen it visually or had any alert on TCAS [sic]. They note that they had not been flying near any gliding sites.

Factual Background

The weather at Bristol Airport was recorded as follows:

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METAR EGGD 181250Z 18007KT 140V230 9999 SCT035 24/16 Q1020=
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Analysis and Investigation

UKAB Secretariat

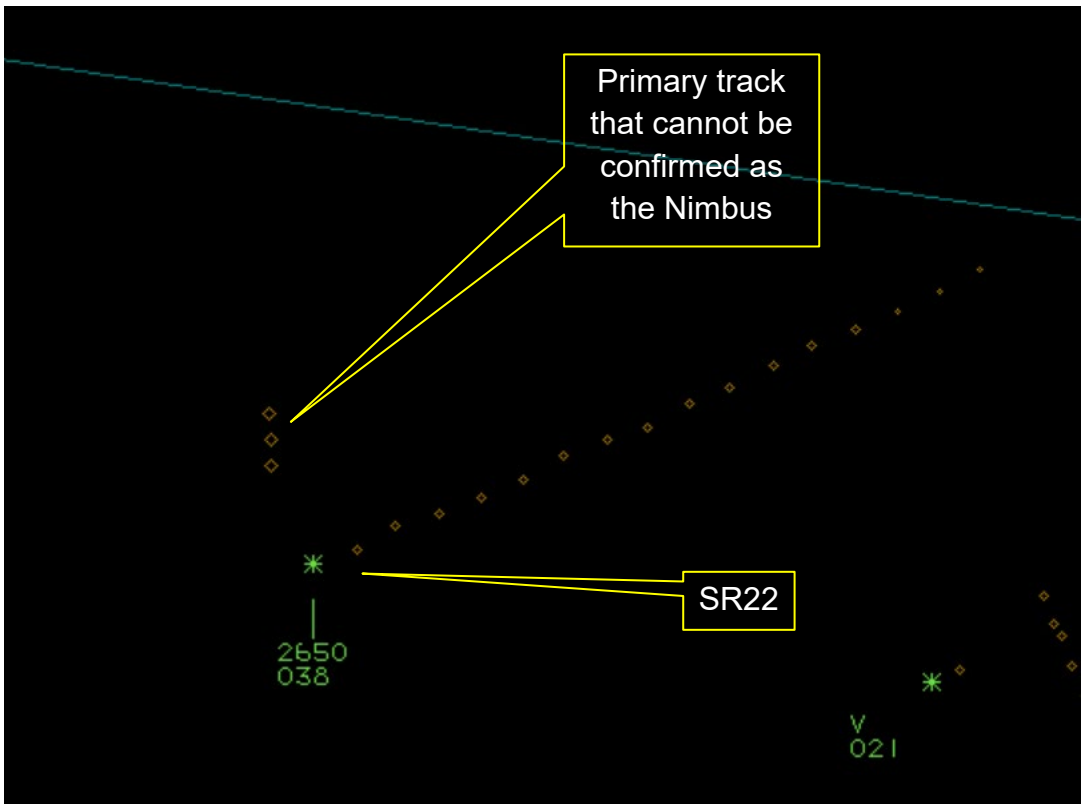


Figure 1: At CPA minus 4sec (1315:14)

Figure 1 above shows the NATS radar trace for the SR22 and a primary contact that, although in the right area, cannot be confirmed as the Nimbus. The diagram at page 1 is constructed utilising information drawn from both radar and GPS data.

The Nimbus and SR22 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 converging then the SR22 pilot was required to give way to the Nimbus.[2]

Comments

AOPA

When flying, always attempt to obtain the most appropriate radar service from an Air Traffic Control unit which will assist with mid-air collision avoidance. Until the Department for Transport mandates a common form of electronic conspicuity and it is fitted to all aircraft, it cannot be relied upon for a barrier to collision. In this case, this leaves lookout as the barrier to MAC which wasn't fully effective in this case.

BGA

With no interoperable electronic conspicuity between the glider and SR22, and neither aircraft in receipt of an ATS, see-and-avoid was the only operating MAC safety barrier in this incident. When the Nimbus levelled its wings after thermalling at 1313:28 and began tracking south, it was about 400ft higher than the SR22 at a range of about 4.3NM. From that point until CPA at 1315:18, 110sec later, each aircraft was on a near-constant relative bearing from the other with a steadily decreasing height difference; the Nimbus was at one o'clock from the SR22, while the SR22 in the Nimbus pilot's 9 o'clock. The difficulties of sighting another aircraft approaching on a constant relative

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

bearing are well known, and in addition the SR22 may have initially been obscured from the Nimbus pilot by the glider's port wing.

Summary

An Airprox was reported when a Nimbus and an SR22 flew into proximity 1NM west of Trowbridge at 1315Z on Thursday 18th July 2024. Both pilots were operating under VFR in VMC, the Nimbus pilot had not been in receipt of an Air Traffic Service and the SR22 pilot had been Listening Out on the Bristol Radar frequency.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings and GPS data. 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 Nimbus pilot, noting the phase of their flight and their operation without radio or transponder. Members opined that, although the Nimbus pilot had carried electronic equipment common to the gliding fleet, this model had not been capable of detecting the electronic conspicuity equipment carried and used by a high proportion of powered GA operators (**CF2**) thus rendering the EWS barrier ineffective in this case. As the Nimbus pilot had not held a FRTOL, the pilot would not have been able to make situational and information calls but may have been able to receive such if radio equipped. The Board agreed that the Nimbus pilot had not had any situational awareness of the presence of the SR22 (**CF1**). Members noted that the Nimbus pilot described having visually acquired the SR22 effectively at CPA and deemed this to have been an effective non-sighting (**CF3**).

Turning to the actions of the SR22 pilot, members noted that they had been Listening Out on the Bristol frequency, which had not been unreasonable, but opined that a full LARS could have been sought from either Brize Norton or Yeovilton although, in this case, as the Nimbus had utilised no transponder or radio, a LARS controller would have been unlikely to have been aware of the presence of the Nimbus. Unfortunately, the TAS carried by the SR22 had been unable to detect electronic emissions from the Nimbus (**CF2**) and the SR22 pilot had gained no situational awareness of the presence of the Nimbus (**CF1**) . The Board agreed that the SR22 pilot had not visually acquired the Nimbus at any stage (**CF3**) and had been unaware of the Airprox until informed after the event.

Both the SR22 and Nimbus pilots had maintained a relatively constant altitude and flown for a period without heading change and therefore the visual picture presented to both pilots had offered a reduced opportunity to visually acquire each other. Members stressed the importance of active lookout and airframe manoeuvring to highlight their presence to others and deemed this to have been a 'Class G airspace incident' which had fortuitously not resulted in a mid-air collision.

Concluding their discussion, members agreed that both pilots had had no situational awareness of the presence of the other aircraft. The pilot of the SR22 had not sighted the Nimbus and the pilot of the Nimbus had sighted the SR22 only at the moment of CPA. Members agreed that the separation between the Nimbus and SR22 had been such that the safety of the aircraft had not been assured and that there had been a risk of collision (**CF4**). The Board assigned Risk Category B to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024167			
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	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
	• **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
	• **Outcome Events**			
4	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[3]

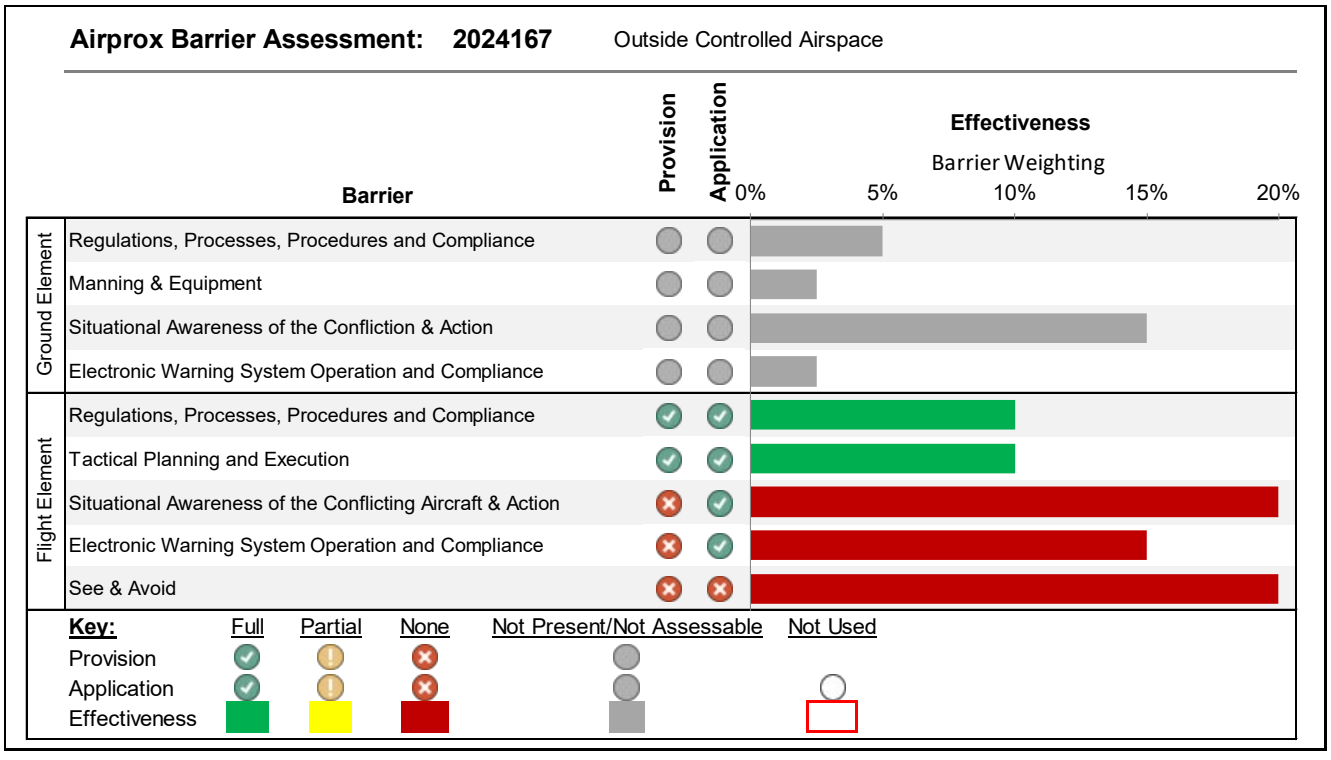
In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Flight Elements:

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

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the equipment carried by both aircraft had been incompatible with that carried by the other.

See and Avoid were assessed as **ineffective** because the Nimbus pilot had only seen the SR22 at or around CPA, and the SR22 pilot had never seen the Nimbus.



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