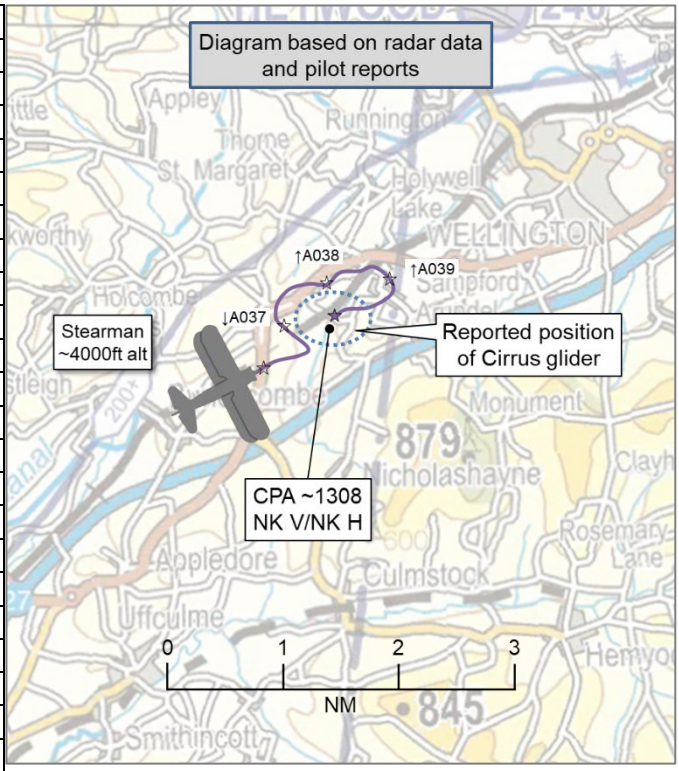
AIRPROX REPORT No 2021072

Date: 27 May 2021 Time: ~1308Z Position: 5057N 00318W Location: 3NM SW of Wellington

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Open Cirrus glider	Stearman
Operator	Civ Gld	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	Listening Out
Provider	N/A	Dunkeswell Radio
Altitude/FL	NK	4000ft
Transponder	Off	A, C, S
Reported		
Colours	White, red	Yellow
Lighting	None	NR
Conditions	VMC	VMC
Visibility	>10km	NR
Altitude/FL	3890ft	3000ft
Altimeter	QNH	QFE
Heading	WNW	NR
Speed	60kt	80kt
ACAS/TAS	FLARM	Unknown
Alert	None	N/A
Separation		
Reported	250ft V/350ft H	Not Seen
Recorded	NK V/NK H	



THE CIRRUS GLIDER PILOT reports that they were heading WNW halfway between Devon and Somerset Gliding Club [based at North Hill Glider Site] and Wellington at approximately 3000ft QFE, about to make a change of direction to head north to Taunton. They looked to the right before making their turn and saw the other aircraft approaching in line with the end of their wingtip. It was at this point that they banked right. The other aircraft then passed behind them and approximately 250-300ft lower than them.

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

THE STEARMAN PILOT reports performing local aerobatics between 3500ft and 2500ft – basic loops, rolls and wingovers culminating in a spin down to 1500ft. The area was cleared by 360° turns prior to commencing. No aircraft were seen prior to, or after, their manoeuvres. The maximum speed in the aerobatics was 120kt and minimum speed about 40kt in a spin. The climbs between the manoeuvres were at 80kt with clearing turns at intervals. They regularly do aerobatics in this area but did not see the glider.

Factual Background

The weather at RNAS Yeovilton was recorded as follows:

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METAR EGDY 271350Z 17005KT 9999 FEW040 18/00 Q1020 NOSIG RMK BLU BLU=
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Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radar replay was undertaken. The Stearman was recorded in the area of the reported Airprox but there were no radar returns that corresponded to the reported position of the Cirrus glider. A number of primary radar returns were visible within an 8NM radius of the reported position of the Airprox (see Figure 1) but none of these returns were consistent enough to attribute to the Cirrus glider.

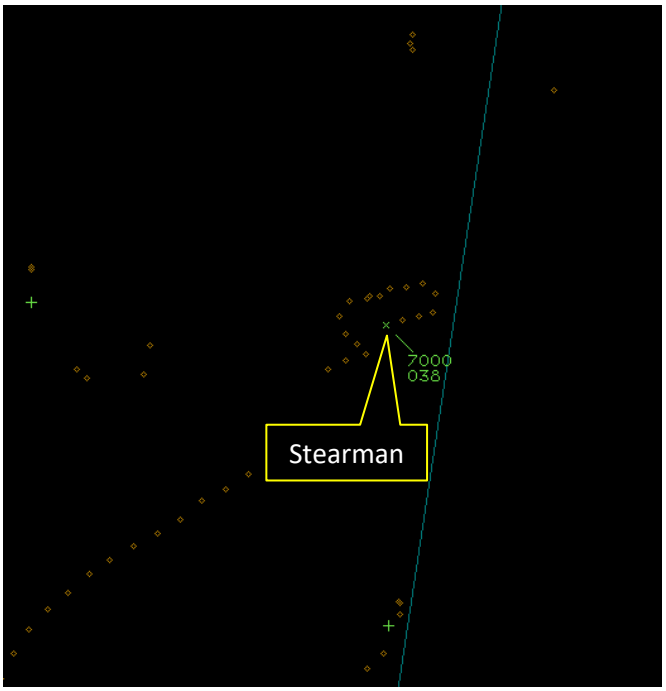


Figure 1 - Estimated CPA

The Cirrus glider and Stearman 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]

Summary

An Airprox was reported when a Cirrus glider and a Stearman flew into proximity 3NM SW of Wellington at approximately 1308Z on Thursday 27th May 2021. Both pilots were operating under VFR in VMC, the Cirrus glider pilot was not in receipt of an ATS and the Stearman pilot was listening out on the Dunkeswell Radio frequency.

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.

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 considered the actions of the Open Cirrus glider pilot and heard from a glider pilot member that the BGA[2] encourages pilots to report Airprox whenever they feel that safety may have

[1] (UK) SERA.3205 Proximity.
[2] British Gliding Association.

been compromised. The Board noted that the glider did not appear on the NATS radar replay and was disappointed that the glider pilot had not responded to requests to provide their GPS log file from the flight, as this hindered their understanding of the geometry of the encounter. However, from the information available the Board agreed that the glider pilot's FLARM had not been able to detect the transponder fitted to the Stearman (**CF2**) and, without any form of Air Traffic Service, they had therefore not had any situational awareness of the presence of the other aircraft (**CF1**). This had left the glider pilot to rely on their lookout for the detection of other aircraft and members agreed that the glider pilot, on sighting the Stearman, had been concerned by its proximity (**CF4**).

Turning to the actions of the Stearman pilot, the Board also noted that they had chosen not to seek an Air Traffic Service – although it was acknowledged that this may have been of limited value given that the glider had not been carrying a transponder – and that the pilot had not reported whether or not the aircraft had been fitted with any equipment capable of detecting the FLARM carried by the glider. Members considered it likely that, had the Stearman been fitted with additional electronic conspicuity equipment, then the pilot would have reported as such and so concluded that the Stearman pilot had not had any situational awareness of the proximity of the Open Cirrus glider (**CF1**) [Post-Board note: the Stearman pilot has since fitted their aircraft with a FLARM receiver]. There then followed a discussion on the use of transponders while conducting aerobatics – members agreed that the best course of action would normally be to secure a surveillance-based Air Traffic Service and to then set the squawk assigned by the ATC unit. This would not only give that unit awareness of the aircraft's position and pilot's intentions (and clearly enable Traffic Information to be passed), but would also allow other ATC units to identify which ATC unit was working that traffic. However, in cases where there was no appropriate ATC unit to contact, the Board wished to remind pilots of the importance of selecting their transponder Mode A code to 7004 when carrying out aerobatic manoeuvres as this indicates to ATC that their tracks and altitudes are subject to rapid change and so controllers can plan the routing of other aircraft under their control accordingly. Returning to the Airprox itself, a GA pilot member with experience in conducting aerobatics commented on the fact that the HASELL[3] and HELL[4] checks are designed to remind pilots to maintain their lookout whilst manoeuvring but that, nonetheless, the very nature of the manoeuvring can limit a pilot's ability to scan all around the aircraft. Whilst there was no suggestion that the Stearman pilot had not been conducting as through a lookout as they were able to, the Board agreed that, as the Stearman pilot reported, they did not see the Open Cirrus glider and that this had been contributory to the Airprox (**CF3**).

Finally, the Board considered the risk involved in this Airprox. Members noted that the Stearman had been tracked by the NATS radars but that no recorded data regarding the glider's track and altitude had been available. Without this information it was difficult for the Board to judge the actual proximity of the 2 aircraft, and members were further limited by the fact that the Stearman pilot had not seen the glider. However, the Board considered the glider pilot's assessment of the collision risk ('medium') and also their reported horizontal and vertical separation from the Stearman. The Board agreed that the reported separation had described a situation that had met the criteria for reporting but that normal safety standards and parameters had pertained. Accordingly, a Risk Category E was assigned to this Airprox.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2021072			
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
	• Electronic Warning System Operation and Compliance			

[3] Height, Airframe, Security, Engine, Location, Lookout.
[4] An abbreviated form of HASELL checks.

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
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

Degree of Risk: E

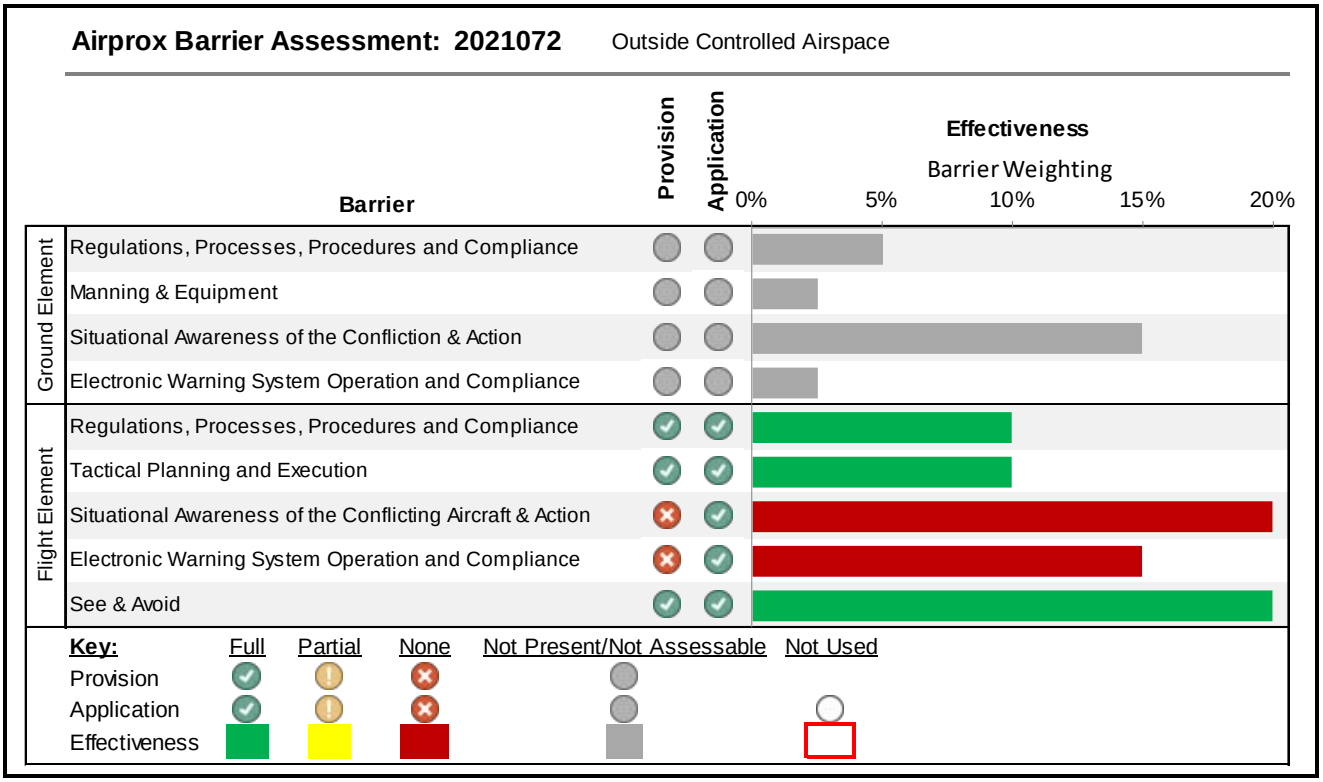
Safety Barrier Assessment[5]

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 FLARM equipment carried by the Cirrus glider pilot could not detect the transponder fitted to the Stearman.



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