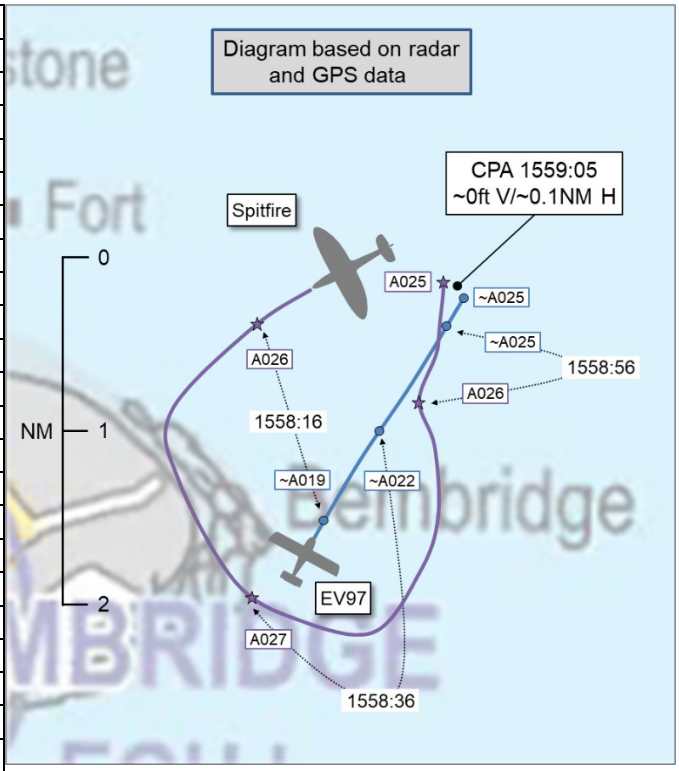
AIRPROX REPORT No 2022162

Date: 06 Aug 2022 Time: 1559Z Position: 5042N 00102W Location: 3NM ENE Bembridge

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	EV97	Spitfire IX
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	None
Provider	N/A	N/A
Altitude/FL	~2500ft	2500ft
Transponder	Not fitted	A, C, S
Reported		
Colours	Silver	Green, grey
Lighting	None	None
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2650ft	2500ft
Altimeter	QNH (1032hPa)	QNH (NR hPa)
Heading	030°	360°
Speed	80kt	230kt
ACAS/TAS	PilotAware	PilotAware
Alert	None	None
Separation at CPA		
Reported	100ft V/30m H	100ft V/40m H
Recorded	~0ft V/~0.1NM H	



THE EV97 PILOT reports that they had just [crossed the coast near Bembridge] and turned left to head directly to Hayling Island to keep well away from the NOTAM'd air display area over Ryde. Just after levelling off, they noticed a Spitfire passing to their left in the opposite direction at the same height and at a safe distance. Glancing behind, they saw it turn behind them. [The EV97 pilot] asked their passenger (also a pilot) to see if [the Spitfire] was going all the way round. They assumed that [the Spitfire] would straighten and fly on the same heading past their right side. As a photo opportunity, the passenger took their phone out to take pictures. However, the Spitfire continued turning until almost directly towards them. Given the extreme speed differential there was simply no time to assess an avoiding manoeuvre, and, if they had assumed that [the Spitfire pilot] had seen them, deviating may have put them in greater danger. The Spitfire appeared to pass above their starboard wing and then turned to the left in front of them towards Ryde. [The EV97 pilot] commented that "*It is hard to judge after an intense moment, but it seemed very close, between 50 and 100ft above, but I believe closer to 50ft*". The downwash created pushed their starboard wing violently downwards, requiring full aileron to counteract the roll. The flight was continued towards Hayling Island.

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

THE SPITFIRE PILOT reports that they were participating in a NOTAM'd air display at Ryde and were orbiting before running-in to display. With 60secs to go, after two 360° orbits and visually clearing the display site, their [EC device] was checked for any traffic. A descent was initiated to commence the display. During this descent they saw a low-wing microlight-type appear from under the nose of the aircraft and track underneath the left wing at a range of 100-200ft. Up until the point when visual contact was achieved, the [EV97] was hidden by the nose of the aircraft. The rate of decent was immediately stopped and they flew over the aircraft. [The Spitfire pilot] commented that "*This is very busy airspace and the local radar unit will not work any traffic outside their zone*".

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

THE LEE-ON-SOLENT AFISO reports that according to their records, [the Spitfire pilot] changed frequency to Goodwood Information at 1555.

THE GOODWOOD AFISO: reports that they were not working either aeroplane as a Goodwood arrival or departure on the 6th August.

Factual Background

The weather at Southampton was recorded as follows:

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METAR EGHI 061550Z VRB04KT CAVOK 23/07 Q1027
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There had been an active NOTAM for an air display at Ryde (see Figure 1):

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H6027/22: Air display will take place
Q) EGTT/QWALW/IV/M/W/000/040/5044N00111W002
AIR DISPLAY WI 1.5NM RADIUS 504421N 0011041W (RYDE ROADS, ISLE
OF WIGHT). FOR INFO 07710 962288. 2022-08-0019/AS2.
LOWER: Surface, UPPER: 4,000 Feet AMSL
FROM: 06 Aug 2022 15:45 GMT (15:45 UTC) TO: 06 Aug 2022 16:30 GMT (16:30 UTC)
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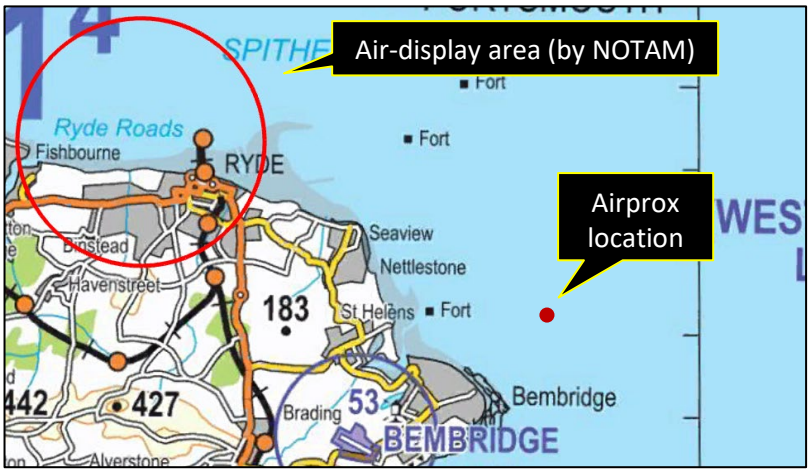


Figure 1 - The air-display area

Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radar replay was undertaken. The Spitfire could be positively identified from Mode S data but the EV97 was not observed (see Figure 2). The EV97 pilot kindly supplied a GPS track log of their flight for analysis. It is with these separate sources that the diagram was constructed and an estimation of the CPA determined.

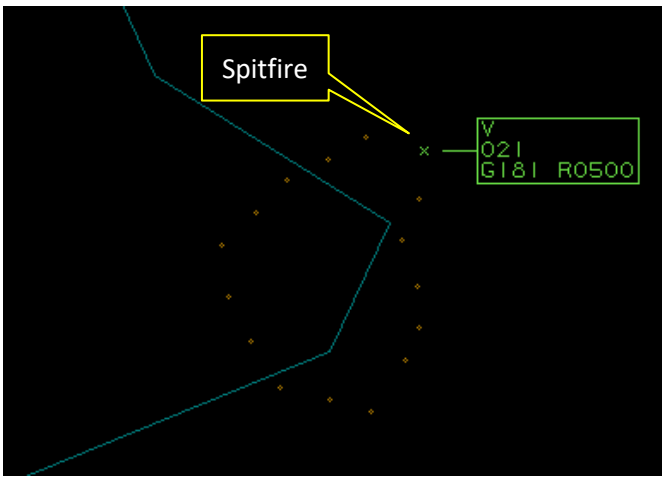


Figure 2 – CPA at 1559:05

The EV97 and Spitfire 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 overtaking then the EV97 pilot had right of way and the Spitfire pilot was required to keep out of the way of the other aircraft by altering course to the right.[2]

Summary

An Airprox was reported when an EV97 and a Spitfire flew into proximity 3NM east-northeast of Bembridge at 1559Z on Saturday 6th August 2022. Both pilots were operating under VFR in VMC, neither pilot in receipt of an ATS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, GPS track data, reports from the air traffic controllers 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.

Members first considered the actions of the pilot of the EV97. Noting that Bembridge Radio had not been available at that time, members agreed that it would have been advisable nevertheless to have transmitted a 'blind call' on the frequency to provide situational awareness to other pilots in the vicinity[3]. The visual conspicuity of the Spitfire was considered and members agreed that the camouflage colour scheme would have rendered it hard to see. However, members were heartened that the pilot of the EV97 had maintained a good lookout and had sighted the Spitfire in plenty of time. Given the very large differential in speed between the two aircraft, and that the Spitfire had been approaching from behind, it was concluded that the pilot of the EV97 would have had little opportunity to consider an avoiding manoeuvre or to have judged a safer action other than to remain on their heading whilst the Spitfire passed them. The Board heard that the separation between the aircraft had been so reduced as to have caused disruption to the flightpath of the EV97, and agreed that the proximity of the Spitfire had caused the pilot of the EV97 concern (**CF5**).

Members next considered the actions of the pilot of the Spitfire and deduced that, whilst holding to the east of the Isle of Wight in preparation for their air-display, they had been focussed on the timing of their manoeuvres which may have detracted from the attention given to an effective lookout (**CF3**). Members acknowledged the Spitfire pilot's remarks that the nose cowling of the Spitfire had initially obscured the EV97 from their view (**CF6**) and agreed that this emphasises the importance of an effective lookout below the aircraft before commencing a descent. Having sighted the EV97 late, members concluded

[1] (UK) SERA.3205 Proximity.
[2] (UK) SERA.3210 Right-of-way (c)(3) Overtaking.
[3] UKAB note: The pilot of the EV97 has subsequently informed the UKAB Secretariat that they had made blind calls on the Bembridge Radio frequency.

that the pilot of the Spitfire had not had sufficient time to have increased the separation between the aircraft, effectively making this a 'non-sighting' (**CF4**).

Members next considered the NOTAM published for the air-display and opined that, given the high energy manoeuvres that would have been expected for such a display, the described area had been of relatively small dimensions. In consideration of how the pilot of the EV97 might have brought the information supplied in the NOTAM into the planning of their own flight, members agreed that it would have been reasonable to assume that a displaying aircraft would have been holding away from the display site, as had been the case. It was noted that the text of the NOTAM had included a telephone number but not a radio frequency. It would not have been unreasonable, members suggested, for the pilot of the Spitfire to have included a frequency that they would use to provide their position information as they prepared for the air-display to commence. This might have provided some situational awareness, although perhaps generic in nature, for the benefit of other pilots in the vicinity. Members noted that neither pilot had been in receipt of an ATS, there had been no common frequency, and had not had any situational awareness of the other (**CF1**). The Board recalled the circumstances of previous Airprox incidents where the provision of a LARS may have mitigated events unfolding in the way that they had. Members agreed that, had such a service been available to the pilots in this case, the same might have been true.

Members were surprised and disappointed to observe that, despite both aircraft being equipped with similar – and interoperable – EC equipment, neither pilot had been alerted to the presence of the other (**CF2**).

When determining the risk, the Board concluded that the separation had been reduced to the bare minimum and the event had only stopped short of an actual collision because providence had played a major part in events. There had been a serious risk of collision (**CF7**) and, as such, the Board assigned a Risk Category A to this Airprox.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2022162			
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	• Distraction - Job Related	Events where flight crew are distracted for job related reasons	
4	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
5	Human Factors	• Perception of Visual Information		Pilot was concerned by the proximity of the other aircraft
6	Contextual	• Visual Impairment	Events involving impairment due to an inability to see properly	One or both aircraft were obscured from the other
	• Outcome Events			
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[4]

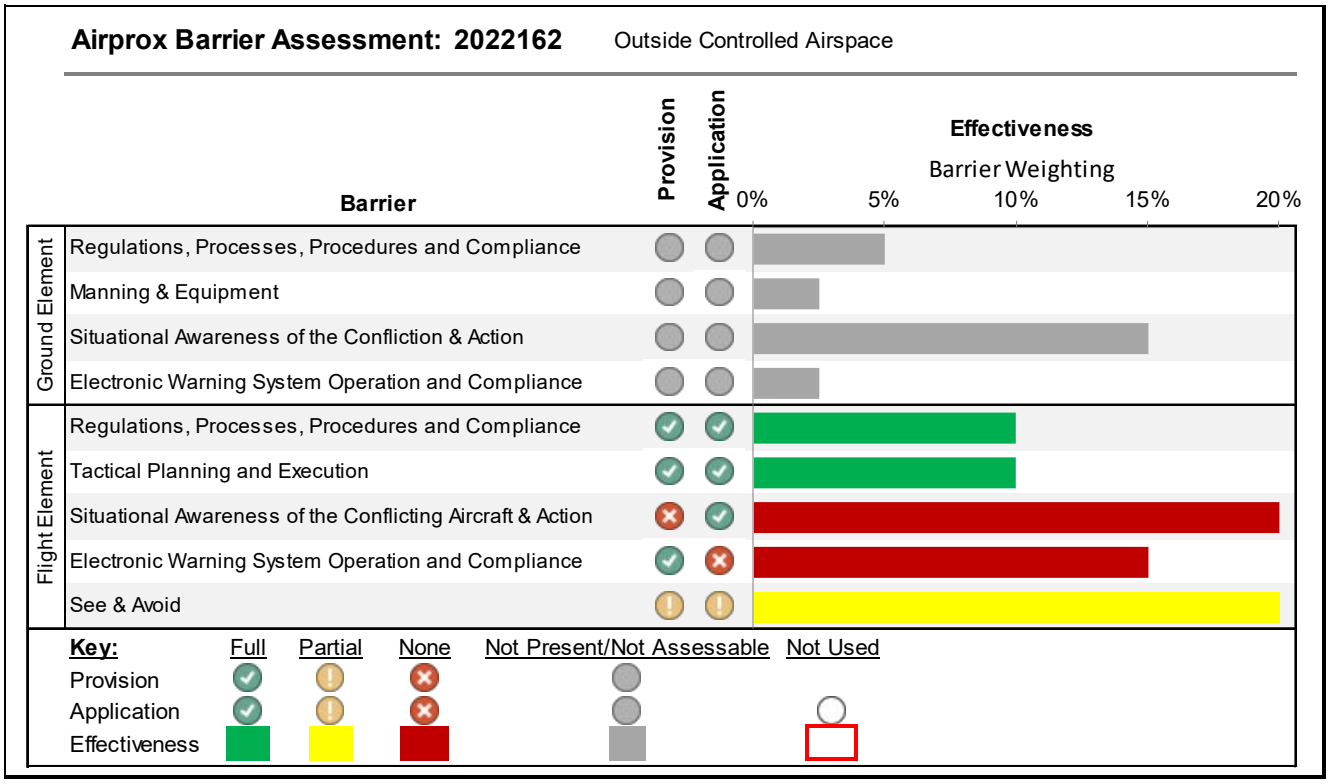
In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither pilot was aware of the presence of the other.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the EC equipment fitted to each aircraft would have been expected to have provided an alert to the presence of the other, but no alert was reported.

See and Avoid were assessed as **partially effective** because the pilot of the Spitfire had been focussed on the timing of their holding manoeuvre in preparation for commencing an air-display and had effectively not sighted the EV97. The nose cowling of the Spitfire had obscured the EV97 from the view of the Spitfire pilot and this had led to late avoiding action when it was sighted.



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