

AIRPROX REPORT No 2024090

Date: 15 May 2024 Time: 1352Z Position: 5046N 00116W Location: IVO Cowes

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Spitfire	DA42
Operator	Civ Comm	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	IFR
Service	Listening Out	AFIS
Provider	Solent	Lee-on-Solent
Altitude/FL	FL018	FL018
Transponder	A, C, S	A, C, S
Reported		
Colours	Green, Brown	White
Lighting	Nav	Nav
Conditions	VMC	VMC
Visibility	5-10km	>10km
Altitude/FL	1800ft	1600ft
Altimeter	QNH (1005hPa)	QFE (1004hPa)
Heading	290°	025°
Speed	240kt	130kt
ACAS/TAS	PilotAware	Not fitted
Alert	None	N/A
Separation at CPA		
Reported	150ft V/10m H	Not Seen
Recorded	0ft V/0.2NM H	



THE SPITFIRE PILOT reports that the flight was planned to the Needles, with a passenger in the rear seat. They planned to call Solent to ask for penetration of their airspace to allow them to remain above 3000ft to mitigate collision risk. However, Solent was busy so they adopted the listening squawk and descended to remain below the Solent CTA. The CWS was displaying multiple traffic contacts. The aircraft cruising speed in the Spitfire is high, so reaction time was reduced. They saw the aircraft on their left, 100m away, just above, converging. They realised it would pass above, but initiated a descent and noted that it continued towards the north after it passed behind their aircraft. After landing at [airfield], they called [DA42 company] to ask whether they had a DA42 airborne at that time. They also found the registration of the other aircraft on FlightRadar24. They managed to speak to one of the two pilots, who confirmed that they did not see the Spitfire.

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

THE DA42 PILOT reports that the flight was an IR skill test and had departed on an IFR flight plan routing to France for approaches, and then returned on a second IFR flight plan, via ORTAC, direct ELDER to [destination], at 3000ft. London Information was the ATC service used from mid-channel until the south coast of the IOW, at which point Lee-on-Solent Information was contacted and descent begun to cross Cowes VRP at 1600ft. They then continued to descend to circuit height of 1000ft, to begin the downwind leg for RW23R. Cowes VRP is used by arriving traffic to Lee-on-Solent from the west and south, to remain clear of Southampton CAS. ATC [sic] at Lee stated no reported traffic on first contact. The PF was not subject to any vision restriction at the time, visibility was good, in VMC. After the flight, the pilot of the Spitfire contacted them and said that the two aircraft had passed very close when north of Cowes. The Spitfire pilot estimated that their aircraft had passed below [the DA42] with approximately 100ft separation. Neither of the DA42 pilots saw the Spitfire. Subsequently, they viewed the traces of both aircraft on FlightRadar24 and also the recorded track of the DA42 on SkyDemon on their iPad. The trace of the Spitfire, (which was complete), showed the aircraft flying along the north coast of the

IOW from Ryde at about 1350, passing Cowes at 1352 on an approximate heading of 290° at the point where the tracks cross. Unfortunately, the trace from the DA42 stopped painting at 1350 but, referring to the recorded flight track on their SkyDemon, it showed the DA42 on a heading of approximately 025° at 1600ft. The DA42 is not fitted with any electronic conspicuity device. The pilot of the Spitfire said in their conversation that they had an EC device, but that they had not received any warning. Their observation would be that, with the position from which the Spitfire approached the DA42, the wing and engine nacelle of the DA42 would have obscured the Spitfire during its track from Ryde.

THE LEE-ON-SOLENT AFISO reports that the DA42 pilot called on the frequency at 1352, the Spitfire was not on frequency. Lee-on-Solent is not equipped with radar and an Airprox was not declared on the frequency at the time and therefore they had no awareness or knowledge about the incident.

Factual Background

The weather at Solent was recorded as follows:

METAR ECHI 151350Z 13009KT 080V210 9999 SCT025 17/09 Q1005=

Analysis and Investigation

Southampton ATC Occurrence Investigation

Neither aircraft was receiving a service from Solent Radar, the Spitfire was displaying a Solent frequency monitoring squawk, but was not under a service. Whilst observing the radar recordings the following timeline was recorded:

1351:18 - the Spitfire had just passed Ryde tracking west towards Cowes, descending through 2300ft. The DA42 was overhead Newport tracking towards Cowes, descending through 2000ft.

1351:40 - the Spitfire was north of Fishbourne passing 1900ft in the descent, tracking westbound. The DA42 was approaching Cowes passing 1800ft in the descent, tracking northbound. At this point the Spitfire was bearing 084° at 2.9NM from the DA42.

1352:00 - the Spitfire was now bearing 082° at 1.5NM from the DA42, both aircraft were approaching East Cowes. The Spitfire was at 1500ft and DA42 was passing 1700ft.

1352:15 - the Spitfire was now bearing 071° at 0.7NM from the DA42, with both aircraft indicating 1600ft.

1352:18 - the Spitfire was now bearing 090° at 427m from the DA42, both aircraft indicating 1600ft. The Spitfire was in a left turn to pass behind the DA42. This was the closest point observed on radar, with the next sweep of the radar placing the Spitfire 258° at 529m from the DA42.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and both aircraft could be seen and identified using Mode S data. At 1351:38 (Figure 1) the Spitfire was indicating FL021 and heading west, with the DA42 indicating FL020 heading north-northeast, the two aircraft were approximately 3NM apart at this point.

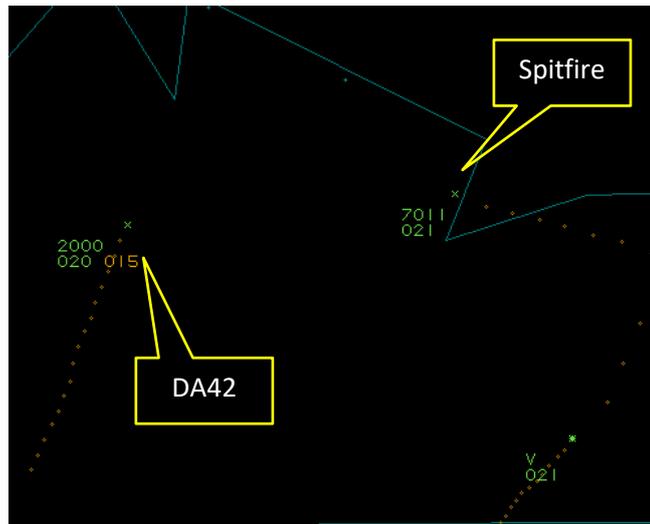


Figure 1 – 1351:38

The two aircraft continued to close, both in a slow descent, see Figure 2.

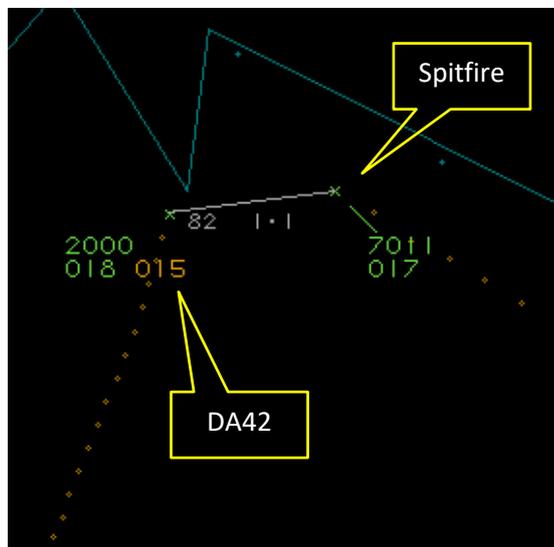


Figure 2 - 1352:06

CPA occurred between radar sweeps when, according to the NATS radar replay, the Spitfire crossed ahead of the DA42, see Figures 3 and 4.

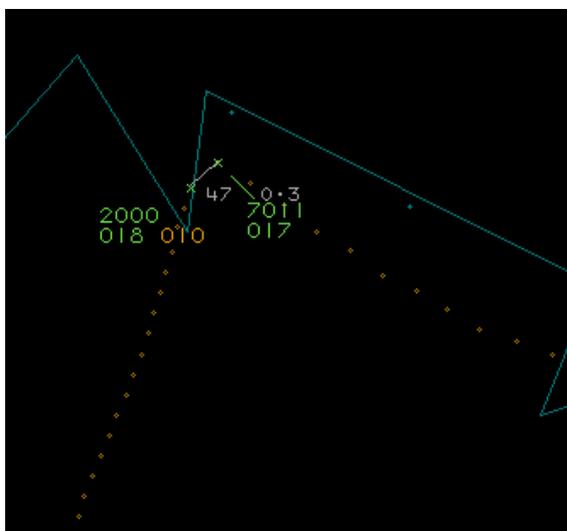


Figure 3 – 1352:18

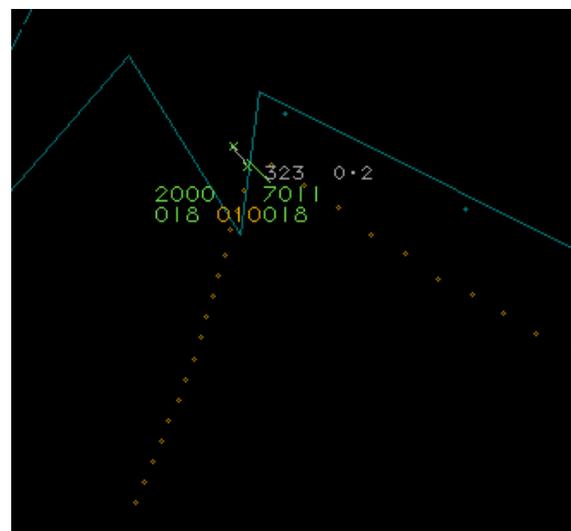


Figure 4 – Radar CPA 1352:22

The Spitfire and DA42 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 DA42 pilot was required to give way to the Spitfire.²

Summary

An Airprox was reported when a Spitfire and a DA42 flew into proximity in the vicinity of Cowes at 1352Z on Wednesday 15th May 2024. The Spitfire pilot was operating under VFR in VMC, not in receipt of an ATS, the DA42 pilot was operating under IFR in VMC, in receipt of an AFIS from Lee-on-Solent.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings and reports from the air traffic controller and the AFISO 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 considered the actions of the Spitfire pilot. They had reported that they had intended to request a radar service from Southampton, however, the frequency had been busy and so instead they had remained outside CAS and had listened out on the frequency. Members discussed whether there had been a better option for the pilot to have received a service but, noting that although Bournemouth was the LARS provider in the area, the IOW was on the edge of their cover and it was too far south for Farnborough LARS. Receiving a Basic Service from London Information would not have provided the Spitfire pilot with any more information, therefore the Board acknowledged that, as unsatisfactory as it had been, the Spitfire pilot had been unlikely to get a better ATS and therefore, listening out on the Solent frequency had been their only option. The Board noted that the Spitfire had been fitted with a CWS, which would have been expected to alert to the transponder signals from the DA42, but no alert had been received (**CF3**). Therefore, without an ATS or an alert from their CWS, the Spitfire pilot had not received any prior situational awareness that the DA42 had been in the vicinity (**CF2**). Members thought that it would have been difficult for the Spitfire pilot to have seen the white DA42 above them, against the cloud, so it was unsurprising that the Spitfire pilot had seen the DA42 late (**CF4**). They noted that the Spitfire pilot had done all that they could to mitigate a collision risk, including following the CAA Skyway Code advice and flying with the coast on their left.³

Turning to the actions of the DA42 pilot, members noted with disappointment that the DA42 was a training aircraft which had not been equipped with any form of CWS and so, because the DA42 pilot had been receiving a Basic Service from a unit not equipped with radar, the pilot had not received any prior situational awareness that the Spitfire had been in the vicinity (**CF2**). Members briefly discussed the ATS situation again, noting that the DA42 pilot had been IFR, transitioning to VFR, and yet there had not been any surveillance-based ATS available to them, meaning that their only option had been to call Lee-on-Solent for AFIS. Members agreed that the two aircraft had been on a constant relative bearing, making visual acquisition difficult, probably not helped by the camouflage markings on the Spitfire. Furthermore, the large nacelle on the DA42 may have obscured the Spitfire as it had approached from the starboard side. Nevertheless, they thought that this only served to highlight the importance of the need to counter any potential obscuration with effective lookout techniques. In this event, neither of the pilots on-board the DA42 had seen the Spitfire (**CF5**).

The Board briefly looked at the actions of the Lee-on-Solent AFISO; they had been operating without a radar and the Spitfire had not been known to them, therefore no Traffic Information could have been passed to the DA42 pilot (**CF1**).

When determining the risk, the Board considered the reports from both pilots together with the radar replay. Members noted that this had been a late sighting and a non-sighting by the pilots, and some members thought that this meant that there had been a risk of collision. Others countered that the late

¹ (UK) SERA.3205 Proximity.

² (UK) SERA.3210 Right-of-way (c)(2) Converging.

³ CAA Skyway Code Airspace, Pg 63. <https://www.caa.co.uk/publication/download/16112>

action by the Spitfire pilot had resulted in a separation of 0.2NM, which had averted a risk of collision. In the end members agreed that, although safety had been degraded, there had been no risk of collision; Risk Category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024090			
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				
• Situational Awareness of the Conflicting Aircraft and Action				
2	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				
3	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				
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
5	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

Degree of Risk: C.

Safety Barrier Assessment⁴

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 DA42 had been receiving an AFIS from the Lee-on-Solent AFISO, who was not equipped with any means of surveillance to be able to monitor the aircraft.

Flight Elements:

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

Electronic Warning System Operation and Compliance were assessed as **ineffective** because although it would have been expected that the CWS on the Spitfire would be able to detect the DA42, no alert had been received.

See and Avoid were assessed as **partially effective** because although it had been a non-sighting by the DA42 pilot, the Spitfire pilot had seen the DA42 late and had managed to take avoiding action to increase the separation.

⁴ 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: 2024090		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							