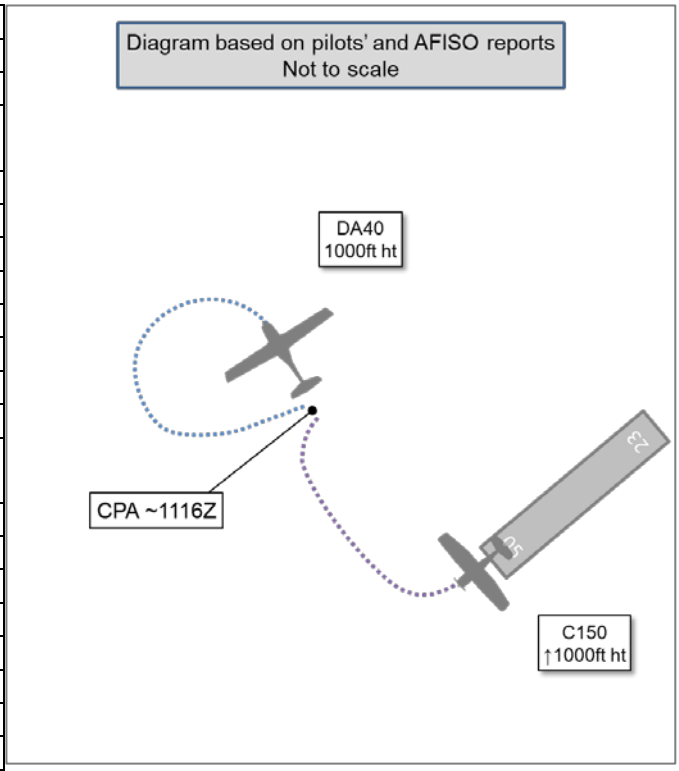
AIRPROX REPORT No 2021145

Date: 10 Aug 2021 Time: 1116Z Position: 5049N 00115W Location: Lee-on-Solent

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	DA40	C150
Operator	Civ FW	Civ FW
Airspace	Lee-on-Solent ATZ	Lee-on-Solent ATZ
Class	G	G
Rules	VFR	VFR
Service	AFIS	AFIS
Provider	Lee-on-Solent	Lee-on-Solent
Altitude/FL	NK	NK
Transponder	A, C, S	A, C, S
Reported		
Colours	White	White, blue
Lighting	Nav, strobes, landing	Nav, strobe
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1000ft	1000ft
Altimeter	QFE (1015hPa)	QFE (NK hPa)
Heading	Steep left turn	320°
Speed	100kt	70kt
ACAS/TAS	TAS	Not fitted
Alert	TA	N/A
Separation		
Reported	0ft V/15m H	50ft V/~100m H
Recorded	NK	



THE DA40 INSTRUCTOR reports conducting a training flight at Lee-on-Solent. The student had just completed a touch-and-go, however, during the crosswind leg, an aircraft joining downwind passed directly in front of them with minimal separation. The instructor took control and transmitted that they were going to orbit at the start of the downwind leg to give more separation to the traffic in front (a PA28 flying slower than them). Lee Information acknowledged the call. As they were completing the orbit to continue downwind, the instructor saw an aircraft on the upwind leg which turned early to crosswind and appeared to be trying to overtake them. The other aircraft was head-on and then started to turn right and, because the instructor was already in a left hand turn, they increased the angle of bank when they saw the left side of the other aircraft very close in front.

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

THE C150 PILOT reports that the circuit at Lee-on-Solent was busy with a number of visiting aircraft, as well as home based aircraft performing touch-and-goes and landings. The AFISO was informed that they intended to complete a single circuit with a touch-and-go, and then depart to a local airfield. There was an expected delay of some minutes before the AFISO advised that they could enter RW23 and take-off at their discretion. There were at least four other aircraft in the circuit, with two to join. They performed a standard take-off and climb-out from RW23, turned right onto the crosswind leg at the defined point for the circuit, climbed to 1000ft and established straight and level flight on the crosswind leg. They then saw a DA40 in a right-hand medium banked-turn in about the left 10/11 o'clock position, outside the circuit boundary at the crosswind/downwind corner. It appeared to be orbiting as it continued the turn from pointing downwind to pointing head-on, then slightly away. The DA40 then straightened up and its course appeared to be more converging, i.e. opposite direction to the right-hand circuit crosswind leg. The C150 pilot was unclear as to their intentions and turned to the right to keep clear. They cut the crosswind corner of the circuit and entered the downwind. At this stage the relative bearing

was 9 o'clock and they lost sight of the DA40 after it passed behind the left wing. They believed the DA40 pilot saw them well after they had seen the DA40. The R/T was busy and the C150 pilot did not have the opportunity to communicate at the time because they were focussed on the other aircraft throughout, were unsure of its immediate intentions and were manoeuvring to ensure that they could maintain clearance from the other aircraft. The C150 pilot continued with the circuit but the runway was occupied so performed a go-around. On turning crosswind they informed the AFISO that they would be departing; they felt that the circuit was too congested to attempt another touch-and-go.

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

THE LEE-ON-SOLENT AFISO reports that the visual circuit was very busy with 6 aircraft. The DA40 pilot conducted a number of touch-and-goes and, at 1115Z advised they were "just going to do one left hand orbit at the beginning of the downwind leg". The AFISO acknowledged and advised the pilot that there were 3 aircraft reported ahead of them and one reported behind, which the pilot acknowledged. At 1116Z the pilot transmitted "one traffic seems to have cut in front of us". The aircraft behind the DA40 was flying the correct circuit path and so turned downwind in the usual position, which they believed to be the aircraft the DA40 pilot was referring to. A transmission was made in response by an unidentified pilot (believed to be the C150 pilot but they did not use a callsign) stating "yeah in the circuit". The AFISO attempted to look for the traffic but did not see the proximity of the aircraft. At 1117Z, the DA40 pilot advised they were leaving the circuit and would re-join downwind via Calshot VRP.

Factual Background

The weather at Southampton was recorded as follows:

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METAR EGHI 101120Z 23006KT 180V270 9999 SCT038 21/09 Q1016=
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Analysis and Investigation

UKAB Secretariat

The DA40 and C150 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] An aircraft operated on or in the vicinity of an aerodrome shall observe other aerodrome traffic for the purpose of avoiding collision, conform with or avoid the pattern of traffic formed by other aircraft in operation and, except for balloons, make all turns to the left, when approaching for a landing and after taking off, unless otherwise indicated, or instructed by ATC[2]. The Airprox was not captured on radar replay due to the limitations of radar coverage at low level.

The Lee-on-Solent AIP entry, EGHF AD 2.21 Noise Abatement Procedures, states as follows:

a. The circuit patterns are drawn to avoid noise sensitive areas (avoid overflying Stubbington and Hill Head (which are inside the circuit) and Fareham South-West (on the NW corner outside the circuit)).
b. When departing Runway 23, track the extended centre-line to avoid overflying housing near the threshold of Runway 05.
c. …

EGHF AD 2.22 Flight Procedures, 1 Circuits, states as follows:

a. Circuits – Main Runways 05/23
    i. Aircraft arriving from the north are suggested to join via Wickham VRP, for a downwind or via the Titchfield Gyratory for right base Runway 23 remaining west and outside Fleetlands ATZ and avoiding built up areas. Straight-in-Approach Runway 23 - call Fleetlands Information 135.700 MHz for ATZ transit prior to Wickham VRP. Standard overhead joins are available on request with Lee Information and are dependent on the activity of the Warbird circuit. Please see the pilots brief at www.solentairport.co.uk/solent_airport/pilotbriefing.aspx.

[1] (UK) SERA.3205 Proximity.
[2] (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.

ii. Circuits at 1000 FT AAL - LH on Runway 05 and RH on Runway 23. Warbird circuit at 1200 FT AAL - RH on Runway 05 and LH on Runway 23.

The Lee-on-Solent website[3] provides the following circuit diagram:

Summary

An Airprox was reported when a DA40 and a C150 flew into proximity near Lee-on-Solent at about 1116Z on Tuesday 10th August 2021. Both pilots were operating under VFR in VMC, both in receipt of an AFIS from the Lee-on-Solent AFISO.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, 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.

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 members first discussed the DA40 pilot's actions and agreed that an orbit in an already busy circuit at a non-ATC airfield was fraught with potential safety implications, required nigh on perfect situational awareness and relied on other pilots also having a high degree of accurate situational awareness. Members noted that regulations at some other airfields stipulate a maximum number of aircraft in the visual circuit and felt that the constrained ATZ at Lee-on-Solent may also warrant such restriction. In the event, both the DA40 and C150 pilots flew their circuits in such a manner that they did not integrate with each other (**CF1**, **CF4**). The Board felt that the DA40 pilot was unwise to make an orbit (**CF2**, **CF3**) but also noted that the C150 pilot was not required to turn onto the crosswind leg at a particular point and could have extended upwind if they were aware that the DA40 pilot was conducting an orbit (**CF3**). The Board thought that perhaps they did not assimilate the DA40 pilot's call that they were 'just going to do one left hand orbit at the beginning of the downwind leg', which served as conflict

[3] https://www.solentairport.co.uk/aerodrome-technical-information/

information (**CF6**). However, the C150 pilot had at least generic situational awareness (**CF5**) in that they were aware there were other aircraft in the visual circuit; the DA40 pilot received a TAS warning, affording a higher level of situational awareness (**CF5**). The C150 pilot appeared to see the DA40 first and the DA40 pilot's sighting occurred at a late stage (**CF8**), but both pilots flew into such proximity as to cause concern (**CF9**). The Board members discussed the onus of integrating in the visual circuit and agreed that although the DA40 pilot's orbit was unwise, the C150 pilot had had adequate information available to avoid flying in to such proximity with the DA40. The Board agreed that separation at CPA was such that safety had been much reduced (**CF10**) but that a higher degree of consideration from both parties could have resulted in the occurrence being avoided entirely.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2021145			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Flight Elements			
	• Regulations, Processes, Procedures and Compliance			
1	Human Factors	• Use of policy/Procedures	Events involving the use of the relevant policy or procedures by flight crew	Regulations and/or procedures not complied with
	• Tactical Planning and Execution			
2	Human Factors	• Action Performed Incorrectly	Events involving flight crew performing the selected action incorrectly	Incorrect or ineffective execution
3	Human Factors	• Insufficient Decision/Plan	Events involving flight crew not making a sufficiently detailed decision or plan to meet the needs of the situation	Inadequate plan adaption
4	Human Factors	• Monitoring of Environment	Events involving flight crew not to appropriately monitoring the environment	Did not avoid/conform with the pattern of traffic already formed
	• Situational Awareness of the Conflicting Aircraft and Action			
5	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
6	Human Factors	• Understanding/Comprehension	Events involving flight crew that did not understand or comprehend a situation or instruction	Pilot did not assimilate conflict information
	• Electronic Warning System Operation and Compliance			
7	Contextual	• Other warning system operation	An event involving a genuine warning from an airborne system other than TCAS.	
	• See and Avoid			
8	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
9	Human Factors	• Incorrect Action Selection	Events involving flight crew performing or choosing the wrong course of action	Pilot flew close enough to cause concern
	• Outcome Events			
10	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.

Recommendation: Nil.

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:

Ground Elements:

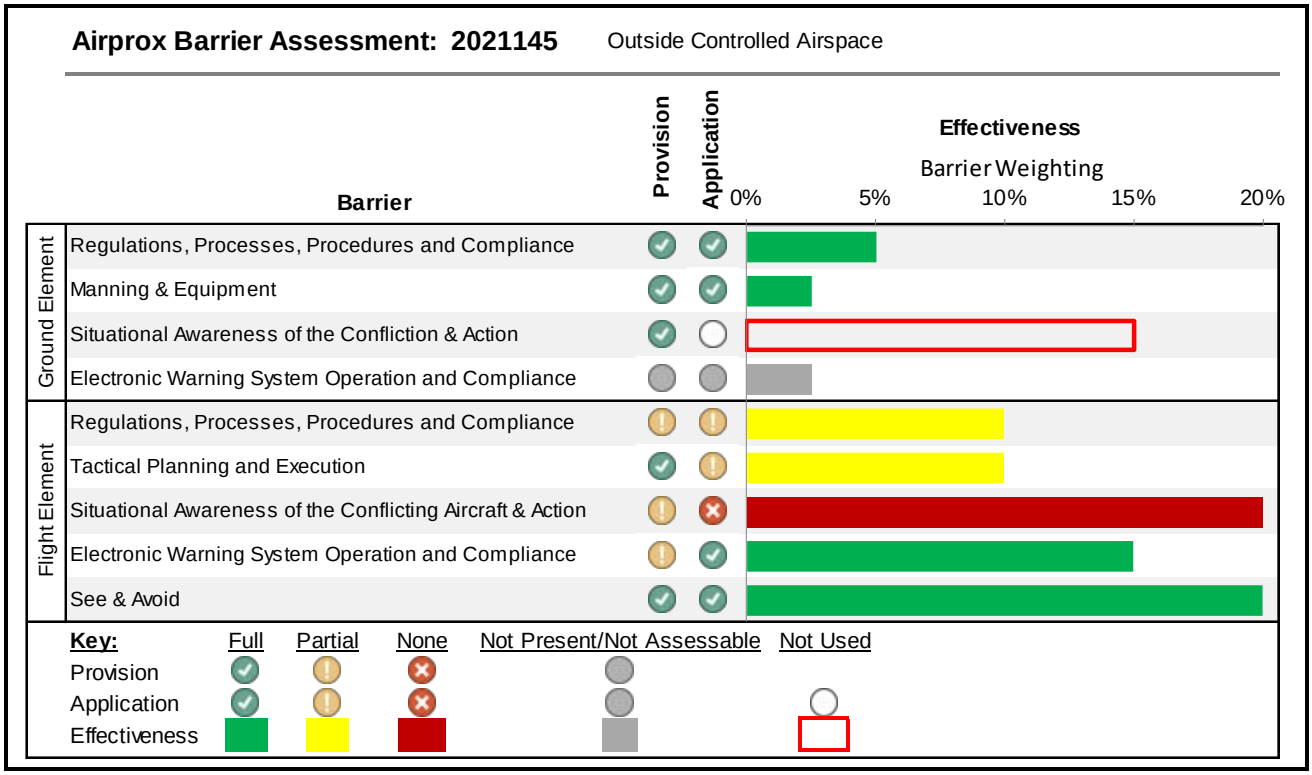
Situational Awareness of the Confliction and Action were assessed as **not used** because an AFIS does not include traffic sequencing in the visual circuit.

Flight Elements:

Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because the DA40 and C150 pilots did not integrate with each other.

Tactical Planning and Execution was assessed as **partially effective** because the DA40 pilot did not allow sufficient room for the C150 behind before commencing their orbit and the C150 pilot did not allow sufficient room for the DA40 ahead before turning on to crosswind.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither pilot was aware of the proximity or intentions of the other until at a late stage and their actions resulted in flight into close proximity.



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