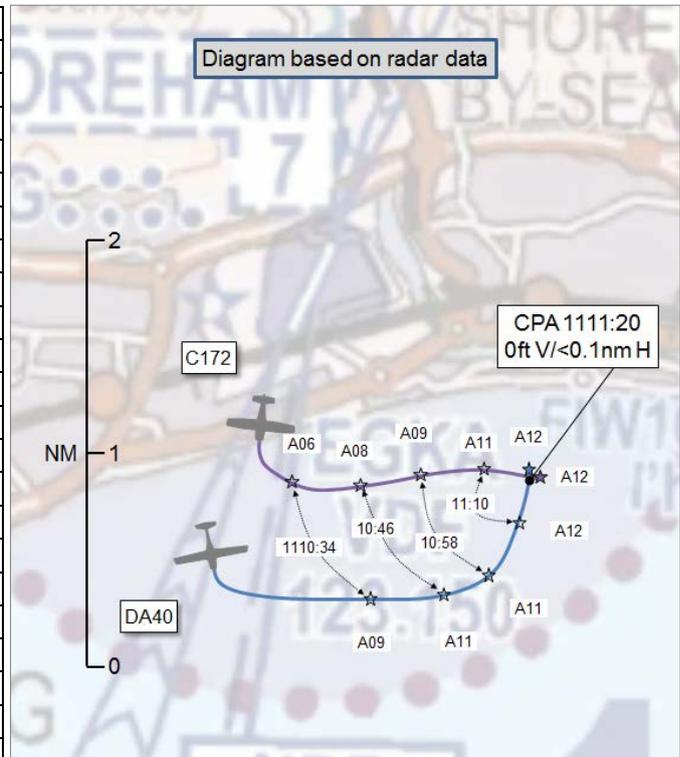


**AIRPROX REPORT No 2017181**

Date: 29 Jul 2017 Time: 1111Z Position: 5049N 00016W Location: 1nm SE Brighton City Airport

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	DA40	C172
Operator	Civ Trg	Civ Comm
Airspace	ATZ	ATZ
Class	G	G
Rules	VFR	VFR
Service	Aerodrome	Aerodrome
Provider	Shoreham	Shoreham
Altitude/FL	1200ft	1200ft
Transponder	A,C,S	A,C,S
<b>Reported</b>		
Colours	Mainly white	Mainly white
Lighting	Strobes, landing	NK
Conditions	VMC	VMC
Visibility	>10km	10km
Altitude/FL	1100ft	950-1000ft
Altimeter	QNH (1010hPa)	QNH (1010hPa)
Heading	200°	070°
Speed	100kt	87kt
ACAS/TAS	Not fitted	Not fitted
<b>Separation</b>		
Reported	50ft V/0nm H	100ft V/30m H
Recorded	<100ft V/0.1nm H	



**THE DIAMOND DA40 STAR PILOT** reports that after conducting a touch-and-go, the C172 pilot was cleared to take-off behind them. They flew a normal circuit pattern climbing to 600ft upwind and turning crosswind approximately 1nm south of the coast. He observed the C172 after its take-off crossing the railway line. They levelled at 1100ft and turned onto the downwind leg where he could no longer see the C172 upwind. At a range of approximately 100-150m he spotted the C172 to their left in their approximate 10 o'clock position climbing towards them, tracking parallel to the coast. His student initiated a climb as the C172 passed underneath them by 50-100ft. The C172 pilot proceeded to climb (afterwards reporting climbing to 1600ft) and tracked towards the centre of Brighton.

He assessed the risk of collision as 'High'.

**THE CESSNA 172 SKYHAWK PILOT** reports that, after being cleared for take-off, he climbed at full power and 85mph IAS maintaining RW20 heading until passing the coastline at 600ft. Shortly afterwards, having the aircraft on a nose-high attitude he looked out accurately before turning onto heading 070° in order to clear the ATZ as soon as possible. He did not see any other traffic approaching his flight-path. By the time the Aerodrome controller asked the DA40 pilot if he was visual with the traffic taking off he rolled out, wings level, and saw the DA40 at the same altitude slightly nose-down at 1000ft towards the right-hand side of his aircraft. Being still slow and in a climb, he decided to pitch down in order to separate himself from the incoming aircraft that apparently did not seem to perform any avoiding action. On frequency, the DA40 instructor, at the last moment when he pitched down, responded 'visual' to the Tower.

He assessed the risk of collision as 'High'.

**THE BRIGHTON CITY AERODROME CONTROLLER** reports that he cleared the C172 pilot for take-off with a left turn eastbound; the departure appeared normal, and the left turn did not cause him any concern and appeared to be in keeping with normal procedure. He turned his head away and

dealt with other matters and then heard the DA40 pilot report downwind and state that he was visual with the C172 passing underneath him. Given that the DA40 pilot should have been at circuit height (1100ft), he estimated the C172's height to be no less than 700ft given the spacing between them, and so it seemed to him that the C172 pilot had turned normally, at or above the 600ft outlined in the AIP. He advised the DA40 pilot that the C172 pilot was departing eastbound and was not a factor. The C172 pilot enquired about the DA40 pilot's intentions on the Approach frequency, which suggested to him that the DA40 may have extended their upwind leg causing a wider circuit pattern than normal, which is not uncommon for this operator. A telephone call was received that evening to advise him that the pilot of the DA40 had been instructed to file an internal SMS report. At no point, either after the 'incident' or during the telephone call was the word 'Airprox' mentioned, and it was then nearly a week since the incident had occurred.

## Factual Background

The weather at Brighton City was recorded as follows:

291120Z 22011KT 9999 FEW016 19/14 Q1010=

The Shoreham ATZ is Class G airspace from surface to 2000ft, radius 2nm. Shoreham airfield elevation is 7ft. At Shoreham airfield, departing aircraft shall not turn on course below 600 ft QNH unless approved by ATC<sup>1</sup>.

## Analysis and Investigation

### CAA ATSI

The DA40 pilot was conducting left-hand visual circuits to RW20 at Shoreham. The C172 pilot had taxied out and, at 1108:42, reported ready for departure for a local flight to the east of Shoreham. At that time the DA40 was on final approach and cleared for a touch-and-go. At 1111:52, the C172 pilot was cleared to line-up, and at 1109:11 was cleared for take-off. The area radar replay did not show either aircraft until 1110:07, when the DA40 and the C172 appeared 0.7nm apart (Figure 1).

At 1111:06 both pilots had turned left at the same time and were running parallel crosswind (Figure 2).



Figure 1 – 1007:45.



Figure 2 – 1111:06.

<sup>1</sup> UK AIP Page AD 2.EGKA-9, Paragraph 6G.

At 1111:18, the DA40 pilot had commenced a left-turn into the downwind position (Figure 3).

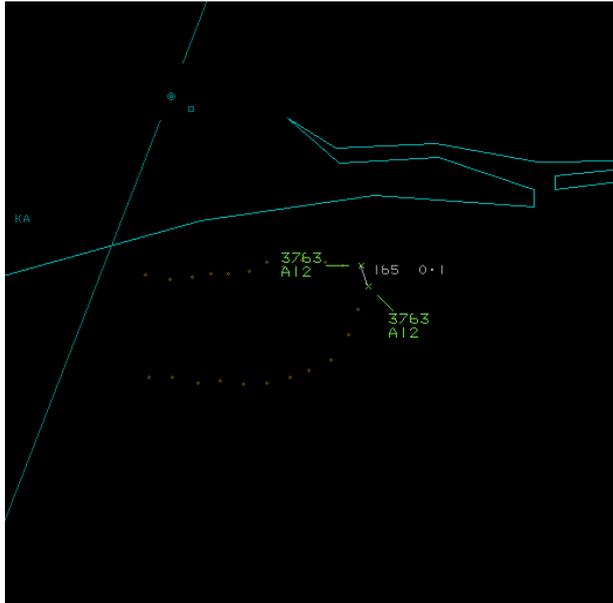


Figure 3 – 1111:18.

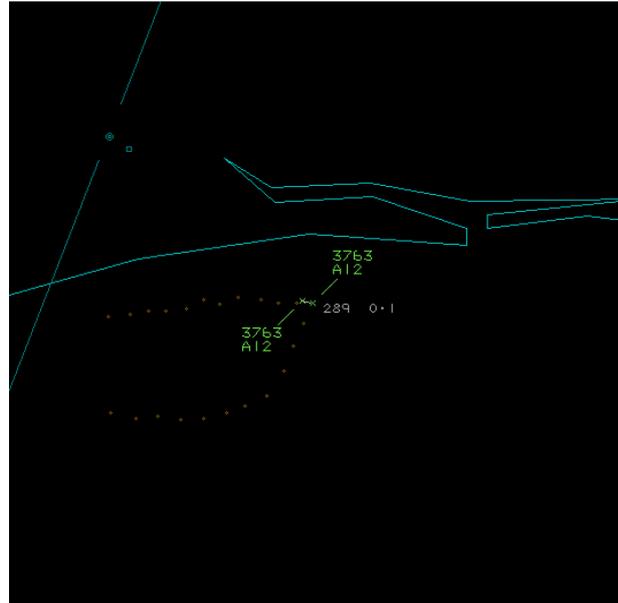


Figure 4 – 1111:20.

CPA occurred at 1111:20 (Figure 4), with the aircraft separated by less than 0.1nm laterally and less than 100ft vertically.

At 1111:22, the DA40 pilot reported downwind, and, in the same transmission, reported the C172 having under-flown them by 100ft which was acknowledged by the controller.

In accordance with CAP493<sup>2</sup>, Aerodrome Control shall:

'...issue information and instructions to aircraft under its control to achieve a safe, orderly and expeditious flow of air traffic with the objective of:

- (1) Preventing collisions between:
  - (a) aircraft flying in, and in the vicinity of, the ATZ;
  - (b) aircraft taking-off and landing.

Note: Aerodrome Control is not solely responsible for the prevention of collisions. Pilots and vehicle drivers must also fulfil their own responsibilities in accordance with Rules of the Air.<sup>7</sup>

The controller did not advise the departing C172 pilot that the DA40 ahead of it would be turning left and remaining in the circuit, nor the DA40 pilot that the C172 would be turning left to the east. Notwithstanding, because both aircraft were operating in Class G airspace, the pilots were responsible for their own collision avoidance.

### UKAB Secretariat

The DA40 and C172 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard<sup>3</sup>. If the incident geometry is considered as converging then the C172 pilot was required to give way to the DA40<sup>4</sup>. An aircraft operated on or in the vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in operation<sup>5</sup>.

### Summary

<sup>2</sup> CAP493 Section 2: Chapter 1: Aerodrome Control - Para 2.1

<sup>3</sup> SERA.3205 Proximity.

<sup>4</sup> SERA.3210 Right-of-way (c)(2) Converging.

<sup>5</sup> SERA.3225 Operation on and in the Vicinity of an Aerodrome.

An Airprox was reported when a DA40 and a C172 flew into proximity in the Shoreham ATZ at 1111 on Saturday 29<sup>th</sup> July 2017. Both pilots were operating under VFR in VMC and in receipt of an Aerodrome Control Service from Shoreham.

## **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available included reports from both pilots, the controller concerned, area radar recordings and reports from the appropriate ATC and operating authorities.

The Board first noted that both pilots were operating under VFR, in receipt of an Aerodrome Control Service; the DA40 pilot, on a training flight, was carrying out left-hand circuits to RW20 whilst the C172 pilot was departing from Shoreham, with a left turn outbound, for a local flight to the east.

After the DA40 had carried out a touch-and-go on RW20, the C172 pilot was cleared for take-off. Members noted that no information was passed to either pilot at this point about the intentions of the other, although members also noted that the DA40 pilot had reported seeing the C172 as it was crossing the railway line after departure. He did not see the C172 again until after he had turned downwind when it was then in his 10 o'clock at a range of approximately 100-150m, climbing toward. Members commented that, had the DA40 pilot been informed that the C172 was turning left and departing to the east, he may have been aware of a possible conflict, especially if he intended to delay his turn downwind. The Board opined that the DA40 pilot may have delayed his left turn onto the downwind leg more than usual because he was carrying out a training flight and the turn point could have depended on the type of exercise being carried out.

For his part, the C172 pilot reported that, after take-off, and shortly after passing the coastline, he commenced a left turn heading 070°. He reported that he had carried out a good look-out before making the turn, but had not seen any traffic to affect his route. Some members opined that if the controller had informed the C172 pilot about the DA40 pilot's intentions of turning downwind in the left-hand circuit, he may have delayed his turn until he had seen the DA40. Others commented that it was self-evident that the DA40 was ahead of him when he was cleared for take-off, and that he should therefore have delayed his turn anyway until he was certain of the DA40's position. The Board wondered whether he had made his left turn because he thought that the DA40 pilot was leaving the circuit and climbing outbound on the runway heading.

In assessing the cause and risk of the incident, members noted that the only restriction after departing RW20 was not to turn on course below 600ft unless approved by ATC. It appeared to the Board that both pilots had complied with this instruction. Despite not receiving any information from ATC, the C172 pilot should have observed and avoided the DA40. Accordingly, the Board quickly decided that the cause of the Airprox was that the C172 pilot had climbed into conflict with the DA40 downwind. Notwithstanding, the Board also considered that the lack of Traffic Information to both pilots was a contributory factor. Turning to the risk, members noted that both pilots had assessed that the risk of a collision was high and the Board agreed with their assessment. Both pilots had only seen each other at a late stage and, although they did take avoiding action, CPA was undoubtedly very close; less than 100ft vertically and 0.1nm horizontally. As a result, the Board determined that safety had been much reduced below the norm, and they assessed the risk as Category B.

## **PART C: ASSESSMENT OF CAUSE AND RISK**

Cause: The C172 pilot climbed into conflict with the DA40 downwind.

Contributory Factor: Lack of Traffic Information from ATC to either pilot.

Degree of Risk: B.

## Safety Barrier Assessment<sup>6</sup>

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

### ANSP:

**Regulations, Processes, Procedures and Compliance** were considered as **ineffective** because the Shoreham controller did not pass Traffic Information or inform either pilot of the other's intentions.

**Situational Awareness and Action** were assessed as **ineffective** because the controller was not aware that the aircraft had been likely to conflict until the DA40 pilot reported that the C172 had passed underneath him.

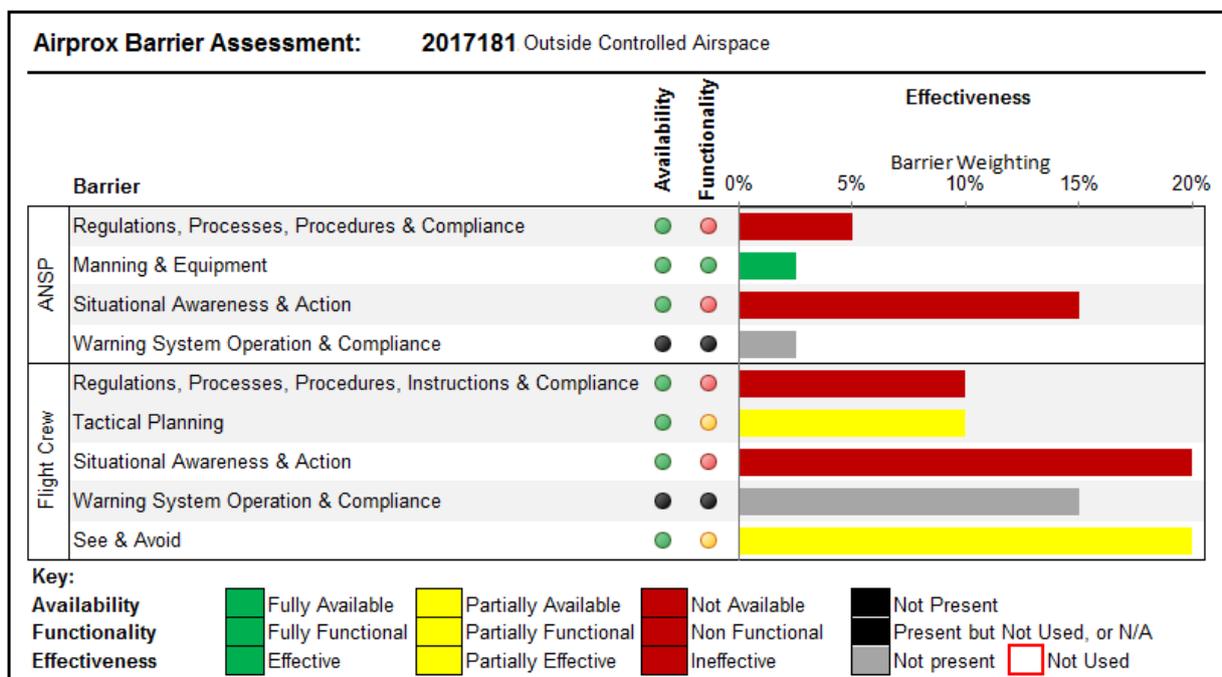
### Flight Crew:

**Regulations, Processes, Procedures and Compliance** were considered **ineffective** because the C172 pilot did not integrate with the DA40's circuit pattern.

**Tactical Planning** was assessed as **partially effective** because the C172 pilot did not ensure that his departure track deconflicted effectively with the circuit pattern.

**Situational Awareness and Action** were considered as **ineffective** because, although the C172 was aware that the DA40 had departed ahead of him, he did not monitor its departure path.

**See and Avoid** was **partially effective** because both pilots obtained only a late sighting of the other aircraft and both pilots had to take emergency avoiding action in the short time available.



<sup>6</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).