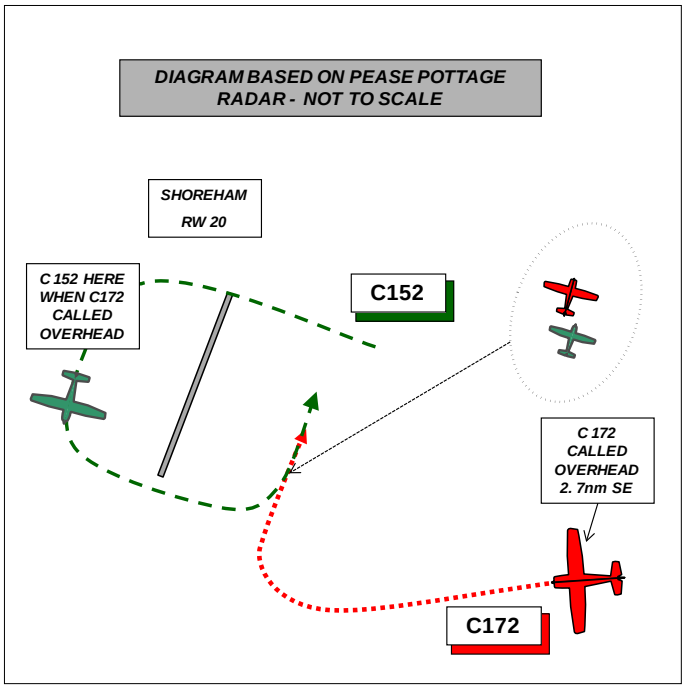
AIRPROX REPORT No 2011031

Date/Time: 9 Apr 2011 1612Z (Saturday)

Position: 5050N 00019W (Shoreham DW RW 20 - elev 7ft)

Airspace: Shoreham ATZ (*Class: G*)

	Reporting Ac	*Reported Ac*
Type:	C152	C172
Operator:	Civ Trg	Civ Comm
Alt/FL:	1100ft (QFE 1022mb)	1100ft
Weather:	VMC CLBC	VMC CAVOK
Visibility:	>10km	10km
Reported Separation:	0ft V/40m H	NR
Recorded Separation:	NR	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE C152 PILOT reports flying a VFR instructional flight in a blue and white ac, in contact with Shoreham TWR, squawking 7000 [he thought] but Mode C was not fitted. Having been cleared for an overhead (O/H) join, he was in the overhead at 2000ft descending to be downwind at 1100ft, when a C172 [with a C/S that he recognised] reported at the Brighton VRP and was also cleared for an O/H join after requesting a L base join. He [the C152 pilot] descended dead side and flew cross-wind at the cct height of 1100ft then turned downwind heading 020° at 90kt. As he was rolling out of the turn onto downwind from crosswind he saw the C172 appear in his 11 o'clock, 40m away, descending onto downwind from above. The C172 then reported downwind before him and ATC then asked for his position; he responded that he was downwind behind the C172 that had just cut in front of him.

He reported the Airprox to TWR on the frequency in use and slowed his ac by using flap to reposition behind the C172. He assessed the risk as being medium.

After landing he went to the TWR and explained that the C172 had descended on the live side onto downwind traffic having not reached the dead side after being cleared for the overhead join. The C172 pilot reported at Brighton when he [the C152 pilot] was already in the overhead, leading him to believe that there would be no conflicting traffic.

THE C172 PILOT reports that at the time of the reported Airprox, he was flying a VFR local flight, squawking with Mode S and rejoining the Shoreham cct and in communication with TWR. He did not hear any Airprox call on the RT or receive any notification at the time; furthermore the Airprox reporting form was sent by email and went directly to his 'junk' folder so he did not see it for over a week.

He believes that the other ac came close behind him just after he had joined the cct at 1100ft.

He flew two O/H joins that day descending on deadside and crossing exactly over the upwind end of the RW; he also joined via base and cross-wind. He recalls that other ac had been flying wide ccts,

not slowing down expeditiously and not making RT calls in the correct positions. On occasion ac were flying outside the ATZ boundary which made sequencing difficult. Since he was not given the timing of the incident, he could not recall the precise details and he saw many ac as Shoreham is always busy on Saturdays; however, he always slows down to achieve correct spacing with other ac. He does recall that on that day the cct sequencing was becoming hazardous due to ac flying wide ccts, others joining wide upwind, (not across the upwind threshold) and some flying standard O/H joins.

He did not see the other ac but assessed the risk as being low.

ATSI reports that the Airprox occurred in the Class G airspace of the Shoreham ATZ which is a circle of 2nm radius centred on RW 02/20 and extending to 2000ft aal (7ft).

The Shoreham controller was operating a combined Aerodrome and Approach control position, without the aid of surveillance equipment and RW20 was in use with a left hand traffic pattern. The controller reported the workload as being high but due to a staff shortage he was unable to split the two positions. As part of the tactical management of the circuit, the controller was instructing ac to join overhead which allowed them to position sensibly into the busy traffic pattern.

The UK AIP page AD 2-EGKA-1-7 (29 Jul 10), paragraph 6, states:

> 'c) Circuit heights are 1100ft aal for all runways.
>
> d) Variable circuits at discretion of ATC.
>
> e) Unless otherwise instructed aircraft joining the circuit will overfly the aerodrome maintaining 2000ft aal, until instructed to descend to circuit height on the inactive (dead) side of the runway in use and join the circuit by crossing the upwind end. Pilots should note that there would frequently be helicopters operating both 'liveside' and 'deadside' in the ATZ up to 600ft'.

CAA ATSI had access to radar recordings provided by NATS Swanwick and written reports from the controller and pilots.

The weather for Shoreham was:

> METAR EGKA 091550Z 13010KT CAVOK 14/10 Q1023=
> METAR EGKA 091650Z 11005KT CAVOK 14/10 Q1022=

At 1605:30 the C152 in receipt of a BS, reported N of Brighton pier at 2700ft and requested a join for ccts. The TWR controller replied, *"(C152)c/s roger circuits approved report er overhead at two thousand feet Q F E one zero two two",* the pilot responded, *"Q F E one zero two two report overhead (C152)c/s.*"

At 1608:30, the C172, in receipt of a BS, called at Brighton pier and requested a left base rejoin but TWR replied, *"(C172)c/s overhead join at the moment I'll advise if I can improve Q F E one zero two two"* and the pilot responded, *"overhead join (C172)c/s.*"

Using Mode S the C172 was observed on the radar recording approaching from the E.

ATSI noted that the controller did not obtain a readback of the QFE, did not give the RW in use, the cct direction or traffic information; however, the RT loading was high and it was evident that the circuit was extremely busy.

At 1609:40 the C152 pilot reported overhead and TWR responded, *"(C152)c/s descend deadside report downwind"* and the pilot acknowledged, *"report deadside (C152)c/s".* It is not possible to identify the C152 using the radar recording; the pilot's report states that the transpoder was selected

ON with a code of 7000, however a primary only contact (with no SSR) can be seen approaching the overhead from the E co-incident with the RTF reports made by the C152 pilot.

At 1609:50 the radar recording shows the C172, 4.4nm E of the airfield indicating FL012, and following the coastline Westbound.

At 1611:02 the C172 reported overhead but the radar recording shows it was positioned 2.7nm SE of the airfield tracking W at FL016 (1843ft alt). The TWR controller responded, *"(C172)c/s descend deadside report downwind"* and the pilot acknowledged saying, *"descend deadside report downwind (C172)c/s".* At the same time, the primary contact is observed passing 0.5nm SW of the airfield tracking E and crossing the upwind end of the RW.

At 1611:46 radar recording shows the C172, 1.4nm SE of the airfield in a right turn at FL014 (Alt 1643ft), towards the begining of the downwind leg with the primary contact in the crosswind position, tracking E with the ac 1nm apart and converging; the radar return on the primary contact is then lost.

At 1612:32, radar recording shows the position of the C172 is 1.2nm to the E of the airfield, the pilot reporting, *"(C172)c/s downwind to land".* During the investigation, the controller stated that he expected both ac to join overhead in sequence and was not expecting the C172 to be ahead. The TWR controller then requested the position of the C152 saying, "(*C152) report your position"* and the pilot replied, *"(C152)c/s just er turned downwind been cut up by the Cessna*"; the C152 pilot was then instructed to follow the C172.

The Manual of Air Traffic Control, Part 1, Section 2, Chapter 1, Page1 Paragraph 2.1 states:

> 'Aerodrome Control is responsible for issuing information and instructions to aircraft under its control to achieve a safe, orderly and expeditious flow of air traffic and to assist pilots in preventing collisions between:
> a) aircraft flying in, and in the vicinity of, the ATZ'

The controller's workload was high and in order to ensure that traffic was sequenced appropriately into the busy traffic pattern, he instructed both pilots to join overhead. The radar recording shows that when the C152 reported overhead, the C172 was 4.5nm E of the airfield. The overhead call from the C172 pilot was made when the aircraft was 2.7nm SE of the airfield, approaching the ATZ boundary. The C172 was then seen to route directly to the downwind position.

The C172 pilot did not correctly communicate the aircraft position to ATC. Rule 45 of the Rules of the Air (RoA), paragraph 6 (c) states:

> '…….communicate his position and height to the air traffic control unit, ...at the Aerodrome on entering the zone and immediately prior to leaving it.'

The C172 pilot did not comply with the controller's instruction to join overhead the airfield. Rule 45, paragraph 3 states:

> 'If the aerodrome has an air traffic control unit the commander shall obtain the permission of the air traffic control unit to enable the flight to be conducted safely within the zone.'

Further Rule 12 (a) of RoA, states:

> 'the commander of the aircraft……shall:
> (a) conform to the pattern of traffic formed by other aircraft intending to land at that aerodrome or keep clear of the airspace in which the pattern is formed'

UKAB Note (1): Although the C172 shows on the radar recording (as outlined above in the ATSI report), the primary response believed to be the C152 had disappeared before the CPA. The separation could not therefore, be determined.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, transcripts of the relevant RT frequencies, radar recordings, reports from the air traffic controller involved and reports from the appropriate ATC authorities.

Although Members were aware of other recent incidents at Shoreham, in keeping with current practice, this incident was assessed in isolation and without reference to other agencies or reports.

In assessing the part played in this incident by the participants, Members noted that the C152 pilot had flown 'by the book' integrating safely into the visual fixed-wing cct and as expected by the Controller.

However, the Board considered this incident to be a serious case of flying indiscipline by the C172 pilot.

There is little doubt from the reports, the RT transcript and the radar recording, that at the time of the incident Shoreham was very busy, the ccts being flown were not all standard and the controller was working to his capacity. A GA Member observed that when non-radar equipped airfields are busy and the airspace permits, standard overhead joins are a straightforward way of ensuring safe sequencing of ac joining the visual cct and, wisely in the view of Members, the Controller elected to implement this. The Shoreham AIP entry, as detailed in the ATSI report above, makes it clear that, unless otherwise approved by ATC, this is the preferred method of joining the Shoreham cct; in this case ATC specifically and clearly rejected the C172 pilot's request to joinon left base, due to the heavy traffic load, and the pilot read-back the instruction indicating that he fully understood that he was required to join over head. Notwithstanding this instruction, Members agreed that there was no doubt that the C172 pilot had disregarded it, gave inaccurate position reports contrary to ROA Rule 45, and, as clearly described in the ATSI report, proceeded to join directly downwind. Furthermore, he did not integrate safely into the visual circuit pattern being formed by ac ahead (the C152) as required by the ROA Rule 12. Had the C172 pilot joined as instructed by the Controller, Members agreed unanimously, that the incident would most likely not have occurred.

A GA Member pointed out that, although ATC procedures might sometimes seem lengthy and inefficient, they are designed to ensure safety even in the busiest scenarios.

The Board was informed by the ATSI Advisor that the Controller was not aware that the C172 had joined the visual circuit downwind when he submitted his report in response to the reported Airprox; he became aware of the geometry of the Airprox only when it emerged during the investigation. There was some discussion by Controller Members as to whether the Controller could have noticed that the C172 pilot was not complying with his instruction to join overhead. They noted however, the high workload, that the control position faces in the opposite direction to that of the C172's approach and has a restricted view behind and none overhead; that being the case Members agreed that it would be unreasonable to expect the Controller to note that the C172 was not flying an overhead join and to attempt to correct the situation.

In assessing the risk, Members noted that the C152 did not see the C172 until it appeared 40m away in his 11 o'clock, descending from above; in the absence of any information to the contrary, it was accepted that this estimate of range was accurate. That being the case the C152 pilot was not in a position to take any avoiding action to influence events. Since during the C172's turn onto downwind the C152 would have been obscured by the former's floor then, on rolling out, it would be almost directly below, the C172 pilot did not see the C152 before the CPA.. In these circumstances there was, in the Board's unanimous view, an actual risk that the ac would have collided.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The C172 pilot did not comply with the ROA or ATC instructions and gave incorrect position reports, flying into conflict with the C152 which he did not see.

Degree of Risk: A.