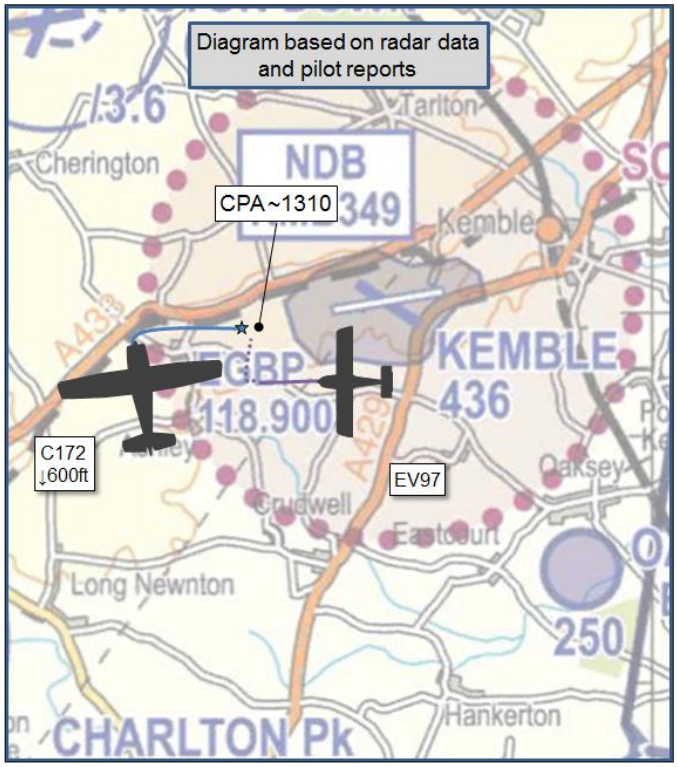
AIRPROX REPORT No 2016093

Date: 28 May 2016 Time: 1310Z Position: 5140N 00205W Location: Kemble

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	C172	EV97
Operator	Civ Trg	Civ Trg
Airspace	Kemble ATZ	Kemble ATZ
Class	G	G
Rules	VFR	VFR
Service	Information	Information
Provider	Kemble	Kemble
Altitude/FL	NK	NK
Transponder	A, C	
Reported		
Colours	White, Red	
Lighting	Strobes, Nav, Beacon	
Conditions	VMC	VMC
Visibility	7km	
Altitude/FL	600ft	
Altimeter	QFE (1000hPa)	
Heading	077°	
Speed	70kt	
ACAS/TAS	Not fitted	
Separation		
Reported	0ft V/400m H	250-350ft V 0m H
Recorded	NK	



THE C172 PILOT reports that he was in the RW08RH visual circuit at Kemble. A visiting aircraft had flown a rather wide circuit, outside of the usual traffic pattern. There was also an Ikarus in the circuit, and both the Ikarus and he flew a wider circuit to fit in with the visitor. He recalled that after the visitor had landed, the AFISO advised that the Ikarus was number 1 and the C172 number 2; because of the previous positioning behind the visiting aircraft, both pilots had to fly longer approaches than normal. Once on final, the C172 pilot flew with full flap at 60kts to enable him to keep his position as number 2, allowing the slower Ikarus in front to land. On passing 600ft, and now straight-in, an EV97 came into view in the 2 o'clock position, 400m ahead, at the same altitude and from the usual base-leg position. He assumed that the other pilot had missed that he should have been number 3 in the pattern and was conforming to the regular pattern. The C172 pilot reduced power and lowered the nose quite forcefully to keep up the airspeed. At this point the other pilot saw him and climbed to go-around on the dead-side.

He assessed the risk of collision as 'Medium'.

THE EV97 PILOT reports by email that the visibility was hazy and the circuit busy. The student was flying and they were aware that some visitors had been flying large circuits. At the end of the downwind leg, as they turned base, they discussed within the cockpit that they had not heard any calls from anyone ahead of them; the instructor took control to demonstrate the correct application of flap in the conditions to improve forward visibility. The instructor applied the flap, the nose dropped, and they saw an aircraft approaching from the final position. The instructor applied full power and climbed away as the other aircraft passed beneath them. They believed that the other pilot had not called on final.

He chose not to complete a CA1094 Airprox report, and did not assess the risk of collision.

Factual Background

The weather at Brize was recorded as follows:

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METAR EGVN 281250Z 07008KT 9999 FEW035 BKN250 18/10 Q1015 BLU NOSIG=
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Kemble Aerodrome does not employ accredited meteorological observers; however, the unofficial weather observation for Kemble Aerodrome is reproduced below:

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EGBP 281250Z 06007KT 7000 HZ FEW024 18/12 Q1013=
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Analysis and Investigation

CAA ATSI

ATSI had access to a report from the C172 pilot and the area radar recordings. In addition, the Kemble Aerodrome Flight Information Service Officer (AFISO) was interviewed by ATSI. Screenshots produced in this report are provided using the area radar recordings. Levels indicated are flight levels. All times UTC. While analysing the area radar recordings, it was observed that there appeared to be a time discrepancy when compared with the R/T recordings. The recorded R/T transmissions appeared to lag behind the area radar recordings by approximately one minute. The reliability and quality of the R/T recorder at Kemble is a known issue which has been subject to an ATSI Safety Recommendation relating to a previous Airprox investigation. The Kemble R/T recorder has now been replaced.

Both aircraft were operating VFR in the visual right-hand circuit at Kemble in receipt of an Aerodrome Flight Information Service from Kemble Information. The C172 was squawking 7000 but the EV97 was not transponding and, therefore, could not be positively identified on radar; however, an intermittent and slow-moving primary radar contact, possibly the EV97 was observed within the Kemble ATZ at the time of the Airprox.

At 1305 (Figure 1), the C172 pilot called Kemble Information, reported inbound 2nm east abeam of Aston Down airfield (3.6nm north-west of Kemble) at 2000ft and requested airfield and joining information. The Kemble AFISO passed the runway in use, QFE and requested the C172 report overhead. The C172 pilot then enquired as to whether there was any circuit traffic. The Kemble AFISO informed the C172 pilot that there were two aircraft remaining in the RW08RH circuit and a PA28 (PA28(1)) joining the circuit via the overhead. After receiving this information the C172 pilot informed the Kemble FISO that they would position and report cross-wind for RW08.

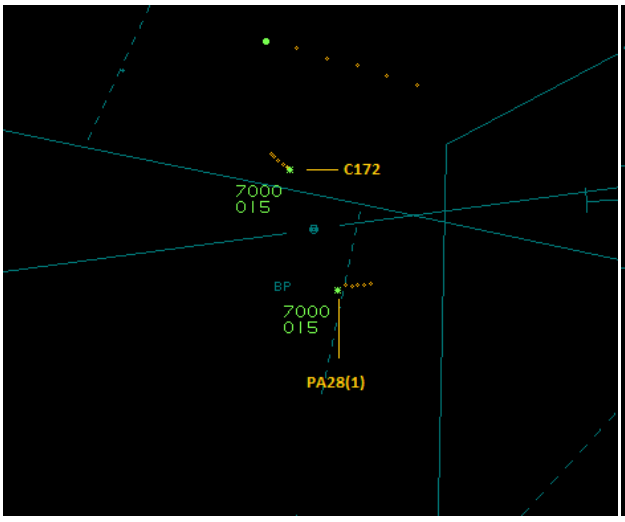

Figure 1 – Swanwick MRT at 1305:00

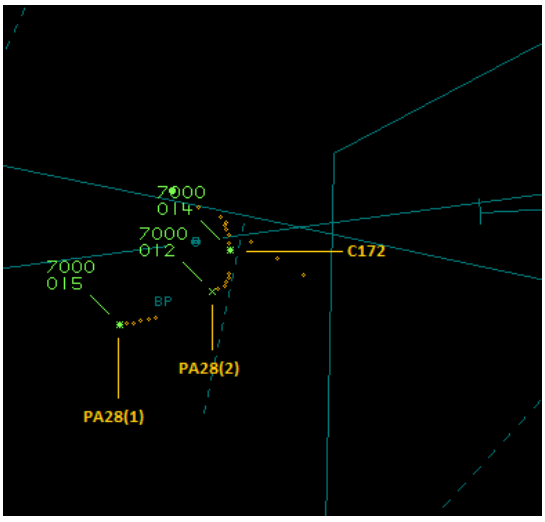

Figure 2 – Swanwick MRT at 1306:00

At 1306 (Figure 2), the PA28(1) pilot who had previously joined the Kemble circuit via the overhead reported downwind right-hand for RW08, he also reported that he was visual with microlight traffic off his starboard wing. The Kemble AFISO informed the PA28 pilot that the microlight (an Icarus C42) was also in the circuit. The C42 traffic was not visible on the area radar recording. The PA28 pilot elected to extend downwind in order to provide spacing.

At 1307 (Figure 3), the EV97 reported on final for RW08 for a touch and go. The C172 pilot then reported cross-wind. The Kemble AFISO informed the C172 pilot that there were (now) three other aircraft in the circuit. The C172 pilot reported visual with one other aircraft turning downwind in the circuit (likely to be PA28(2)), the C172 then informed the Kemble AFISO that he would position behind this traffic.

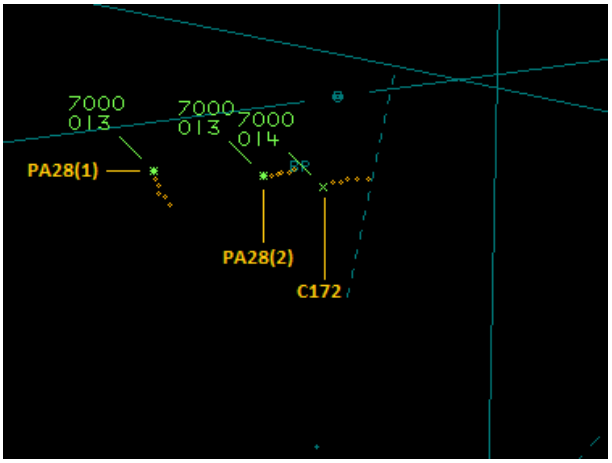

Figure 3 – Swanwick MRT at 1307:00

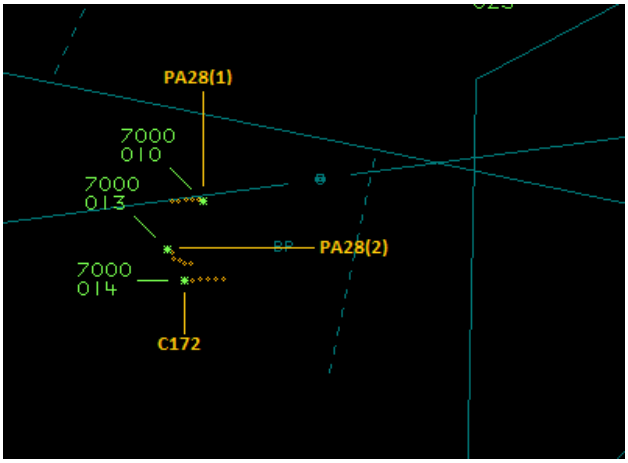

Figure 4 – Swanwick MRT at 1308:00

At 1308 (Figure 4), the C172 pilot reported downwind to land. The Kemble AFISO informed him that there were two aircraft ahead and requested that he report final. The C172 pilot replied that he was visual with one aircraft and that he was looking for the other.

At 1309 (Figure 5), the pilot of PA28(1) reported on long final having extended in the circuit. The Kemble AFISO, possibly concerned that the pilot of PA28(2) couldn't see PA28(1), called PA28(2) twice to confirm this; the pilot of PA28(2) did not acknowledge the first call, but replied to the AFISO's second call, reported the traffic in sight, and that he was turning onto base leg. After establishing that the two PA28's had each other in sight, the Kemble AFISO then asked the C172 pilot whether he had PA28(2) is sight. The pilot of the C172 reported that he was visual with both PA28s (one on base, one on final) ahead.

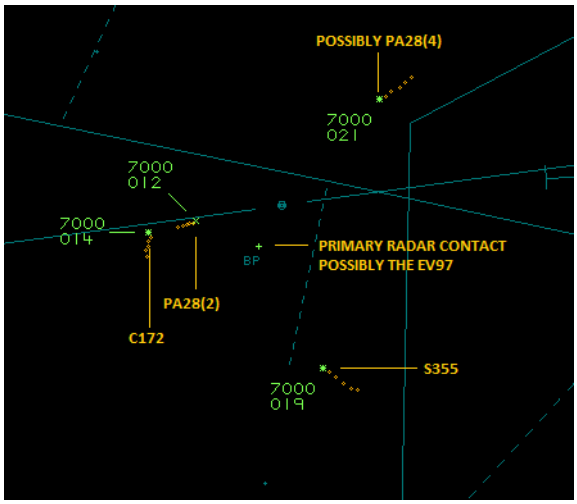

Figure 5 – Swanwick MRT at 1309:00

Figure 6 shows the traffic situation at 1309:42

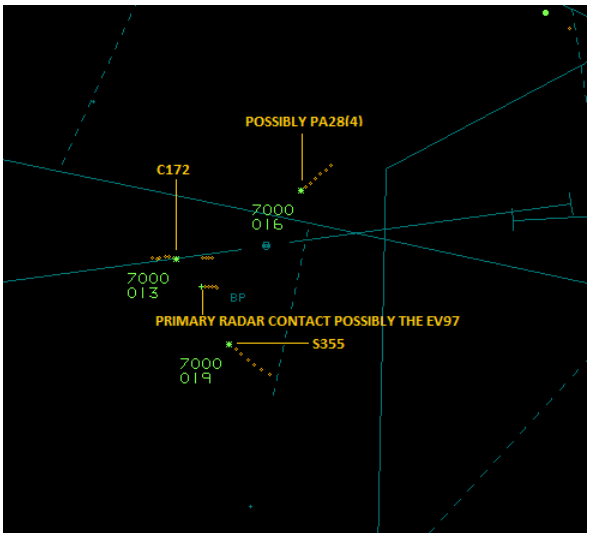

Figure 6 – Swanwick MRT at 1309:42

At 1310 (Figure 7), PA28(3) was inbound to Kemble from the north. The Kemble AFISO advised the pilot of PA28(3) that there were five aircraft ahead in the visual right-hand circuit at Kemble. Another aircraft (PA28(4)) then called Kemble and reported being thirty seconds behind PA28(3) to join the circuit but would hold off if necessary. After being informed by the Kemble AFISO that there were six aircraft ahead in the circuit, the pilot of PA28(4) informed the Kemble AFISO that he would report overhead for a cross-wind join. The EV97 then reported late downwind to land, the Kemble AFISO responded by informing him that there were two aircraft ahead and requested that he report final. The transmission that the EV97 pilot made was clipped but it appears that he did not read back two ahead, merely responding with his callsign.

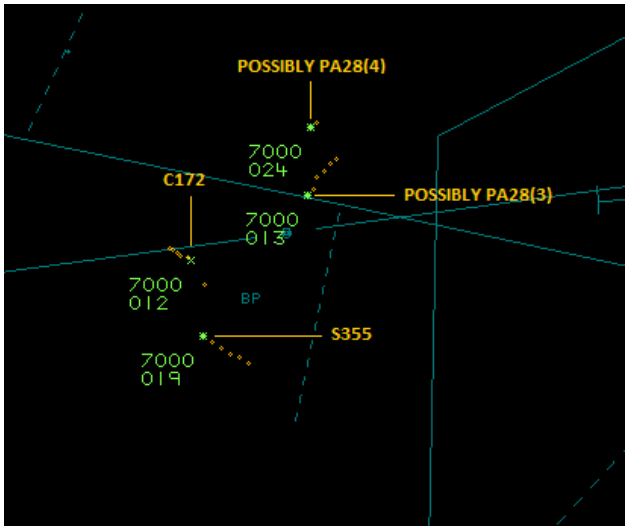

Figure 7 – Swanwick MRT at 1310:00

At 1311, a transiting AS355 called Kemble, this transmission was not acknowledged by the Kemble AFISO. Shortly after, the C172 reported the Airprox informing the Kemble AFISO that he was cut up by the EV97.

At interview, the Kemble AFISO could not, initially, recall much detail relating to the Airprox. He did, however, describe his workload, traffic loading and the R/T loading as being medium-to-high leading up to it. To aid the AFISO's recall, the R/T recording was replayed during the interview.

After listening to the recording the Kemble AFISO described his workload as high. During the minutes leading up to the Airprox, the R/T loading steadily increased, with numerous simultaneous and part simultaneous transmissions occurring. It is possible that these simultaneous transmissions could have caused some circuit position reports to be blocked leading to degraded situational awareness on the part of the pilots operating in the circuit. The call from the transiting AS55 that was unanswered by the Kemble AFISO suggests that, at this point in time, from an R/T loading perspective, the Kemble AFISO was operating near maximum capacity.

Leading up to the Airprox there were two microlights operating in the visual right-hand circuit at Kemble, a C42 Ikarus and the subject EV97. Before the Airprox occurred, the pilot of PA28(1) reported that the C42 was flying a tighter visual circuit, inside of the circuit he himself was flying. At interview, the Kemble AFISO opined that it was possible that the EV97 was also flying tighter circuits, and at a lower level than the other (non-microlight) aircraft in the circuit. This contradicts the C172 pilot's written report in which he states that the EV97 was *"…conforming to the regular circuit pattern."* It is possible, however, that the Kemble AFISO at interview confused the earlier instance of the C42 flying a non-standard circuit.

The Kemble AFISO explained at interview that there had in the past been a specific 'microlight circuit' at Kemble, inside of the standard fixed-wing circuit and flown at a lower circuit height. Use of this circuit had been curtailed however, and there is now no reference to it in the UK AIP. The Kemble AFISO went on to explain that a small minority of microlight instructors have continued, on occasion, to fly tight, low-level circuits.

Leading up to the Airprox, the Kemble AFISO had given the circuit and joining traffic specific and accurate information relating to the number of aircraft ahead in the traffic sequence. The Kemble AFISO described at interview being distracted prior to the Airprox by PA28s (3) & (4) and particularly by the pilot of PA28(3)'s intention to join from the deadside directly to crosswind, despite being informed that there were five aircraft ahead in the visual circuit. This distraction, coupled with the increase in R/T loading, may have caused him not to notice the deteriorating traffic situation in respect to the C172 and the EV97. He went on to explain that the first he knew of the C172 and the EV97 being in conflict was when the C172 pilot reported being cut up.

At interview, the subject of strategies for reducing AFISO workload when necessary were discussed. The Kemble AFISO described that the aerodrome authority's policy regarding PPR (Prior Permission Required) works very well in respect of visiting aircraft, but occasionally the policy is overlooked by based operators, particularly relating to aircraft intending to operate in the circuit.

The Kemble AFISO was providing an Aerodrome Flight Information Service within Class G (uncontrolled) airspace. AFISOs are not permitted to issue instructions to aircraft in the air[1]; pilots are therefore wholly responsible for collision avoidance in conformity with the Rules of the Air. It was not possible to calculate CPA due to the primary radar return (which was possibly the EV97) fading from coverage.

UKAB Secretariat

The C172 and EV97 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard[2]. When two or more heavier-than-air aircraft are approaching an aerodrome or an operating site for the purpose of landing, aircraft at the higher level shall give way to aircraft at the lower level, but the latter shall not take advantage of this rule to cut in front of another which is in the final stages of an approach to land, or to overtake that aircraft[3].

[1] CAP 797 Chapter 1
[2] SERA.3205 Proximity.
[3] SERA.3210 Right-of-way, (4) Landing, (i).

Summary

An Airprox was reported when a C172 and an EV97 flew into proximity at 1310 on Saturday 28th May 2016. Both pilots were operating under VFR in VMC, in the visual circuit at Kemble and receiving an Airfield Information Service from Kemble.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both aircraft, transcripts of the relevant RT frequencies, radar photographs/video recordings, and reports from the appropriate ATC and operating authorities.

The Board first looked at the actions of C172 pilot; he reported that the visitors in the circuits were flying particularly large circuits and that he had also had to extend his circuit to follow. The Board recalled another Airprox in the visual circuit at Kemble in which extended visual circuits had played a part (Airprox 2016023), although for different reasons. Members again opined that although it was recognised that a degree of flexibility in circuit ground track was required in order to integrate effectively, this second incident was another salutary reminder of the dangers of extending the circuit pattern to the extremes rather than making an early decision to go-around and maintain a predictable ground track. Conducting very long circuit tracks (in this case outside the ATZ) inevitably ended up affecting other aircraft in the circuit who either had to follow suit or, as in this case, might lose track of where aircraft were if they either missed, or did not assimilate, radio calls. On this occasion the C172 pilot was having to adopt extreme methods to considerably slow his aircraft to prevent him catching up the one ahead; a break-off to go-around or rejoin from the overhead may have been a wiser option. Finally, although recognising that he had right of way, members noted that he had seen the EV97 turn in on finals ahead of him, and wondered whether he could have defensively done more to prevent the Airprox from happening, such as calling on the RT to alert the other pilot to his presence.

The Board noted that the EV97 pilot had reported that he did not hear the C172 call final, yet the R/T recording clearly indicated that the AFISO had told him that there were 2 aircraft ahead when he called downwind. Acknowledging that the frequency was busy, the fact that the EV97 pilot only responded to this call with a clipped callsign transmission, and without reading back the fact that there were two ahead, led members to wonder whether he had assimilated the information that he was number 3; possibly as a result of being task-focused in instructing his student in circuit flying in a busy circuit in hazy conditions. If he had assimilated the information, then members wondered why he therefore didn't ask for the position of the ones ahead if he couldn't see them. Whatever the circumstances, members agreed that it was for the EV97 pilot to integrate with the traffic ahead, and to clear his path before turning final.

The Board then looked at the actions of the AFISO. In the past, the Board had been critical of busy airfields who use AFISOs in place of controllers, and have also commented that some pilots appear not to realise the differences between the two. However, on this occasion the Board did not think that it being only an AFISO had had a material effect on the Airprox. That being said, unlike a controller, the AFISO could not instruct aircraft to leave the circuit, and noting that a PPR system was in place for visitors, the Board wondered whether Kemble should place restrictions on the number of aircraft that could be in the circuit, including home-based aircraft. Members acknowledged that the circuit was extremely busy and commended the AFISO for his Traffic Information to the circuit traffic nonetheless. Notwithstanding, the fact that the EV97 pilot did not acknowledge the number of aircraft ahead led some members to wonder whether the AFISO should have gone back to him to confirm that he had received the information; whilst the EV97 pilot was not required to readback Traffic Information, he was required to acknowledge it. In mitigation, the circuit was extremely busy, the AFISO was working hard, and controller members opined that he may not have realised it was not acknowledged; the fact that the frequency was so busy, and with simultaneous transmissions and part-transmissions, made it difficult for all parties to keep track of the circuit situation.

All of the above led the Board to discuss general airmanship, noting that with so much happening at the same time, any one of the 6 pilots in the circuit, not just the ones involved in this incident, could

have elected to leave the circuit or to hold off until other aircraft had landed. In pressing on, with each seemingly determined to achieve their own aims regardless of other circuit users, pilot members opined that they had all contributed to generally deteriorating situation when, instead, they could easily have reduced the risk if any one (or more) of them had simply departed the circuit for a few minutes to allow the congestion to ease.

Turning to the cause of the Airprox, the Board quickly agreed that the EV97 pilot had not integrated effectively with the C172, but that there were contributory factors that the visual circuit had been busy and that the EV97 pilot had not assimilated that he was number three in the pattern. In assessing the risk, although they noted that both pilots had taken avoiding action, the Board thought that in both cases this had been completed in a timely and effective manner such that there was no risk of collision; therefore, they assessed the risk as Category C.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The EV97 pilot did not integrate effectively with the C172.

Contributory Factors: 1. A busy visual circuit resulting in congested R/T.

2. The EV97 pilot did not assimilate that he was number three in the pattern.

Degree of Risk: C.