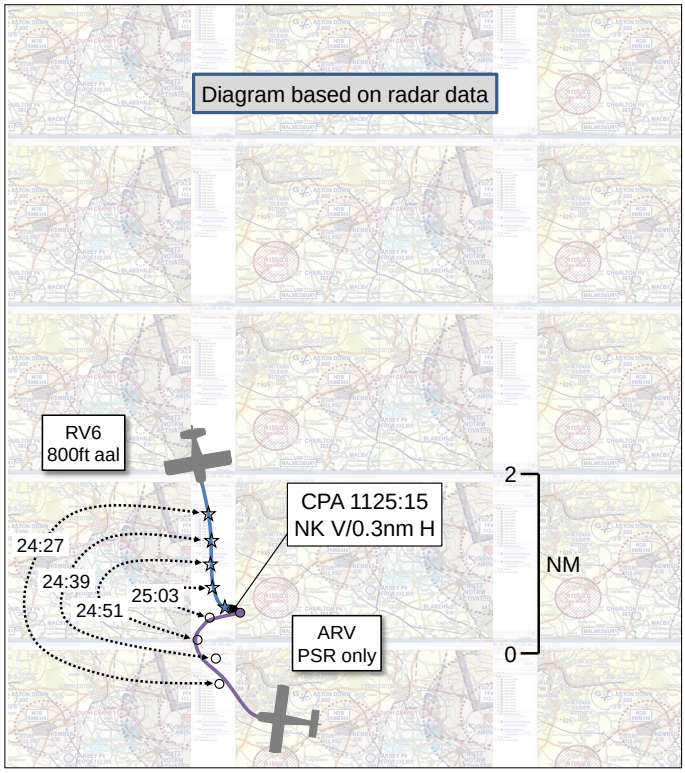
AIRPROX REPORT No 2013165

Date/Time: 23 Nov 2013 1125Z (Saturday)

Position: 5139N 00203W (Kemble - elevation 436ft)

Airspace: Kemble ATZ (*Class*: G)

	Aircraft 1	*Aircraft 2*
Type:	RV6	ARV
Operator:	Civ Pte	Civ Pte
Alt/FL:	1000ft QFE (1010hPa)	1000ft QFE (NK hPa)
Conditions:	VMC	VMC
Visibility:	>8km	5nm
Reported Separation:	50ft V/400ft H	Not Seen
Recorded Separation:	NK V/0.3nm H	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE VANS RV6A (RV6) PILOT reports in the left-hand circuit for RW26 at Kemble. The white, blue and red aircraft had landing and strobe lights selected on, as was the SSR transponder with Modes A, C and S. The aircraft was not fitted with a TAS or ACAS. The pilot was operating under VFR, in VMC below cloud, and was in communication with Kemble Information. Having completed an overhead join, he was warned on crosswind (at height 1000ft) of another aircraft downwind, of which he reported visual [UKAB Note: this was another aircraft, not the ARV]. He turned downwind, heading 080° at 90kt, reported his position and was informed that he was 'number 2'. The aircraft ahead was seen to turn final shortly afterwards. As he performed the downwind checks, his passenger brought his attention to another aircraft immediately to his right, slightly above and descending, heading approximately 040°. The other aircraft appeared to be slightly faster so the RV6 pilot took avoiding action by slowing down to 70kt and lowering full flap. The pilot of the other aircraft was then heard to report 'late downwind for 26'. After landing he discussed the incident with the pilot of the other aircraft who informed him that 'he had been taught to join the circuit this way'.

He assessed the risk of collision as 'Medium'.

THE ARV AVIATION ARV1 SUPER 2 (ARV) PILOT reports intending to land at Kemble. The yellow aircraft's lighting, SSR transponder, TAS and ACAS states were not reported. The pilot was operating under VFR, in VMC below cloud, in communication with Kemble Information. He approached Kemble from the south, made contact with the tower, and was passed the airfield QFE and runway in use. Neither he, nor his passenger, could see or hear any conflicting aircraft so he joined the circuit at the beginning of the downwind leg, heading 080° at 80kt. Soon afterwards he heard an aircraft transmit that he had 'cut him up'. He transmitted his position and continued in the circuit, maintaining higher airspeed than normal to keep plenty of separation from the aircraft behind. The ARV pilot stated that he had studied a proprietary flight guide for Kemble before departure and was very aware of its noise abatement areas and that straight-in approaches were not encouraged. He also stated that most of his training was carried out at a small grass airfield where downwind joins were very common and that, with hindsight, he should have requested a downwind join at Kemble.

He did not see the other aircraft and did not make an assessment of the risk of collision.

Factual Background

The weather at Gloster and Bristol was recorded as follows:

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METAR EGBJ 231120Z 35002KT 5000 HZ SCT008 03/02 Q1027=
METAR EGGD 231120Z 01007KT 9000 FEW024 04/02 Q1026=
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Analysis and Investigation

CAA ATSI

CAA ATSI had access to the Kemble RTF and area radar recording, together with written reports from the RV6 and ARV pilots. The FISO's workload was assessed as moderate. The area radar recording suffered from some track jitter due to quality of the low level coverage. The reported Airprox occurred at 1125:16, within the Class G airspace of the Kemble ATZ, between a Vans RV-6A (RV6) and an ARV Aviation ARV1 Super 2 (ARV). The Kemble ATZ consists of a circle, radius 2nm, centred on RW08/26 and extending to 2000ft above the aerodrome elevation of 436ft. The RV6 pilot was operating on a VFR flight inbound to Kemble and was in receipt of an Aerodrome Flight Information Service from Kemble Information, as was the ARV pilot. Both pilots were operating in the left-hand circuit for RW26.

At 1117:02, the RV6 pilot called Kemble for joining instructions and the following RTF exchange occurred:

FISO	*"*[RV6 C/S] *Kemble information er good morning have your details runway two six lefthand circuit QFE one zero one zero".*
RV6	*"Two six lefthand circuits one zero one zero we'll do a standard overhead join* [RV6 C/S]"
FISO	*"*[RV6 C/S] *roger one er other joining in to the overhead from the north and there's a Eurostar joining directly into the downwind from the west.*
RV6	*"Roger that* [RV6 C/S]*".*

At 1119:30, the ARV pilot contacted Kemble:

ARV	*"Kemble* [ARV C/S]*"*
FISO	*"*[ARV C/S] *Kemble Information good morning have your details it's runway two six lefthand circuit QFE one zero one zero"*
ARV	*"One zero one zero two six left* [ARV C/S]*"*
FISO	"*and* [ARV C/S] *if you report overhead"*
FISO	*"*[ARV C/S] *Kemble report overhead*

At this point [1121:31] the FISO responded to a number of other RTF calls. The RV6 pilot reported crossing the ATZ boundary for the standard overhead join and reported visual with the aircraft which was crosswind [a Eurostar]. The FISO acknowledged the call and advised the RV6 pilot to report crosswind.

At 1124:15, the Eurostar pilot reported downwind and was advised to report on final. At 1124:30, the RV6 pilot reported crosswind and the FISO responded, *"*[RV6 C/S] *roger traffic is a Eurostar just reported downwind".* The RV6 pilot replied, *"Roger looking* [RV6 C/S]".

At 1124:42, the RV6 pilot reported, *"and we're visual with the one downwind* [RV6 C/S]*"*. The FISO advised *"Final one ahead"* which the RV6 pilot acknowledged, *"Wilco* [RV6 C/S]*".* Radar recording showed the RV6 was crosswind with the Eurostar downwind. The ARV is shown crossing the southern boundary of the ATZ, see Figure 1 below.

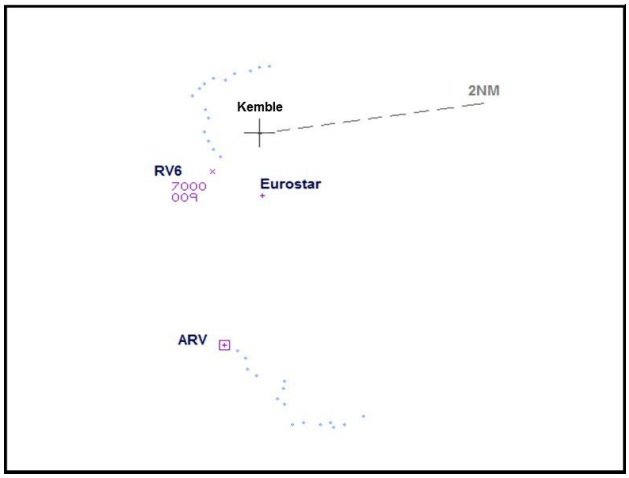

Figure 1: Swanwick MRT at 1124:42

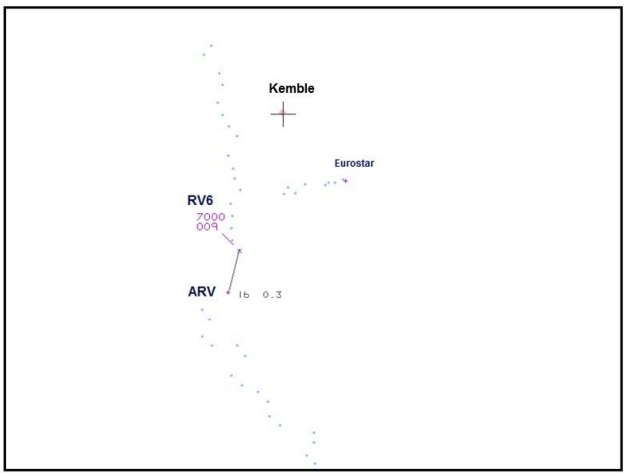

Figure 2: Swanwick MRT at 1125:12

At 1125:12, the distance between the RV6 and ARV had reduced to 0.3nm as both aircraft commenced their respective turns onto the downwind leg, see Figure 2. The ARV is not shown on the next radar sweep [1125:16] at the estimated CPA. At 1125:20, the ARV is 0.3nm ahead of the RV6 as both aircraft position downwind. The RV6 was indicating FL009 which converts to 821ft[1] (based on QFE 1010 with 1hPa equal to 27ft), see Figure 3.

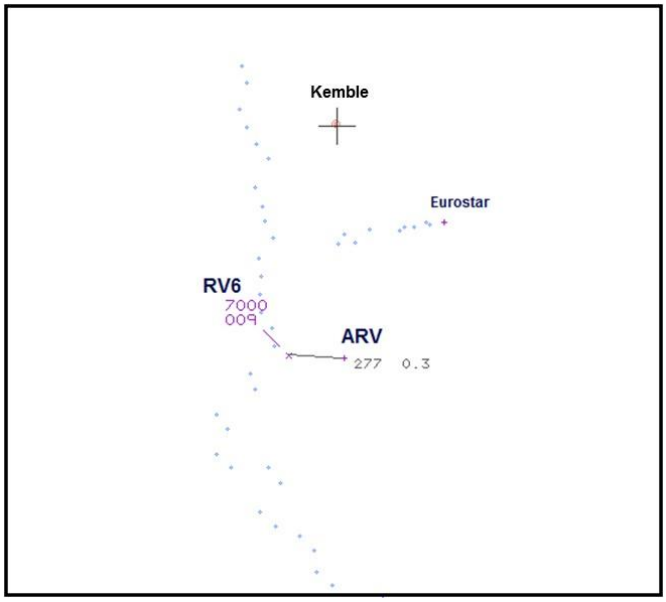

Figure 3: Swanwick MRT at 1125:20

At 1125:30, the ARV pilot reported, *"*[ARV C/S] *late downwind for two six"* and the RV6 pilot reported*, "and* [RV6 C/S] *is er downwind for two six just chopped up by the er yellow er highwing aircraft".* The FISO advised the RV6 pilot to report on final. The two aircraft continued to land without further incident.

The ATSU reported that the FISO was not aware that an Airprox had been reported, that the incident had not been observed by the FISO, and that there was nothing significant on the RTF. There was therefore no log entry or written report from the FISO. The RV6 pilot mentioned the incident after landing.

The AIP entry for Kemble does not promulgate a requirement for aircraft to join overhead the airfield. The RV6 pilot was passed the runway in use, and indicated an intention to join overhead.

[1] Note that the Mode C derived altitude may have an allowable error of up to ±200ft.

The RV6 pilot was then passed traffic information regarding another aircraft joining overhead and one joining directly downwind.

On initial contact the ARV pilot was passed the runway in use and the normal sequence was broken when the ARV pilot did not respond when the FISO twice asked him to report overhead. It is likely that the FISO would have passed traffic information after the pilot had clarified his intention to join overhead. However, the FISO then became fully occupied attending to other aircraft transmissions. The FISO likely assumed that the ARV pilot would join overhead and did not subsequently take the opportunity to challenge the ARV pilot regarding his non-response or to provide generic information on circuit activity. There is a requirement under the Rules of the Air (RoA) for the pilot to obtain information from the FISO prior to flying within the ATZ and for the FISO to pass timely traffic information necessary in the interest of safety. The RoA, Rule 45(4) states:

> 'If the aerodrome has a flight information service unit the commander shall obtain information from the flight information service unit to enable the flight to be conducted safely within the zone.'

The RoA, Rule 45(6) states:

> '(6) The commander of an aircraft flying within the aerodrome traffic zone of an aerodrome shall—
>
> …
> (c) if the aircraft is fitted with means of communication by radio with the ground, communicate his position and height to …, the flight information service unit … at the aerodrome … on entering the zone and immediately prior to leaving it.'

CAP797 (FISO Manual), Section 2, Chapter 1, paragraph 1.3, states:

> 'Traffic information on traffic operating in the vicinity of an aerodrome shall be issued in a timely manner when, in the judgement of the AFISO, such information is necessary in the interests of safety, or when requested by aircraft. When a pilot report indicates, or an AFISO considers, that there may be a collision risk, specific traffic information shall be passed to each pilot concerned.'

It was not clear why the ARV pilot did not respond to the two requests to report overhead or why he could not see or hear other conflicting aircraft established in the circuit on what was a fairly busy frequency. It is likely that the ARV pilot's lack of response prior to the FISO then answering calls from other aircraft contributed to a misunderstanding of what the FISO expected and what the ARV pilot intended.

UKAB Secretariat

Traffic joining the visual circuit is required to conform to the pattern of traffic formed by other aircraft intending to land at that aerodrome[2]. Both pilots shared an equal responsibility for collision avoidance[3].

Summary

An Airprox was reported when an RV6 and ARV flew into proximity in the Kemble visual circuit at 1125 on 23rd November 2013. Both pilots were operating under VFR in VMC in Class G airspace within the Kemble ATZ, in receipt of an AFIS from Kemble Information.

[2] Rules of the Air 2007 (as amended), Rule 12 (Flight in the vicinity of an aerodrome)
[3] ibid., Rule 8 (Avoiding aerial collisions)

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, radar video recordings and a report from the appropriate ATC authority.

Board members first considered the actions of the ARV pilot. He had been asked to 'report overhead' by the Kemble FISO but the Board were unable to conclude whether he had heard the FISO's repeated transmission. The Board agreed that, had he done so and reported overhead, the FISO would have passed Traffic Information to enable the ARV pilot to conduct his flight safely in the ATZ. In the event, the ARV pilot chose to join downwind but did not inform anyone of his intentions, thereby denying other airfield users valuable situational awareness. The Board acknowledged that an overhead join was not required at Kemble, but also noted that, notwithstanding local restrictions, it remained the safest way to integrate into the pattern of traffic intending to land at an aerodrome.

In considering the cause and risk, the Board agreed that the ARV pilot's decision to join downwind without either passing his intentions or advising the FISO that he was entering the ATZ meant that he did not integrate appropriately into the Kemble visual circuit, borne out by the fact that he flew into conflict with the RV6. The Board considered that neither pilot saw the other before CPA, and that the aircraft had been in close proximity; safety margins had been much reduced below the normal.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The ARV pilot did not integrate appropriately into the Kemble visual circuit and flew into conflict with the RV6.

Contributory Factor: The ARV pilot did not report overhead as requested by the FISO and did not pass his intention to join downwind.

Degree of Risk: B.

ERC Score[4]: 20

[4] Although the Event Risk Classification (ERC) trial had been formally terminated for future development at the time of the Board, for data continuity and consistency purposes, Director UKAB and the UKAB Secretariat provided a shadow assessment of ERC.