

## AIRPROX REPORT No 2012044

Date/Time: 23 Mar 2012 1745Z

Position: 5051N 00219W (Vicinity of Bulbarrow Hill Masts – 16nm SE of Yeovilton)

Airspace: London FIR (Class: G)

Reporting Ac Reported Ac

Type: PA28-151 VANS RV-7

Operator: Civ Club Civ Pte

Alt/FL: 2000ft 2200ft  
RPS (1026hPa) QFE

Weather: VMC CLBC VMC CAVOK

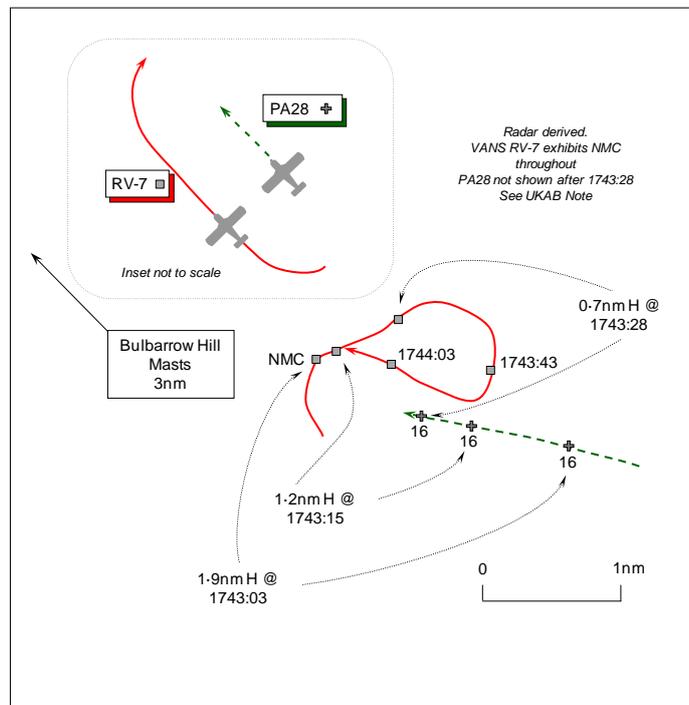
Visibility: 15km 35km

Reported Separation:

Nil V/40m H Nil V/150m H

Recorded Separation:

Not recorded



## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

**THE PIPER PA28-151 PILOT** reports he was the co-pilot and PNF during a dual local flight originating from Yeovilton. The PF was navigating, whilst he as the PNF was operating the RT and acting as safety pilot. Bournemouth RADAR was providing a BS on 119.475MHz, that had been downgraded by ATC from a TS prior to the Airprox because of radar coverage. A squawk of A7000 was selected with Mode C initially and then the code changed to A7365 at the request of Bournemouth ATC; neither TCAS nor Mode S is fitted.

Returning to Yeovilton at 97kt, aiming to pass to the W of Bulbarrow Hill Masts (1129ft amsl) in a level cruise at 2000ft Portland RPS, the PF called visual with an ac crossing from L – R 500m ahead of their intended flight path at a higher altitude – some 500ft above. Both he and the PF observed the ac – a white VANS - as it descended rapidly and turned S before passing down their starboard side at a safe distance. Shortly afterwards he as the PNF called that he had lost sight of the VANS [an RV-7] and the PF drew his attention back to the ac that had now rapidly formatted off their port wing. The RV-7 pilot flew at the same altitude on a parallel course no more than four wingspans - about 40m away - for about 10secs. There was no communication visually or by radio and the occupants of the RV-7 were not looking in their direction, but whilst the RV-7 was alongside he noted the ac's registration. As the PNF he recommended they maintain their altitude and heading of 316° as the RV-7 accelerated rapidly away and made a climbing turn to the R across their flight path before rolling onto a S'ly heading and passing astern. He assessed the Risk as 'medium'.

At this point he informed Bournemouth RADAR of the RV-7 and stated his concerns regarding the behaviour of the ac's pilot. The controller informed him that he had radar contact on the RV-7, but he was not in RT contact; both ac were in the 'Open' FIR and therefore able to fly unrestricted. Maintaining a good lookout, they continued on to their next waypoint on the same heading.

Both he and his colleague were a little shaken by the suddenness of the incident and were concerned that although the RV-7 was flying parallel to their course it appeared the other pilot was not aware of their PA28 nor looking out. In the PNF's opinion, the pilot of the RV-7 flew in a manner that made him doubt the RV-7 pilot's intentions; if he was aware of their ac he positioned himself too close without any form of consent or communication and manoeuvred in a way that compromised the safety of their flight.

The remainder of their flight back to Yeovilton was uneventful; the Airprox was reported to the club's CFI later that evening.

The ac has a blue and grey colour scheme and the fin mounted strobe was on.

**THE VANS RV-7 PILOT** reports that he was operating VFR just to the NE of Bagber; the ac is based at a private farm strip in the vicinity. He was not in receipt of an ATS but listening out on 118.00MHz. [No Squawk was specified but the radar recording shows the ac squawking A7000 without Mode C and Mode S fitted.]

Whilst conducting basic aerobatics the ac's TCAS displayed an ac contact 3nm away which was seen visually at a range of 1nm. Whilst looping he noticed the PA28 about 1000ft below his aeroplane flying in the opposite direction. About 3nm SE of Bulbarrow Hill Masts he continued the manoeuvre to arrive about 150m off the PA28's port side flying in the same direction at a height of 2200ft. He thought the PA28 pilot was not visual with his aeroplane. Continuing past the PA28 at 155kt, when well clear he commenced a climbing turn to the R. He assessed the Risk as 'none'.

UKAB Note: This Airprox is not captured on LAC radar recordings – see the ATSI report for local Bournemouth recorded radar data. The PA28, identified from its assigned squawk of A7365, is shown on the Jersey SSR at 1743:03, maintaining a steady track of about 285°(M) level at 1600ft verified Mode C (1013hPa). The contact perceived to be the RV-7 is shown squawking A7000 but no Mode C is indicated at all throughout. The RV-7 executes a manoeuvre back and forth 1.9nm – 1.2nm ahead of the PA28 until 1743:15, then flying NE'ly before turning SE'ly to pass 0.7nm to starboard of the PA28 at 1743:28. Thereafter the PA28 contact fades at a position 3nm SE of Bulbarrow Hill Masts - the position of the AP as reported by the RV-7 pilot - and is not shown again. The RV-7 turns about onto a course of about 290°(M) and follows the last known track of the PA28 in the direction of Bulbarrow Hill Masts.

The PA28 pilot reports that he was heading 316°(M) when the RV-7 passed abeam to port of his aeroplane at a position 2nm NW of Bulbarrow Hill Masts, however, the local Bournemouth recorded radar data shown within the ATSI report illustrates the Airprox occurred SE of Bulbarrow Hill Masts in the location reported by the RV-7 pilot.

Both pilots' accounts agree that the RV-7 passed to port followed by a climbing turn to the R across the PA28's flight path. Although not captured on the radar recording it seems from the Bournemouth recorded radar data that the contacts merged in azimuth.

**ATSI** reports that an Airprox was reported 2nm W of Bulbarrow Hill Masts, Dorset, in Class G airspace. The PA28 crew was operating VFR at 2000ft on a local flight from Yeovilton and was in receipt of a BS from Bournemouth RADAR on 119.475MHz.

The VANS RV-7 was operating VFR conducting aerobatics on a local flight from a private strip and was not in communication with an ATS unit. CAA ATSI had access to RT and radar recordings from Bournemouth RADAR, area radar recordings together with written reports from both pilots.

The Bournemouth METARs:

231720Z 15005KT CAVOK 15/08 Q1026=  
231750Z 16004KT CAVOK 15/08 Q1026=.

At 1718:40 UTC the PA28 crew contacted Bournemouth RADAR and reported O/H Dorchester at 2000ft, requesting a TS. The PA28 was given a squawk of A7365, identified and a TS agreed. The PA28 crew was intending to route to Swanage and then back to Yeovilton.

At 1727:50, when the PA28 was 18.7nm WSW of Bournemouth Airport, the controller downgraded the service to a BS due to the radar contact from the PA28 becoming intermittent. At 1742:57, when the PA28 was 14.2nm WNW of Bournemouth, a radar contact squawking A7000 with no Mode C, was shown 2nm WNW of the PA28. The A7000 squawk was identified as the RV-7 using the Bournemouth Radar Mode S function during the replay. Photographs of the Bournemouth Radar data (reproduced below) show the RV-7 turned to the R and orbited about the PA28.



The written report from the pilot of the RV-7 stated that he manoeuvred his ac to arrive 150m on the PA28's port side. The pilot of the RV-7 did not believe that the PA28 crew was visual with his RV-7; he continued past the PA28 and 'when well clear commenced a climbing turn to the R'.

The written report from the pilot of the PA28 stated that they saw the RV-7 formate on the PA28's port wing. The RV-7 paralleled their course for a short time before it was observed to accelerate rapidly and make a climbing turn to the R. The pilot of the PA28 was concerned about the behaviour of the RV-7 and informed Bournemouth RADAR about the traffic, but did not report an Airprox on the frequency.

The UK AIP at ENR 1.6.2, paragraph 2.2.2 describes the use of squawk A7004 which may be selected at a pilot's discretion:

\*7004 Aerobatics and Display. For use by civil or military aircraft conducting solo or formation aerobatic manoeuvres, whilst displaying, practising or training for a display or for aerobatics training or general aerobatic practice. Unless a discrete Mode A code has already been assigned, pilots of transponder equipped aircraft should select \*7004, together with Mode C pressure-altitude reporting mode of the transponder, five minutes before commencement of their aerobatic manoeuvres until they cease and resume normal operations. Pilots are encouraged to contact ATS Units and advise them of the lateral, vertical and temporal limits within which they will be operating and using \*7004. Controllers are reminded that \*7004 must be considered as unvalidated and the associated Mode C pressure-altitude reporting data unverified. Traffic information will be passed to aircraft receiving a service as follows:

'Unknown aerobatic traffic, (number) o'clock (distance) miles opposite direction/crossing left/right indicating (altitude) unverified (if Mode C pressure altitude reporting data is displayed).'

The RV-7 was squawking 7000 with no Mode C information and was not in contact with Bournemouth RADAR. As both flights were operating in Class G airspace, VFR, the pilots of both ac were ultimately responsible for collision avoidance.

The PA28 was in receipt of a BS. Under a BS there is no requirement to monitor the flight and TI is not routinely passed. As the RV-7 was squawking A7000 without Mode C the radar controller had no indication that any unusual activity was taking place.

The pilot of the RV-7 believed that he manoeuvred well clear of the PA28. The pilot of the PA28 was concerned by the behaviour of the RV-7. The pilot of each ac was visual with the other ac although both reported that they believed that the other did not have them in sight.

## **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 video recordings and reports from the appropriate ATC authority.

The Board noted that it was unfortunate that the RV-7 pilot had not selected the A7004 Aerobatics and Display conspicuity squawk, for use by pilots conducting solo or formation aerobatic manoeuvres. Had he done so, this might have alerted the Bournemouth RADAR controller to the presence of an ac conducting high-energy aerobatic manoeuvres along the PA28's route. The Board recognised that under the BS there is no requirement for the controller to monitor the flight and TI is not routinely passed because the controller might be dealing with other higher priority traffic. However, it could potentially have resulted in an earlier 'warning' to the PA28 pilots if RADAR had been able to appreciate what was happening. In this respect Members urged pilots to select the aerobatics conspicuity squawk, when appropriate, as it is a valuable warning to radar controllers that an ac is about to commence, or is engaged in, unpredictable high-energy manoeuvres.

Nevertheless, it was evident that in the see and avoid environment of Class G airspace the PA28 pilots had spotted the RV-7 at a range of 500m crossing ahead of their intended flight path about 500ft above them and were content with the separation as the RV-7 pilot descended and turned to pass down their starboard side on a reciprocal course. Both the PA28 crew and the RV-7 pilot were incorrect in surmising that the other pilot had not seen their ac and it was apparent from the RV-7 pilot's account that he had seen the PA28 whilst looping and had having passed it elected to close on it from astern. Pilot members considered that a 'wing-waggle' by either would have reassured the other pilot that his ac had been spotted. Nevertheless, the Board agreed it would have been difficult for the PA28 pilots to judge what the RV-7 pilot was doing once his ac had passed behind the PA28's wing and was turning astern; once the geometry changed it became an overtaking situation and thus the PA28 had right of way at that point. The RV-7 pilot reports he arrived off the PA28's port side 150m away, before accelerating away in his higher performance aeroplane and executing a climbing turn to the R ahead of the PA28. The GA pilot Member considered this manoeuvre unwise; the RV-7 pilot could have exhibited better airmanship by giving the PA28 a wider berth and certainly not overtaking to port nor crossing ahead. The Board recognised that it was the RV-7 pilot that had engineered the eventual separation here and the Members agreed unanimously that this Airprox had resulted because the RV-7 pilot flew close enough to cause the PA28 pilot concern.

The RV-7 pilot was entirely cognisant of the PA28 before he had flown at the same altitude on a parallel course off the PA28's port wing; this was about 40m away the reporting pilot had estimated. The Bournemouth radar photographs provided by ATSI reflect the RV-7 pilots overall manoeuvre; given the scale of the pictures however, it was not feasible to judge the minimum separation at close quarters with any certainty and the Board was unable to resolve the differing estimates reported by both pilots of the minimum horizontal separation at this point in the incident. However, with the PA28 pilot having re-established visual contact and the RV-7 pilot watching the PA28 closely throughout, coupled with the RV-7 pilot's ability to haul-off rapidly in his nimble aeroplane, the Board concluded unanimously that, in these circumstances, no Risk of a collision had existed.

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

Cause: The RV-7 pilot flew close enough to cause the PA28 pilot concern.

Degree of Risk: C.