AIRPROX REPORT No 2010135

Date/Time: 16 Sep 2010 1013Z

Position: 5221N 00124W (2·75nm E of Coventry - elev 267ft)

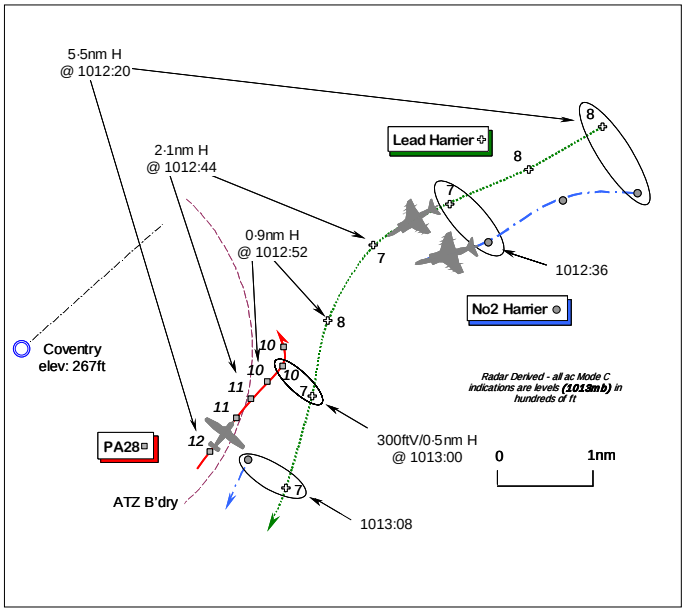
Airspace: UKDLFS/FIR (*Class:* G)

	Reporting Ac	*Reported Ac*
Type:	Harrier x2	PA28-161
Operator:	HQ Air (Ops)	Civ Trg
Alt/FL:	700ft RPS	NR
Weather:	VMC NR	NR
Visibility:	10km	NR
Reported Separation:	100ft V	NR

Recorded Separation:

PA28 v Lead Harrier 300ft V/0·5nm H

PA28 v No2 Harrier not recorded



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE HARRIER PILOT reports that he was leading a VFR low-level pairs sortie from Wittering, but because of two Royal Flights passing close to Wittering a different route to the normal VFR low-level routeing was planned. This route passed 3nm from Coventry Airport and remained outside their ATZ.

At 1013:00Z, the westerly ac of the pair – the No2 - had an Airprox with a light civilian ac, with blue undersurfaces and white upperworks, operating from Coventry Airport [the PA28]. The light civilian ac was seen 0·2nm away at a very late stage whilst heading 240° at 420kt, no time was available for avoiding action to be taken. The PA28 passed just above the No2 Harrier on a reciprocal track with vertical separation of about 100ft.

During the RAIDS debrief the Harrier is shown passing outside the ATZ by 0·5nm. The HUD video shows that the Risk of collision was 'high' and that the reported separation is approximately correct.

The lesson from this Airprox is that although the Harrier's navigational equipment is now so accurate as to allow LFS avoidance areas to be 'just' missed, this level of navigational accuracy is not necessarily the same with other airspace users.

The Harriers have a grey colour-scheme and the HISLs were on. The lead ac was squawking A7001 with Mode C; the No2 was not squawking.

UKAB Note (1): The UK LFH at Part 1-2-4-3 highlights that the Coventry ATZ is in close proximity to the Birmingham Avoidance Area (AA). The UK LFC illustrates the Coventry ATZ boundary as lying at the extreme SE corner of the AA.

THE PIPER PA28-161 PILOT declined to provide an Airprox report.

ATSI reports that this Airprox occurred at 1013:00, in Class G airspace 2·9nm to the E of Coventry Airport just outside the ATZ. The 2·5nm radius Coventry ATZ is centred on the mid-point of RW05/23 and extends to 2000ft above the aerodrome elevation of 267ft.

The 0950UTC Coventry Weather was: sfc wind: 280/10kt, variable 260°-320°; visibility: >10km with showers in the vicinity; Cloud: FEW at 1000ft, BKN at 1800ft; QNH 1011mb.

The PA28 pilot had rejoined the left hand visual cct for RW23 after returning from a local detail and was in receipt of an Aerodrome Control Service from Coventry TOWER, squawking A0260 with Mode C. The Coventry TOWER controller observed a contact on the Aerodrome Traffic Monitor (ATM), E of the Airport, squawking A7001 without Mode C. At 1012, although the Tower controller had not acquired visual contact with the unknown ac, a warning was passed to the PA28 pilot as the ac approached the midpoint of the downwind leg. Shortly afterwards TOWER advised the PA28 pilot that that there might be two contacts in the PA28's 1 o'clock position. The PA28 pilot reported sighting the ac below and then, shortly afterwards, reported sighting both ac. At the same time the Tower controller acquired one of the Harriers visually as it turned onto a southerly heading.

At 1016, TOWER advised the PA28 crew that the pilot of the Harrier had called on the RT to apologise. Coventry ATC was not immediately aware that an Airprox would be filed and no written report was provided by either the Tower controller or the pilot of the PA28. The ATSU subsequently provided a summary of the controller's recollection of events.

The Manual of Air Traffic Services (MATS) Part 1, Section 2, Chapter 1, Page 1, 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;
> b) aircraft taking-off and landing.'

TOWER passed an appropriate warning to the PA28 pilot regarding the close proximity of the unknown traffic. The Harrier pilot's written report indicates an intention to route close to the Coventry ATZ boundary, but no RT call was made to Coventry ATC until after the event.

[UKAB Note (2): The Clee Hill Radar recording shows the Harrier pair at 1012:20, approaching the Airprox location from the NE, heading SW, with the lead ac squawking A7001 and indicating 800ft unverified Mode C – about 740ft Coventry QNH (1011mb). The No2 Harrier is shown as a primary contact only in battle formation on the leader's port wing at a range of about 0·5nm. The PA28, which is 5·5nm away at this point is shown downwind for RW23 just inside the ATZ indicating 1200ft unverified Mode C. The lead Harrier and the PA28 both descend slightly by 100ft maintaining a steady course, to 700ft and 1100ft respectively. After 1012:36, primary contact on the No2 wingman fades. On the next sweep at 1012:44, the PA28 crossed the ATZ boundary downwind, indicating 1100ft Mode C (1013mb) – about 1040ft QNH - with the lead Harrier 2·1nm directly ahead commencing a L turn SSW'ly, vertical separation remaining constant at 400ft Mode C. Some 8sec later the lead Harrier has started to draw to starboard of the PA28's nose 0·9nm away, at the midpoint of the jet's turn, when vertical separation reduced to 200ft, the Lead Harrier climbing 100ft and the PA28 descending the same amount to an indicated 1000ft Mode C. The CPA between the PA28 and the lead Harrier occurs in between sweeps. The minimum recorded separation occurs at 1013:00, the lead Harrier now 3·12nm from the Airport - 0·62nm outside the ATZ - drawing R into the PA28's 3 o'clock, passing 0·5nm SE and 300ft below the latter, which itself is shown at a range of 2·75nm from the Airport and thus 0·25nm outside the ATZ. The No2 Harrier is still not evident. However, on the subsequent sweep at 1013:08, with the lead Harrier 1·5nm due S of the PA28, which itself is now turning L, the No2 is revealed 0·5nm off the leader's starboard wing thereby showing that the pair had conducted a cross-over turn on to SW. Interpolation of the No2's track history supports the lead pilot's report that the westerly ac of the pair - the wingman - passed directly beneath the PA28 at 1013:00, during or shortly after the No2's turn.]

HQ AIR (OPS) comments that whilst technically acceptable to fly this close to an ATZ without first contacting the controlling agency, it is not good airmanship. An early call to the airfield controller

may well have improved the situational awareness of the Harrier flight and facilitated greater separation. It is disappointing that the PA28 pilot elected not to cooperate with the investigation.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included a report solely from the lead Harrier pilot, radar video recordings, and reports from the appropriate ATC and operating authorities.

The Board agreed that it was most unfortunate that the PA28 pilot had elected not to contribute toward the investigation of this Airprox and pilot Members considered this to be a most unprofessional attitude from the PIC. The Board was denied his perspective on the encounter and the assessment of this Airprox was thus somewhat unbalanced. However, additional information was available from the ATSI report and radar recordings, which enabled the Board to complete its assessment. It was apparent that the Coventry TOWER controller had spotted one of the approaching Harrier's on the ATM and then astutely detected the other. The Board commended the controller for his alertness, swift appreciation of the situation and the prompt warnings passed to the PA28 pilot downwind for RW23. Why the PA28 pilot was flying such a wide cct downwind was unclear, but it was plainly wide enough to take the ac outside the relative sanctuary of the ATZ, which caused concern amongst the pilot Members. Without the PA28 pilot's account there was no apparent reason for this wide cct and the Harrier pilots might not have expected to encounter cct traffic here. Subsequent to TOWER's warning, however, it was plain from ATSI's RT recording that the PA28 pilot had spotted both jets. Whilst the PA28 is shown turning L on the radar recording at the point the Airprox occurred, whether its pilot was taking avoiding action himself, or this was just a base-leg turn was not evident.

The Harrier formation pilots clearly had a responsibility to remain clear of the Coventry ATZ at the extremity of the UKLFS Birmingham Avoidance Area, but Members noted that the lead pilot had reported that their route had been planned to pass 3nm from Coventry Airport and thus no more than ½nm outside the 2½nm radius ATZ boundary. Evidently, it is unwise to assume that aerodrome traffic will be contained within the ATZ boundaries. In the absence of RT contact with TOWER, who could have advised about the presence of any local traffic, pilot Members agreed with the Command's view that it was not good airmanship to plan to fly this close to an ATZ boundary. Moreover, despite the reported accuracy of the Harrier's navigational equipment, executing a cross-over turn at this point, thereby placing the No2 even closer to the ATZ also seemed unwise. Indeed the Chairman commented that there was little value in tactical formation flying in this area because of the profusion of LFS avoidances. The radar recording showed that the Harrier's cross-over turn was initiated just before they passed abeam the ATZ at the nearest point, as they also closed on the PA28 that was still unseen ahead. The Harrier pilot's laudably frank account states that the PA28 was not seen until a very late stage when it was a mere 0·2nm away – 400yd - with no time available for avoiding action as the PA28 passed about 100ft above the No2 Harrier. Therefore, the Board concluded that the Cause of this Airprox was effectively, a non-sighting by the Harrier pilots.

It was difficult for the Members to arrive at a more meaningful assessment of the inherent Risk without the PA28 pilot's account. However, on the information provided it was clear the Harrier pilots were unable to avoid the PA28 by any greater margin and the No2 would have been severely restricted in his ability to manoeuvre. Whether the PA28 pilot might have been able to alter his ac's flightpath significantly if he had seen the wingman in time was not known. Neither was it feasible to confirm the vertical separation that actually obtained without Mode C data from the wingman, but there was no reason to doubt the veracity of the leader's estimate of 100ft. The Board concluded that the safety of the ac involved had been compromised.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Effectively a non-sighting by the Harrier pilots.

Degree of Risk: B.