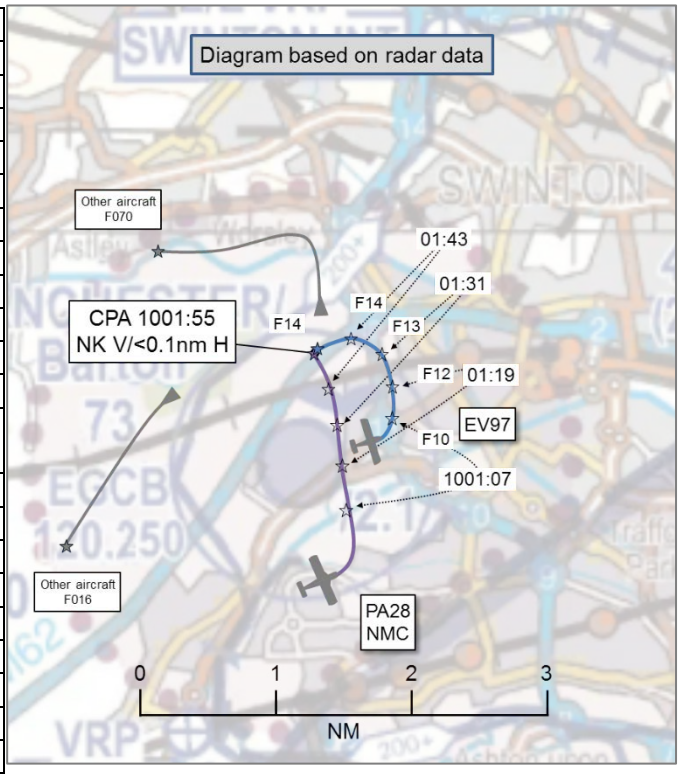
AIRPROX REPORT No 2018074

Date: 28 Apr 2018 Time: 1002Z Position: 5329N 00223W Location: Barton airfield, elev. 73ft

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	EV97	PA28
Operator	Civ Pte	Civ Trg
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Information	Information
Provider	Barton	Barton
Altitude/FL	1300ft	NK
Transponder	A, C, S	A, NMC, S
Reported		
Colours	Silver, red	Red, white
Lighting	Landing light	Strobes, landing, beacon
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1200ft	1000ft
Altimeter	QNH (NK hPa)	QFE (NK hPa)
Heading	230°	0°
Speed	70kt	90kt
ACAS/TAS	PilotAware	Not fitted
Alert	None	N/A
Separation		
Reported	100ft V/0m H	100ft V/100m H
Recorded	NK V/<0.1nm H	



THE EV97 PILOT reports he had taken off from 08R, climbed to circuit height (1000ft) on the crosswind leg and then turned downwind. He continued to climb and, on passing 1200ft, was about to call leaving the circuit to the southwest when he saw a PA28 slightly below and on the left. The PA28 pilot started a turn to the right and dived. The EV97 pilot also turned right and climbed momentarily but resumed his course to the southwest as the PA28 passed below him. He contacted the AFISO and reported leaving the circuit and also reported the 'near miss'. At that time the circuit direction was left-hand on 08R so the EV97 pilot was surprised by the PA28, who's pilot appeared to be flying a right-hand circuit appearing to be crosswind from his point of view but actually on the base leg. The EV97 pilot provided a diagram of the incident (Figure 1) that indicated that he thought the incident had occurred to the southwest of Barton; radar replay showed that the incident had in fact occurred at the start of the downwind leg.

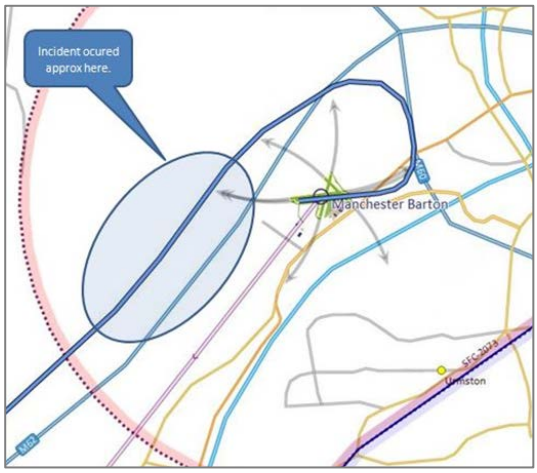


Figure 1

He assessed the risk of collision as 'High'.

THE PA28 INSTRUCTOR reports conducting a training flight. They entered the crosswind leg at 1000ft from an overhead join when the student saw an aircraft in the 2 o'clock position on a constant bearing, which he pointed out to the Instructor because it was hidden from him by the door pillar. The Instructor then took evasive action by pitching down because there was insufficient time to turn right. The aircraft

passed directly over them. Before leaving the Barton frequency the pilot of the other aircraft said he would file an Airprox report. The Instructor also submitted an Airprox report in order to give his view of the occurrence.

He assessed the risk of collision as 'High'.

THE AFISO reports that he did not observe the event.

Factual Background

The weather at Manchester was recorded as follows:

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METAR COR EGCC 281020Z 04007KT 9999 FEW027 BKN034 09/03 Q1012 NOSIG=
METAR COR EGCC 280950Z AUTO 05008KT 9999 SCT024 OVC034 09/04 Q1012 NOSIG=
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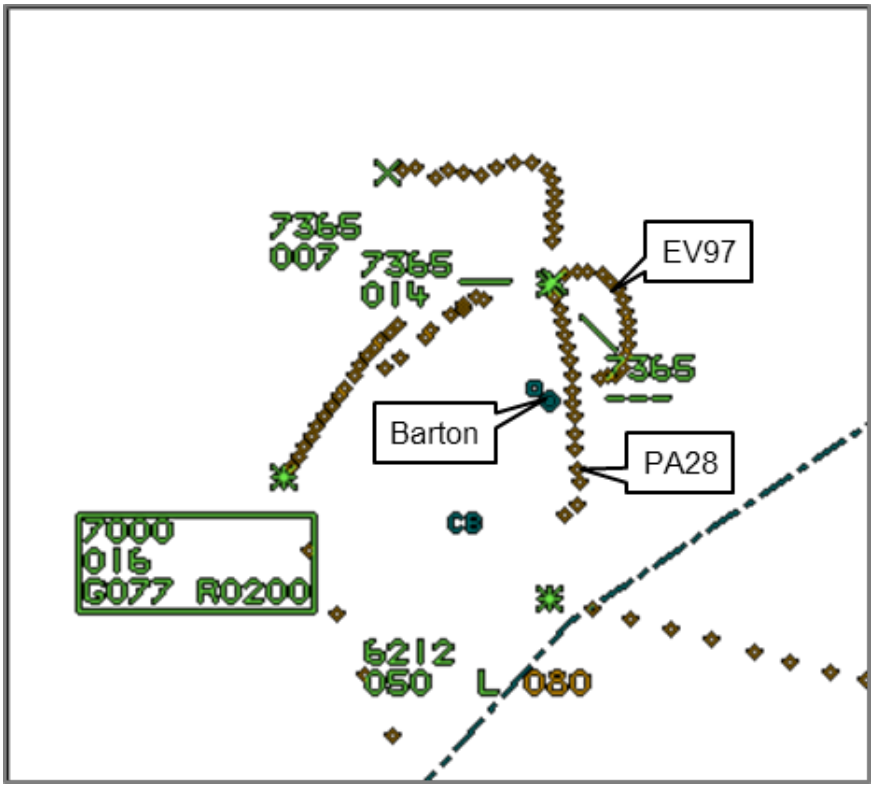
Analysis and Investigation

UKAB Secretariat

The EV97 and PA28 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard[1]. An aircraft operated on or in the vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in operation[2]. A radar replay screen capture shows that CPA occurred to the north of Barton:



Summary

An Airprox was reported when an EV97 and a PA28 flew into proximity in the Barton visual circuit at 1002hrs on Saturday 28th April 2018. Both pilots were operating under VFR in VMC, both in receipt of an Airfield Flight Information Service from Barton Information.

[1] SERA.3205 Proximity.
[2] SERA.3225 Operation on and in the Vicinity of an Aerodrome.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings and a reports from the AFISO involved.

Members first discussed the EV97 pilot's recollection of events and agreed that the radar picture showed that CPA had occurred at the start of the downwind leg rather than at a position downwind of the base leg, and that the PA28 pilot was conducting a normal overhead join. Nevertheless, regardless of position, it was clear that the 2 aircraft had flown into proximity and that the pilots had had to take avoiding action at a late stage. The Board spent some time discussing the requirement for pilots to integrate with other traffic in the visual circuit and to what degree that onus was shared. They agreed that both pilots were in the visual circuit, with the EV97 downwind and the PA28 crosswind and so members discussed the degree to which a pilot was established in the circuit versus joining the circuit. After much discussion it was agreed that in the circumstances of this Airprox the onus of integration was on the joining pilot, the PA28 pilot, because he was effectively still joining the circuit, whereas the EV97 was established downwind. As a result, they agreed that the cause of the Airprox had been that the PA28 pilot did not integrate with the EV97 on the downwind leg. Members also agreed that integration by the joining pilot was highly dependent on the precise geometry and relative performance of the 2 aircraft. For example, a joining aircraft at the crosswind position above the upwind threshold could integrate ahead of an aircraft already established in the visual circuit which was just turning from climb-out to crosswind, provided the established aircraft's crosswind leg was suitably upwind of the joining aircraft.

Whatever the precise circumstances, members agreed that it was for the joining pilot to make appropriate allowance when integrating into the visual circuit. In this case it was evident that the PA28 crew had not seen the EV97 until at a late stage, and therefore both pilots had then had to discharge their equal responsibility to avoid collision, which they did by taking emergency avoiding action. Notwithstanding, the Board agreed that although avoiding action turns had been made by the 2 pilots, separation had been such that safety had been reduced well below the norm; risk Category B.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The PA28 pilot did not integrate with the EV97 downwind.

Degree of Risk: B.

Safety Barrier Assessment[3]

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

ANSP:

Situational Awareness and Action were assessed as **not used** because the barrier is not normally provided by an AFISO.

Flight Crew:

Regulations, Processes, Procedures, Instructions and Compliance were assessed as **ineffective** because the PA28 pilot did not integrate with the EV97**.**

Situational Awareness and Action were assessed as **ineffective** because neither pilot had SA of the other aircraft's position, presumably despite normal radio calls.

[3] The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the UKAB Website.

Warning System Operation and Compliance were assessed as **ineffective** because the EV97 TAS (PilotAware) did not alert on the PA28 transponder output.

See and Avoid were assessed as **partially effective** because each pilot saw the other aircraft at a late stage.