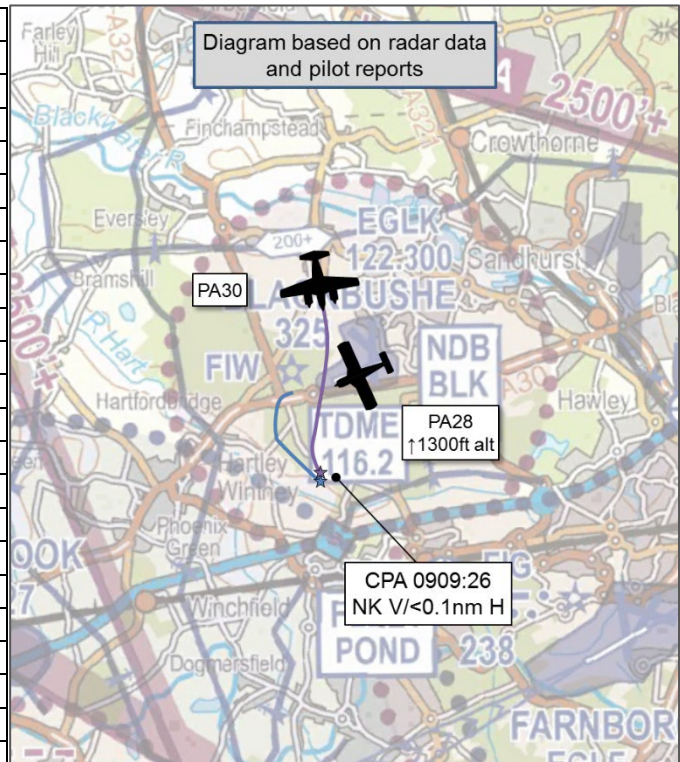


**AIRPROX REPORT No 2018273**

Date: 03 Oct 2018 Time: 0909Z Position: 5118N 00051W Location: Blackbushe

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	PA30
Operator	Civ FW	Civ FW
Airspace	Blackbushe ATZ	Blackbushe ATZ
Class	G	G
Rules	VFR	VFR
Service	AFIS	AFIS
Provider	Blackbushe	Blackbushe
Altitude/FL	1300ft	NK
Transponder	A, C, S	A, S
<b>Reported</b>		
Colours	White, Blue	
Lighting	Beacon, Landing	Strobe, Landing
Conditions	VMC	VMC
Visibility	>10km	10km
Altitude/FL	800ft	900ft
Altimeter	QFE (1015hPa)	QFE
Heading	070°	070°
Speed	90kt	100kt
ACAS/TAS	Not fitted	Unknown
<b>Separation</b>		
Reported	20ft V/20m H	NK
Recorded	NK V/<0.1nm H	



**THE PA28 PILOT** reports that he was flying a circuit detail with a pre-solo student. They were on the climb-out from a touch-and-go when they heard a pilot report that he was returning to Blackbushe. ATC passed the airfield information and asked why the other aircraft was returning early; its pilot replied that he had an issue with a door. The PA28 pilot continued his circuits as usual, levelling off at 800ft QFE, and ATC advised the other pilot that there was an aircraft in his 1 o'clock position (the PA28), which the other pilot acknowledged. There was no other circuit traffic, other than one at the threshold of RW25. Just after turning onto the downwind leg, the student pointed out of the window, stating that an aircraft was close. The aircraft had been hidden from the instructor's view by the ceiling of the aircraft. Leaning across, he could see a PA30 about 50ft above them, appearing to be descending. He took control of the aircraft and closed the throttle in a steep descending turn to avoid a collision, levelling-off at approximately 500ft. Once the other aircraft was well clear, he climbed to 600ft to continue on a low-level circuit to expediate and maintain suitable separation. After calling late-downwind, he was asked to report final. At this point, the PA30 (who was also late-downwind on a wide circuit) stated that he was on a PAN and requested a priority landing. ATC inquired whether he was reporting a PAN, but the pilot stated that he was not. ATC then requested that the PA28 pilot perform a go-around, but he elected to orbit instead. He opined that the other pilot was not communicating adequately that he was experiencing difficulties.

He assessed the risk of collision as 'Medium'.

**THE PA30 PILOT** reports that, on climbing out from Blackbushe in a westerly direction, the passenger-side door sprung open with both catches failing. The passenger, a qualified pilot, reacted with alarm and tried to pull the door closed without success. Following a short discussion, they decided to return to Blackbushe to land as soon as possible. He called Blackbushe Information for a return to join the circuit. Blackbushe could not hear him initially (the radio seemed to be playing up, not helped by the significant increase in noise and airflow from the open door), and so he had to repeat the various following calls. Blackbushe gave the airfield details and asked why they were returning early; he

explained that he had a problem with the door. The FISO gave the QFE, noting there was one in the circuit, and requested a downwind call. He put on both landing lights, descended to 1200ft QFE deadside and proceeded crosswind. He looked for the circuit traffic, saw the PA28 just lifting off, and believed that it would be well behind them in the circuit. As he turned downwind, he again looked for the PA28, but could not see it. At this point he saw that he had lost 300ft in height and was now at 900ft, probably due to the drag and leaning over to look for the PA28. He immediately recovered to 1200ft (the twin circuit height) and commenced downwind checks. Late downwind he saw the PA28 on their left, ahead and well inside, about 500ft below. He pointed out to his passenger that he wouldn't be able to descend and would have to 'fly the circuit'. The passenger was significantly alarmed and said he wouldn't be able to hold the door that long. He therefore made a PAN call to the Tower and requested a priority landing. The PA28 pilot responded that he would orbit to allow them to land. He thanked the PA28 pilot on the radio and landed without further problems. Once on the ground the PA28 instructor told him that they had come close to him in the circuit and that he would be filing an Airprox. He was unable to get a clear indication of when the Airprox happened but he assumed it was when they were turning downwind; they did not see the PA28 at this point, nor did they hear any warning calls on the RT. The aircraft must have been masked by the starboard wing and engine. It seemed that the PA28 pilot flew a tighter, faster circuit than he anticipated and this, combined with the loss of height, brought them into proximity. He had also reduced speed to ease the pressure on the open door. The difficulty of seeing below in a low-wing aircraft, combined with a partly open door and a preoccupied passenger exacerbated the situation.

He assessed the risk of collision as 'None'.

**THE BLACKBUSHE AFISO** reports that the PA30 departed Blackbushe for a land-away. After 5mins the aircraft returned and the pilot requested to join the circuit. The FISO asked the pilot if he had a problem (because he had returned early), and the pilot stated that he had a problem with his door. On joining the circuit, the PA30 pilot was informed that there was traffic in the visual circuit, remaining, and that it was currently in his 1 o'clock: the pilot acknowledged. When downwind, the pilot requested a priority landing because he had a 'PAN' in progress. He was asked twice if he was declaring an emergency, to which he replied quite emphatically that he was not. The aircraft continued to land without further incident.

## Factual Background

The weather at Farnborough was recorded as follows:

METAR EGLF 030850Z 28005KT 240V320 9999 FEW032 14/11 Q1028=

## Analysis and Investigation

### UKAB Secretariat

Blackbushe does not have any radar and so figures 1-4 show the Airprox as seen on the NATS 'Heathrow 10' radar. At 0907:54 (Figure 1) the PA30 (squawking 7000) can be seen orbiting to the north-west of Blackbushe, its Mode C is not indicating an altitude. The PA28 has just descended below radar cover on the approach to the runway.

Figure 2, at 0908:48, shows the PA30 crosswind whilst the PA28, squawking 7010 and indicating 1000ft, can be seen turning onto downwind.

Figure 3 shows the two aircraft as they converge. The PA28 can be seen to have climbed to 1200ft but the height of the PA30 still cannot be seen.

Figure 4 shows CPA at 0909:26 when the two aircraft are within 0.1nm of each other laterally, height separation is not known although the PA28 is indicating 1300ft altitude (approx 1000ft agl).

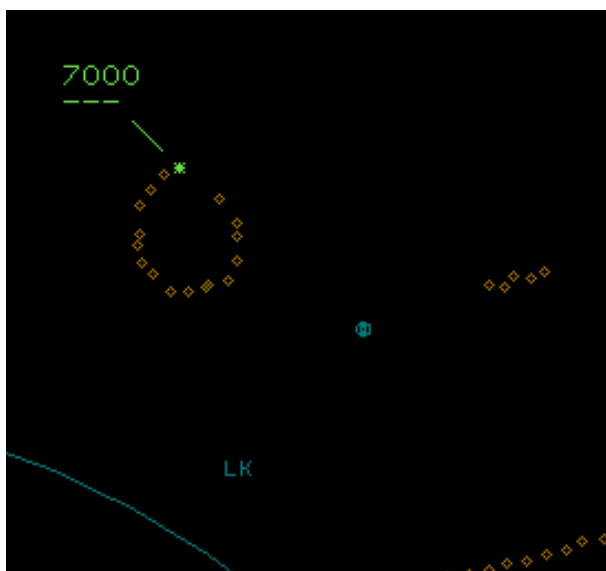


Figure 1: 0907:54



Figure 2: 0908:48

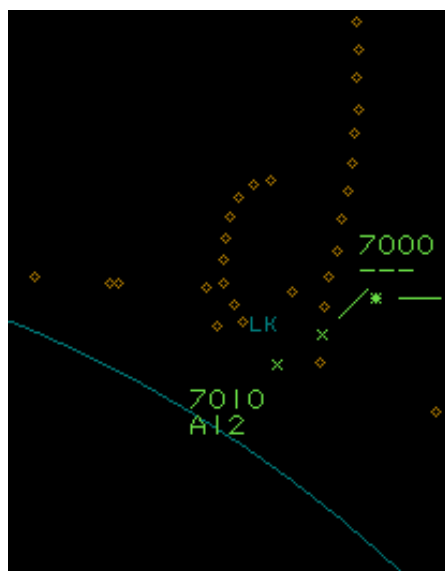


Figure 3: 0909:15

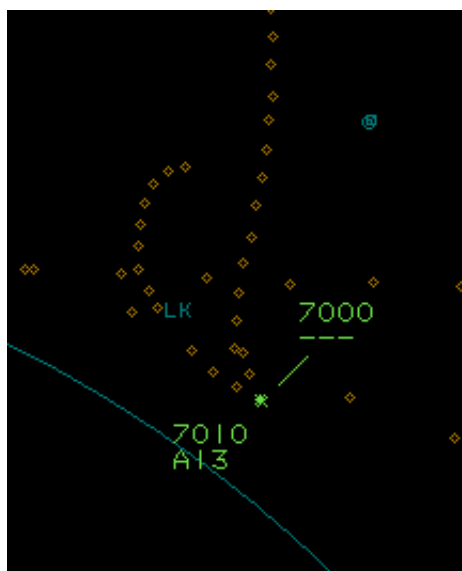


Figure 4: 0909:26

The PA28 and PA30 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard<sup>1</sup>. 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<sup>2</sup>.

## Summary

An Airprox was reported when a PA28 and a PA30 flew into proximity in the Blackbushe visual circuit at 0909hrs on Wednesday 3<sup>rd</sup> October 2018. Both pilots were operating under VFR in VMC and were receiving an AFIS from the Blackbushe AFISO.

<sup>1</sup> SERA.3205 Proximity.

<sup>2</sup> 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 the pilots of both aircraft, radar photographs/video recordings and a report from the AFISO involved.

The Board first looked at the actions of the PA28 pilot. He was instructing in the visual circuit when he heard the PA30 pilot call for a return to Blackbushe. Although he knew the other pilot had an issue, he was not aware of its extent. The Board noted that he could have reasonably expected that the PA30 pilot would therefore integrate with him, because he was already established in the circuit. Had the PA30 pilot declared his problem and intentions more clearly, members agreed that the PA28 pilot would likely have extended his climb before turning onto downwind, thereby removing the need for the PA30 pilot to concern himself about sequencing with the PA28. The Board were informed that the single-engine circuit height at Blackbushe was 800ft QFE, whilst the twin-engine circuit height was 1200ft QFE. This should have given 400ft vertical separation between the 2 aircraft irrespective of the ground tracks. However, it seemed that the PA28 instructor was not aware that his student had inadvertently climbed to about 1000ft agl (as indicated by its transponder Mode C readout). It was unfortunate that the PA30 pilot had also descended 200ft from the normal twin-engine pattern height, thereby putting the two aircraft in proximity. The PA28 student saw the PA30 and alerted the instructor who took immediate avoiding action at what was a very late stage. Without a Mode C readout from the PA30, the Board could not tell the exact separation between the two aircraft, but noted that the PA28 instructor had estimated it to be only 20ft.

Turning to the PA30, the Board noted that although the pilot and his passenger had become very preoccupied with the open door, GA members commented that once it had opened, the slipstream would have stopped it from opening fully. Although the noise and airflow in the cockpit would have still been a distraction, the passenger did not need to try to hold it shut, and the pilot could have flown a normal circuit. By becoming pre-occupied with the open door, the PA30 pilot had allowed himself to become distracted to the detriment of look-out and normal circuit operations. Had the PA30 pilot declared a PAN at an early stage, this would have alerted the AFISO and other pilots in the circuit about his predicament and they would have afforded him priority to land; the Board noted that pilots were often reticent to declare an emergency, and there was no reason why this should be the case. The PA30 pilot had stated that he saw the PA28 'lifting off' and members wondered whether he had assumed that the PA28's flightpath would take him further out and so discounted it as a factor rather than keeping it in sight. In normal circumstances, without an emergency, it would have been expected that the PA30 would have fitted in behind the PA28 which was already established in the circuit. Finally, the Board noted that the PA30 pilot either did not have his Mode C switched on, or it was unserviceable. Members wished to highlight to pilots that SERA 130001 now requires them to have their transponders on at all times when airborne, with all modes selected, in order to provide situational awareness to ATC and to allow it to act as an electronic barrier to mid-air-collision.

Finally, the Board looked at the actions of the AFISO. He had given the PA30 pilot an opportunity to declare an emergency on more than one occasion, firstly when he asked why it was returning early and then again when downwind. Although, he was not aware of the extent of the problem with the door, he was obviously closely monitoring the situation and had given appropriate Traffic Information to the PA30 pilot as the PA30 joined.

In determining the cause of the Airprox, the Board quickly agreed that the PA30 pilot had not integrated with the PA28 already established in the visual circuit. However, they also agreed that there were two contributory factors: firstly, that the PA30 pilot was distracted by the open door; and secondly, that neither pilot was at their respective promulgated circuit heights. In assessing the risk, the Board agreed that this had been a situation where the separation had been reduced to the bare minimum. The PA30 pilot did not see the PA28 and, although the PA28 pilot had been able to take a measure of avoiding action at the last moment, this had only amounted to sufficient deviation to achieve in the order of 20ft separation according to the PA28 instructor's report. As a result, the risk was assessed as Category A.

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

Cause: The PA30 pilot did not integrate with the PA28 in the visual circuit.

Contributory Factors: 1. The PA30 pilot was distracted by the open door.  
2. Neither pilot was at their respective promulgated circuit heights.

Degree of Risk: A.

**Safety Barrier Assessment**<sup>3</sup>

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

**Flight Crew:**

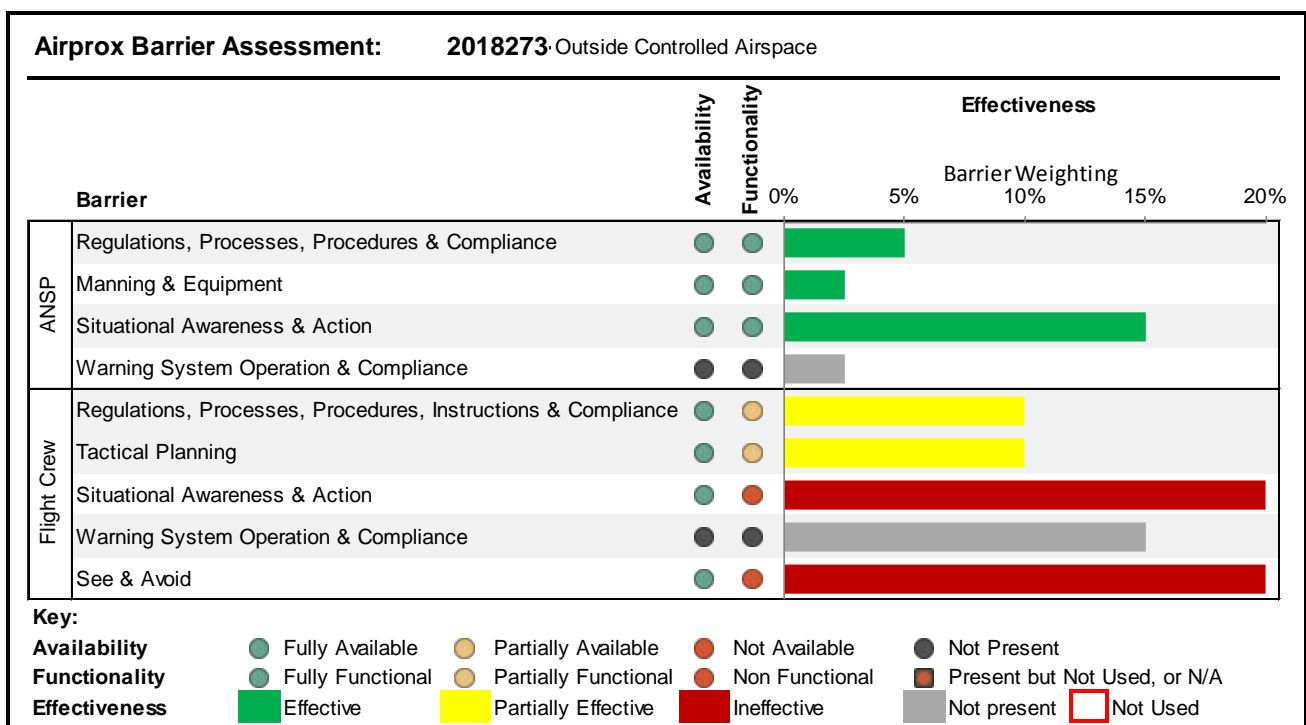
**Regulations, Processes, Procedures, Instructions and Compliance** were assessed as **partially effective** because neither pilot flew at the promulgated circuit height.

**Tactical Planning** was assessed as **partially effective** because the PA30 did not formally declare a PAN, which would have alerted the AFISO and other pilots about his need to land quickly.

**Situational Awareness and Action** were assessed as **ineffective** because the PA30 pilot knew about the PA28, but didn't integrate with him in the circuit.

**Warning System Operation and Compliance** were not present on either aircraft.

**See and Avoid** were assessed as **ineffective** because neither pilot saw the other aircraft in time to take effective avoiding action.



<sup>3</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).