

## AIRPROX REPORT No 2018165

Date: 14 Jul 2018 Time: 0931Z Position: 5119N 00048W Location: Blackbushe

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	PS28	AW109
Operator	Civ FW	Civ Heli
Airspace	Blackbushe ATZ	Blackbushe ATZ
Class	G	G
Rules	VFR	VFR
Service	AFIS	Basic
Provider	Blackbushe	Farnborough
Altitude/FL	1000ft	1300ft
Transponder	A, C, S	A, C, S
Reported		
Colours	White, Silver	Grey, Silver
Lighting	Strobes, Landing light	Anti-cols, Position, Landing, Strobes.
Conditions	VMC	VMC
Visibility	>10km	10km
Altitude/FL	800ft	1400ft
Altimeter	QFE (1009hPa)	NR
Heading	330°	180°
Speed	90kt	145kt
ACAS/TAS	Not fitted	TCAS I
Alert	N/A	None
Separation		
Reported	200ft V/300m H	300ft V
Recorded	300ft V/0.2nm H	



**THE PS28 PILOT** reports that he was on a training detail, which was a solo circuit check flight for student that hadn't flown for three weeks, his last flight had been his first solo. The first few circuits were very wide so they started practising getting used to normal-width circuits. They heard a pilot call to transit to the east of the ATZ who reported working Farnborough on box one. This was perceived by the PS28 pilot that the other aircraft would be remaining outside the ATZ, and he believed that the 'controller' thought the same because he wasn't given any Traffic Information by the AFISO. As they rolled out on base, the student called some traffic straight ahead at the same level. The instructor looked up to find opposite direction helicopter traffic, similar level (within 200ft) which was passing slightly inside. He turned right (left hand circuit) to avoid. The other aircraft was clearly in the ATZ and appeared to be lower than the 1400ft originally reported.

He assessed the risk of collision as 'Low'.

**THE AW109 PILOT** reports that he made initial contact with Farnborough LARS for 'ATSOCAS' and ATZ transit. Blackbushe were also contacted and advised of a request to transit the eastern ATZ portion. This was acknowledged and he recalled that they were advised that there was 1 aircraft in the circuit, which was noted visually. Farnborough LARS transferred them to Farnborough TWR, who subsequently requested a hold north of Farnborough prior to approving a southbound overhead transit of the ATZ, after IFR traffic had landed on RW24. The circuit traffic at Blackbushe was not considered to be unusually close in proximity and no TCAS TA audio was noted. The flight continued southbound to clear both ATZ and to the destination with no Airprox reported on the RT.

He assessed the risk of collision as 'Low'.

**THE BLACKBUSHE AFISO** reports that, at the time of the incident, the aerodrome was subject to a RA(T) associated with the Farnborough International Air Show. The LOA between Blackbushe and Farnborough agreed that, amongst other restrictions, the circuit would be restricted to 800ft QFE. At 0928 the AW109 called Blackbushe and advised that they would pass to the east of the ATZ while working Farnborough Radar 'on the other box'. He was advised, and acknowledged that there were two in the visual circuit, but Traffic Information was not passed to the circuit traffic because it was perceived that the helicopter would remain outside the ATZ. Had there been a concern regarding the helicopter's route, then its altitude would have been a potential conflict because 1400ft converted to a height above the aerodrome would be 1075ft, a potential conflict with circuit traffic. The PS28 was on base leg when its pilot saw the helicopter and turned right to increase spacing. The pilot came to the Tower after landing to discuss the event and both pilot and AFISO agreed that they had not expected the helicopter to route within the ATZ. The controller opined that having demonstrated good airmanship by calling Blackbushe in the first place, the AW109 pilot may have had his routing changed by Farnborough because of the RA(T).

**THE FARNBOROUGH CONTROLLER** reports that he was the LARS controller on a busy Saturday morning. The AW109 pilot called on frequency and he gave him clearance to route to the northern aerodrome boundary at Farnborough. The frequency was very busy and when he looked to identify a departure he realised the AW109 was inside the Blackbushe ATZ. He challenged the pilot to ask whether he was working Blackbushe on his other box, to which he replied that he was. He was not told that there had been an Airprox at the time.

## **Factual Background**

The weather at Farnborough was recorded as follows:

EGLF 140920Z VRB03KT 9999 FEW024 22/14 01021

## **Analysis and Investigation**

CAA ATSI

*Note: Time references for Blackbushe R/T transmissions are believed to be 20-30 seconds in advance.*

At 0927:00 (Figure 1), the AW109, which was 9nm north of Blackbushe, contacted the Farnborough LARS West controller, requesting a Basic Service, a transit of their ATZ, and also of the RA(T) established for the Farnborough Airshow.

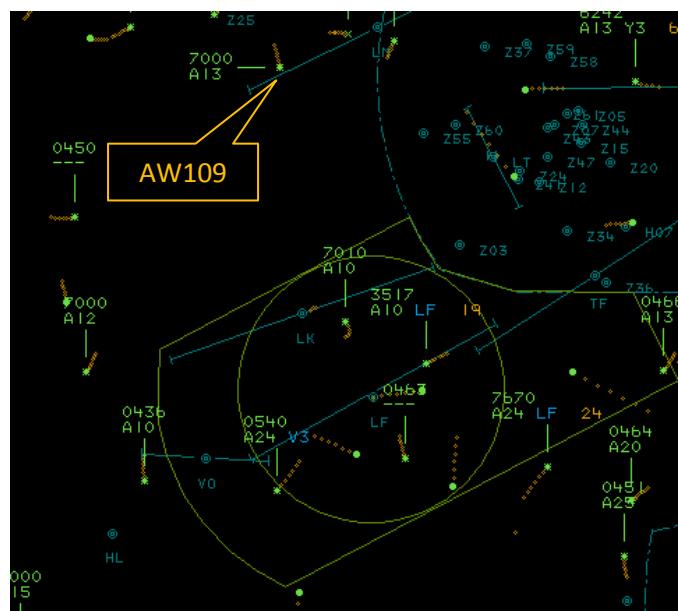


Figure 1 – 0927:00

The Farnborough controller allocated a transponder code (0431), passed the Farnborough QNH and confirmed it was a Basic Service. The controller asked if the pilot could accept a climb for transit, to which the pilot agreed, requesting a Traffic Service if they did. The controller advised that they were too busy to provide a Traffic Service, and so it was agreed that the aircraft would continue at its original level. The controller issued a clearance to transit and asked the pilot to report at the northern aerodrome boundary.

At 0928:47 (Figure 2), the AW109 pilot, who was now 5nm north of the airfield, contacted Blackbushe on their second radio, advising that they were southbound, not requesting an ATS, but were wanting to pass to the eastern side of the Blackbushe ATZ at 1400ft. The pilot confirmed that they were speaking to Farnborough on their other radio. The Blackbushe AFISO acknowledged this and advised that there were two fixed-wing aircraft in the circuit, that the circuit height was 800ft, and that they were using RW25L. They also passed the Blackbushe QNH. The pilot acknowledged this and advised that they would report when clear to the south. The PS28, which had been flight training and conducting both wide and normal circuits at Blackbushe, reported downwind for a touch-and-go at 0929:40, and was asked to report final by the AFISO (Figure 3).

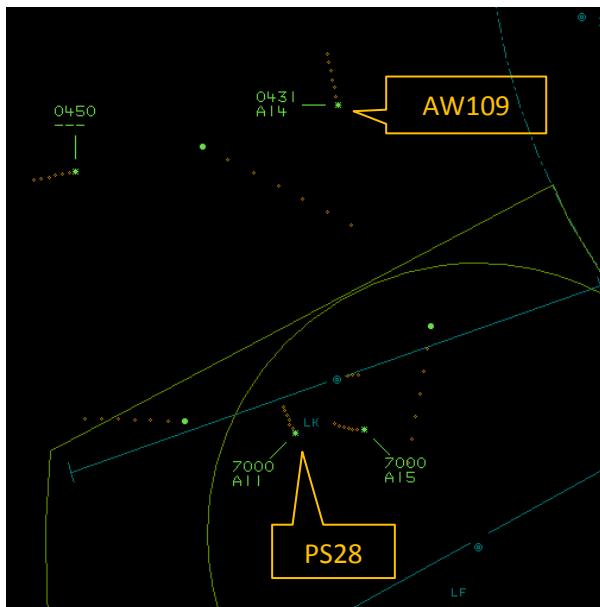


Figure 2 – 0928:47

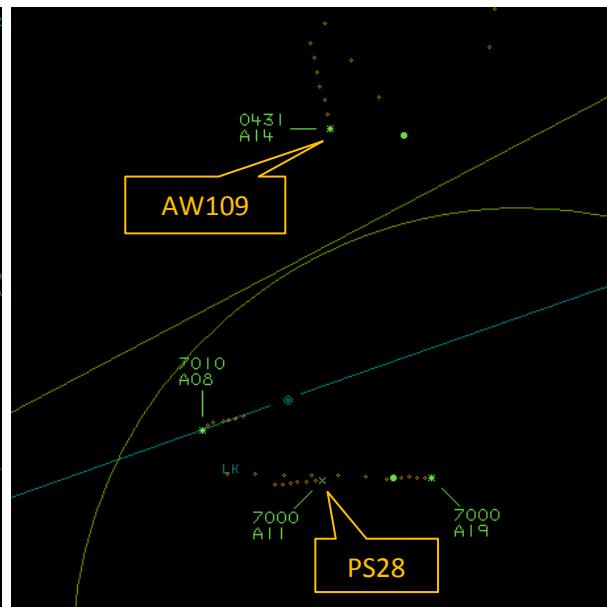


Figure 3 – 0929:40

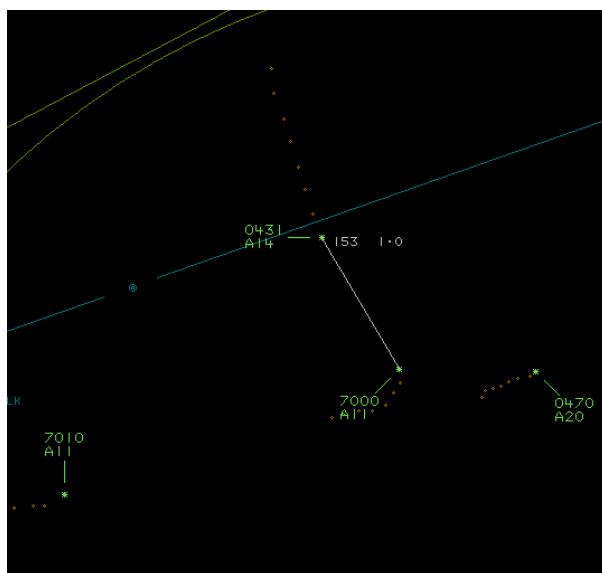


Figure 4 – 0930:46

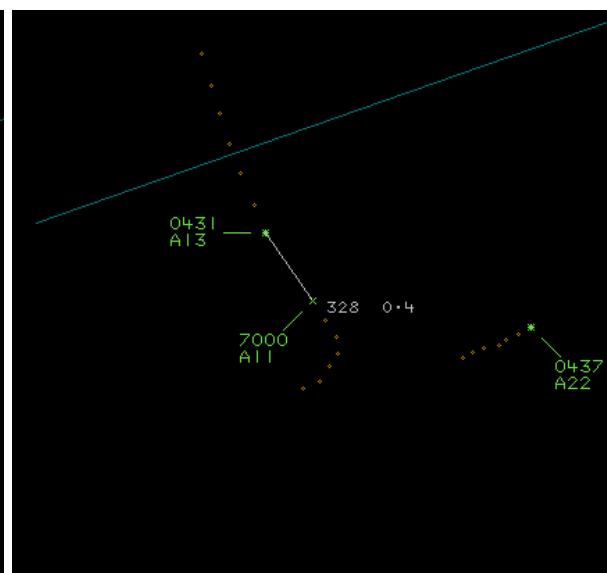


Figure 5 – 0930:52

At 0930:46 (Figure 4), the PS28 pilot reported that a helicopter was transiting straight through the ATZ about 200ft above circuit height, and that they had had to take avoiding action whilst on base leg. The AFISO acknowledged this and advised that the helicopter was at 1400ft, to which the pilot remarked that they thought it was lower than that. Meanwhile, at 0930:52 (Figure 5), the Farnborough LARS controller called the AW109 pilot, advising that they were inside the Blackbushe ATZ, and asked if they were speaking to them, which the pilot confirmed. CPA took place at 0931:02 (Figure 6), with the aircraft separated by 0.2nm laterally and 300ft vertically.

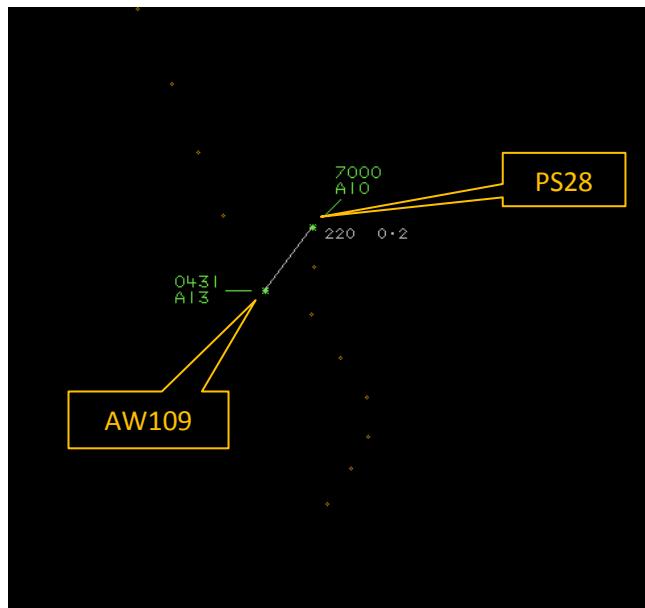


Figure 6 – 0931:02

The Farnborough LARS frequency evidenced almost continuous transmissions during this period, with aircraft possibly taking the opportunity to transit the area whilst the display validation flights had been suspended for a period of time at Farnborough. Based on the initial call made by the AW109 pilot, the Blackbushe AFISO had assumed he was intending to remain clear to the east of their ATZ, and therefore clear of the circuit, which was why no Traffic Information was passed. This assumption was supported by the report from the PS28 pilot who had heard the AW109 transmissions, and had also expected the aircraft to remain clear of the ATZ. The AW109 pilot reported seeing circuit traffic after having been advised of circuit activity by the Blackbushe AFISO.

Based on the information available to both the Farnborough controller and the Blackbushe AFISO, both acted in accordance with the requirements of their licences and the services being provided. Both aircraft were operating in Class G airspace where, regardless of the service being provided, the pilots were ultimately responsible for collision avoidance.

#### **UKAB Secretariat**

The PS28 and AW109 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>. If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right<sup>2</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>3</sup>. If an aerodrome provides a FIS the aircraft commander must obtain information from the FISO to enable the flight to be conducted safely within the ATZ.<sup>4</sup>

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

<sup>2</sup> SERA.3210 Right-of-way (c)(1) Approaching head-on.

<sup>3</sup> SERA.3225 Operation on and in the Vicinity of an Aerodrome.

<sup>4</sup> Rules of the Air 2015 Section 3 rule 11 Flight within Aerodrome Traffic Zones.

## Summary

An Airprox was reported when a PS28 and a AW109 flew into proximity in the Blackbushe ATZ at 0931hrs on Saturday 14th July 2018. Both pilots were operating under VFR in VMC, the PS28 pilot in receipt of an AFIS from Blackbushe and the AW109 pilot in receipt of a Basic Service from Farnborough.

## **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available consisted of reports from both pilots, transcripts of the relevant R/T frequencies, radar photographs/video recordings, reports from the air traffic controller and FISO involved and reports from the appropriate ATC operating authorities.

The Board first looked at the actions of PS28 pilot. He was in the Blackbushe visual circuit and, although he heard the AW109 pilot's call, he interpreted it to mean that the helicopter would remain outside the ATZ. This was confirmed in his mind when the AFISO did not make a broadcast declaring an ATZ crossing. He was therefore surprised when the student alerted him to the AW109 in close proximity routing in the opposite direction as they were on base. The instructor took control from the student and took avoiding action. Acknowledging that there was little else the instructor could have done in the circumstances, the Board commented that this highlighted the need for good look-out at all times, even when flying in the visual circuit and within the nominal protection of an ATZ.

For his part, the AW109 pilot thought he had informed the AFISO of his intention to cross through the ATZ but his phraseology was ambiguous and the FISO (and PS28 pilot) had interpreted it that he was keeping clear to the east. Being a unit with only an AFISO, the AW109 pilot was not required to obtain a clearance to cross the Blackbushe ATZ but was required to obtain sufficient information to enable the flight to be conducted safely. Some members thought that in passing the runway in use, circuit state and QNH, the pilot may have thought that the AFISO had understood his intentions; they also thought that with the RA(T) in place at Farnborough the pilot may have been task-focused in ensuring he transited through Farnborough airspace during a break in the flying display programme and was thus more intent on forward planning to that part of his flight. Despite all this, it was still for the AW109 pilot to ensure that he gave way to Blackbushe circuit traffic. Given the AW109 pilot's perception that he had been told there was only one aircraft in the Blackbushe circuit (when in fact he had been told there were 2), the Board debated for some time whether the pilot was actually visual with the PS28 or with the other circuit traffic that was downwind and which he might then take to mean that he was clear of the circuit traffic. On balance, members decided that he probably was visual with the PS28 because he had accurately estimated the separation, but they unanimously agreed that he would have been better served to allow more separation, even if he himself was content with the distance between them, rather than risk startling the other pilot.

Turning to the role of the Blackbushe AFISO, members could understand why he thought the AW109 pilot was remaining clear of the ATZ because its pilot's phraseology had been ambiguous. Although they thought that the AFISO had therefore discharged his responsibilities correctly, they thought that if he had had the capacity to do so, it would have been advantageous for the AFISO to have searched for the helicopter visually to confirm how far out it really was. That being said, they were cognisant that they did not know the layout of the tower at Blackbushe, or indeed whether the AFISO would have been able to see the AW109 or not.

Finally, the Board briefly looked at the actions of the Farnborough controller. He was providing a Basic Service and was clearly busy because he had told the AW109 pilot that he could not provide a Traffic Service. Once he realised that the helicopter was within the Blackbushe ATZ he asked the pilot whether he had spoken to Blackbushe and, being told that he had, was content with the situation. Without knowing about the misunderstanding over the ATZ crossing, there was little more he could have done.

In assessing the cause of the Airprox, the Board quickly agreed that the AW109 pilot had not avoided the pattern of traffic at Blackbushe and had flown into conflict with the PS28. The Board also agreed that there had been a contributory factor regarding the AW109 pilot's ambiguous communication of

intentions about his transit. Turning to the risk, the Board commented that this could easily have been a very serious incident given that the PS28 pilot would likely have been focussing on his circuit pattern and might not have seen the AW109. Notwithstanding, they noted that both pilots had described the risk as 'Low', the PS28 pilot had been able to take timely and effective avoiding action, and, with 300ft actual separation recorded, they determined that although safety had been degraded there had been no risk of collision; risk Category C.

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

**Cause:** The AW109 pilot did not avoid the pattern of traffic at Blackbushe and flew into conflict with the PS28.

**Contributory Factor:** Ambiguous communication of intentions by the AW109 pilot regarding his transit in proximity to the ATZ.

**Degree of Risk:** C.

### **Safety Barrier Assessment<sup>5</sup>**

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 **ineffective** because, through no fault of his own, the AFISO did not assimilate the conflict.

#### **Flight Crew:**

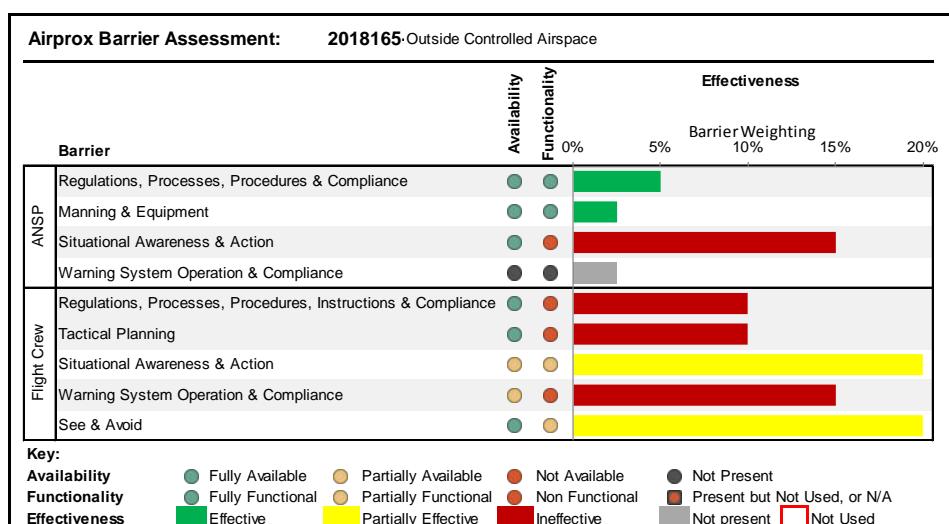
**Regulations, Processes, Procedures, Instructions and Compliance** were assessed as **ineffective** because the AW109 pilot did not remain clear of the pattern of traffic at Blackbushe.

**Tactical Planning** was assessed as **ineffective** because the AW109 pilot did not make it clear to the AFISO that he wanted to transit through the ATZ.

**Situational Awareness and Action** were assessed as **partially effective** because the AW109 pilot was given Traffic Information but still transited closer than desirable to the circuit traffic.

**Warning System Operation and Compliance** were assessed as **ineffective** because although the AW109 had TCAS, it did not alert.

**See and Avoid** were assessed as **partially effective** because the PS28 pilot was able to take avoiding action albeit later than desirable.



<sup>5</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).