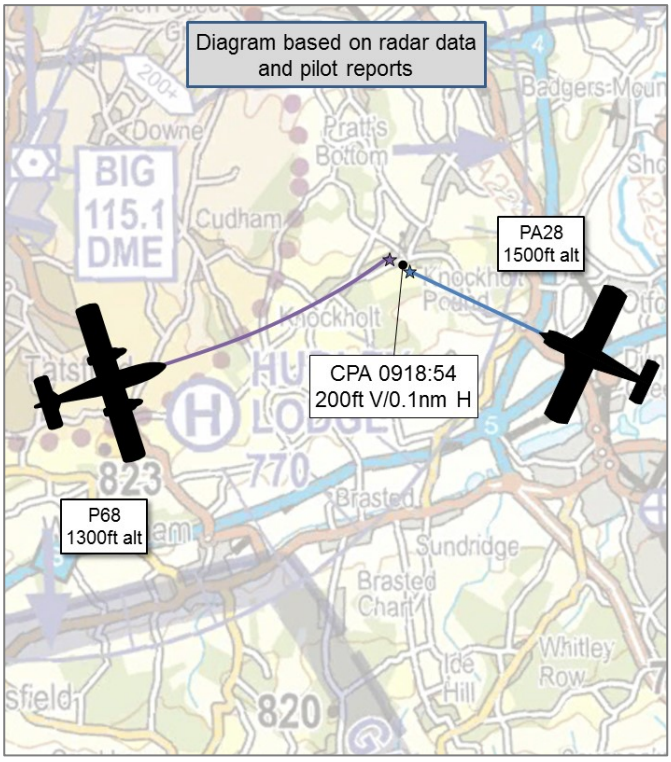
AIRPROX REPORT No 2019131

Date: 01 Jun 2019 Time: 0918Z Position: 5118N 00007E Location: 3nm SE Biggin Hill

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	Partenavia P68
Operator	Civ FW	Civ Comm
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Basic
Provider	Biggin Hill	Biggin Hill
Altitude/FL	1500ft	1300ft
Transponder	A, C	A, C, S
Reported		
Colours	White, Red	White, Blue
Lighting	Beacon	Nav, Beacon
Conditions	VMC	VMC
Visibility	10km	>10km
Altitude/FL	1000ft	1200ft
Altimeter	QFE (1003hPa)	QNH (1022hPa)
Heading	300°	110°
Speed	98kt	110kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	100ft V/200m H	500ft V/2nm H
Recorded	200ft V/0.1nm H	



THE PA28 PILOT reports that he was completing a training flight with a student who was approximately halfway through the course. They were returning via Sevenoaks and had descended to circuit height of 1000ft, visual with the field, as per the standard procedures and instructions from ATC. Both Biggin Tower and Approach were in operation. The PA28 was fitted with two altimeters and when crossed checked on the ground and in the air were no more than +/- 30ft apart. Before he reported 3nm and was handed over to Biggin Tower, he heard, whilst still on the Biggin Approach frequency, that the Partenavia had just departed and was climbing to 2000ft. It appeared to him that the Partenavia did not climb to 2000ft before flying back into the Biggin ATZ on the deadside approach to the Biggin circuit, having just flown over Biggin village and setting off the sound decibel sensor. He saw the Partenavia approaching from the left to pass right in front of them in what appeared to be a steep descent. He estimated that they only missed by ¼nm and approximately 100ft. It was close enough for the PA28 to fly through the P68's prop wash and scare the PA28's student. He reported the Airprox to Biggin Tower.

The pilot assessed the risk of collision as 'High'.

THE P68 PILOT reports that he was departing Biggin to the NE for a photo mission. When transferring from the Tower to the Approach frequency they requested that he 'Report passing Sevenoaks and your altitude climbing to', to which he replied. He then heard another aircraft on frequency reporting at Sevenoaks and being told to join and report left-base for RW21. He began looking to his right for this joining aircraft whilst informing the P2 that they should expect the aircraft from that direction. He reduced the rate of climb because he expected the joining aircraft to be higher than his current altitude. After about 2mins the other aircraft came into view in his 2 o'clock, high, on a heading to cross right-to-left behind his aircraft, about 2-3nm away. He reduced his altitude to maintain visual separation, and the aircraft passed behind him without any threat.

The pilot assessed the risk of collision as 'Low'.

THE BIGGIN APPROACH CONTROLLER reports that the PA28 pilot requested to re-join Biggin circuit on the APP frequency, he was given a standard deadside join. The P68 departed RW21 at 0915Z, turning left at 2nm to route towards Swanley. The P68 pilot called APP and reported climbing to 2.4A and was instructed to report passing Swanley. Because the aircraft was a twin, TI was not passed as the controller expected him to climb to his requested altitude before turning northbound. The PA28 pilot reported 3nm east and was transferred to ADC. The PA28 pilot then reported on ADC that the P68 had been "very close".

THE BIGGIN AERODROME CONTROLLER reports that his colleague, who was providing APP, handed him a joining PA28 from the east. He asked his colleague if the inbound aircraft was visual with an outbound P68 he was working because it looked fairly close to him. He responded by being surprised by the position of both aircraft. Once the inbound aircraft was on the ADC frequency, the PA28 pilot reported that he was concerned with the confliction of the outbound aircraft. The pilot also reported that he would be filing an Airprox.

Factual Background

The weather at Biggin Hill was recorded as follows:

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METAR EGKB 010920Z 18006KT 130V210 CAVOK 19/12 Q1022
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Analysis and Investigation

CAA ATSI

An Airprox was reported when an inbound PA28 and an outbound P68 came into proximity 3.5 miles ESE of Biggin Hill Airport. The PA28 pilot reported that they were on a VFR training flight with a student who was approximately halfway through their course and that they were returning to Biggin Hill from the southeast, via Sevenoaks, at circuit height of 1000 feet QFE. The P68 had departed RW21 at Biggin Hill, with a left turn out, VFR, to the Northeast, on a photo detail.

Both pilots were in receipt of a Basic Service with Biggin Hill Approach when the Airprox occurred. Biggin Hill ATC were operating split Tower and Approach (non-radar) positions at the time of the Airprox. The screenshots in this report are taken from the Area Radar. Biggin Hill's radar is only approved for use as an Air Traffic Monitor (ATM) that displays a feed from the London area; the screenshots are not representative of what may have been displayed on the ATM. The R/T provided by Biggin Hill Airport was not time stamped and as such the times provided in this report may not be completely accurate but have been lined up with what was being displayed on the radar recording as closely as was possible.

At 0913:15, the PA28 pilot called the Approach controller and advised that they were approaching Sevenoaks from the southeast, at 2000ft, were squawking 7047 and were ready for re-join. The pilot was instructed to report 3 miles to run on the deadside RW21 for a Right-Hand circuit, QFE 1003. The pilot provided a full and accurate readback.

At 0915:25, the Tower controller cleared the P68 pilot for take-off from RW21 with a left turn out at 2 miles. This was readback accurately by the pilot and a discussion followed about transponder codes which resulted in squawk 7047 being allocated. The pilot advised the controller that they would be routing to the Northern corridor, just to the east of the City Zone. The controller responded that this was copied.

At 0916:45 (Figure 1), the Tower controller instructed the P68 pilot to contact Biggin Hill Approach.

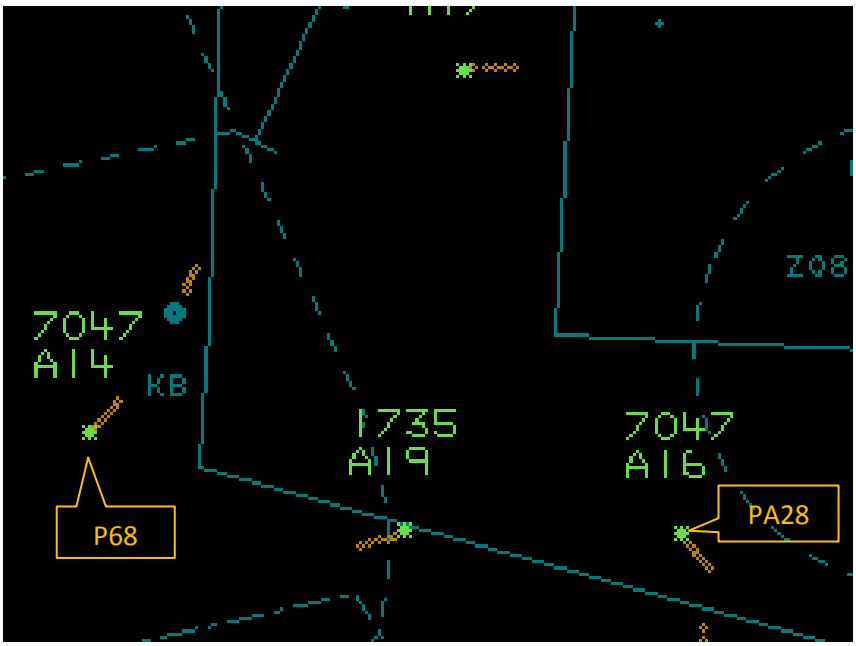


Figure 1 - 0916:45

At 0917:15 (Figure 2), the P68 pilot called the Approach controller and advised that they were at 1.5 miles. The controller instructed the pilot to report passing abeam Swanley and asked what level they were climbing to. The pilot responded with *"report abeam Swanley and 2400 feet"*.

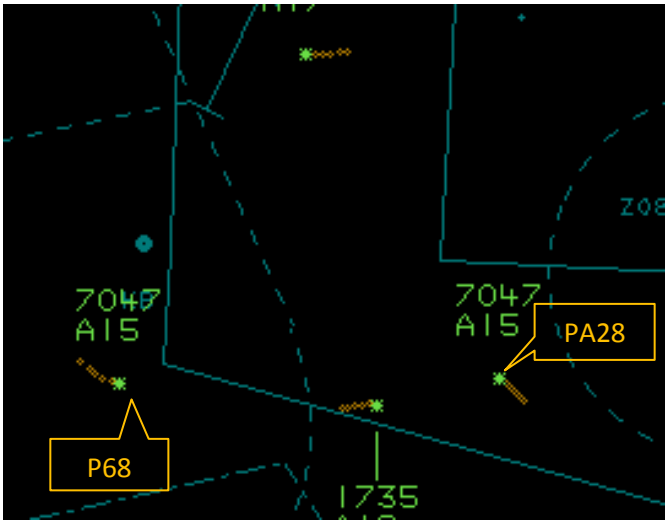


Figure 2 - 0917:15

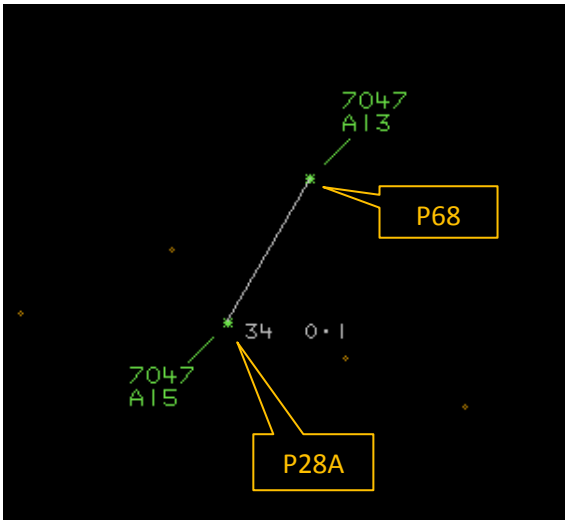


Figure 3 - 0918:58 CPA

CPA occurred at 0918:58 (Figure 3), with a separation of 0.1nm laterally and 200ft vertically.

At 0919:35, the PA28 pilot reported 3 miles to run and was instructed to continue with their join and contact Biggin Hill Tower.

At 0920:10, the PA28 pilot contacted the Tower controller. The controller instructed the pilot to continue and join downwind. The pilot readback the instruction and advised the controller that they had got very close to the Partenavia (P68) at circuit height. The controller responded that they would speak to the Approach controller about this.

The Airprox occurred in Class G airspace with both pilots in receipt of a Basic Service from Biggin Hill Approach. Biggin Hill ATC were providing split Tower and Approach non-radar services at the time of the Airprox.

CAP 493 states:

Given that the provider of Basic Service is not required to monitor the flight, pilots should not expect any form of traffic information from a controller. The avoidance of other traffic is solely the pilot's responsibility.

However, if a controller notices that a definite risk of collision exists, a warning shall be issued to the pilot. ((EU) 923/2012 SERA.9001 and SERA.9005(b)(2))

Biggin Hill MATS Part 2 states:

2. Procedures for Outbound 'Basic Service' and 'Procedural Service' Traffic

2.2 If workload permits the Approach Controller may pass general traffic information on initial contact with the departing aircraft being provided with a Basic Service to assist with the pilot's situational awareness. This will not normally be updated by the controller unless the situation has changed markedly, or the pilot requests an update. The Approach Controller should request the aircraft to report passing the appropriate reporting point or an appropriate range from the aerodrome (normally BIG D5.0). Aircraft may leave the frequency prior to these reporting points to contact another ATSU.

The Approach controller stated in their report that Traffic Information had not been passed because the P68 was a twin-engine aircraft and that they had expected the pilot to climb to their requested altitude of 2400ft before turning on track. However, the departure instructions issued to the P68 pilot by the Tower controller did not contain an instruction to climb to altitude 2400ft before commencing the left turn.

The Tower controller stated in their report that when the Approach controller handed them the PA28 aircraft arriving from the east, they thought that it was very close to the P68 and when asked if the inbound PA28 was visual with the outbound P68 the Approach controller appeared surprised by the positions of both aircraft.

The above Biggin Hill MATS Part 2 entries placed a responsibility on the Approach controller to pass Traffic Information to the pilots of both aircraft where workload permitted. During the period of review of the R/T there were opportunities to pass two-way Traffic Information. However, it would appear from the controller reports that the Approach controller did not assimilate the relative positions of both aircraft and as a result of this did not identify that a risk of collision existed.

Biggin Hill Investigation Report Summary

Whilst the Approach Controller should have been more aware of the potential confliction, aided by the use of the ATM, there was no responsibility to provide separation or pass Traffic Information to either pilot. However, since the Approach Controller was aware of the approximate location of both aircraft, there was a Duty of Care to make both aircraft aware of each other, so Traffic Information should have been passed.

UKAB Secretariat

The PA28 and P68 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]. If the incident geometry is considered as converging then the P68 pilot was required to give way to the PA28[2].

Summary

An Airprox was reported when a PA28 and a P68 flew into proximity SE of Biggin Hill at 0919hrs on Saturday the 1st of June 2019. Both pilots were operating under VFR in VMC, the PA28 pilot in receipt of a Basic Service from Biggin ADC and the P68 pilot in receipt of a Basic Service from Biggin APP.

[1] SERA.3205 Proximity.
[2] SERA.3210 Right-of-way (c)(2) Converging.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings and reports from the air traffic controller involved. Relevant contributory factors mentioned during the Board's discussions are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

The Board began by looking at the actions of the Biggin Hill Approach controller. The aircraft were both under a Basic Service and, as such, members acknowledged that the controller was not required to monitor the P68 once it had left the ATZ **(CF1)**. Although the Approach controller was aware of its general routing and performance criteria, controller members noted that he had made incorrect assumptions as to its probable flight path based on his expectation of its climb rate and a belief that the P68 would be level at 2400ft before turning on track. He incorrectly believed that this would separate the aircraft vertically and that the aircraft would not come into proximity with each other **(CF2)**. In actuality, the P68 pilot's instruction from the Tower controller was to turn left at 2nm, with no height restriction prior to commencing the turn included in the clearance. Controller members commented that in this respect it appeared that the liaison between the 2 controllers had been either incomplete or misunderstood, and that it had been the Approach controller's flawed mental model that had resulted in him not passing adequate Traffic Information to either pilot on the other aircraft in accordance with the Biggin Hill MATS Part 2 **(CF3)**. It was only when the Biggin Tower controller subsequently asked the Approach controller about the close proximity of the P68 to the PA28 joining the circuit that the Approach controller realised the aircraft had been closer than desirable to each other.

The Board then turned to the actions of the P68 pilot. Although it was difficult to determine from the radar screenshots, it appeared to the Board that the P68 pilot may have turned before 2nm and so this may have contributed to him being lower than would normally be expected as he routed NE. Notwithstanding, members noted that the P68 pilot had reported seeing the PA28 about 2-3nm away and, although he reduced his climb, GA members thought that given that it was his responsibility to give way to the PA28 on his right, he should have done more at that point to increase the separation between the aircraft rather than continuing towards the PA28 **(CF4)**. Members opined that it should never be assumed that the other pilot has seen you and will be content with reduced separation, and that although the P68 pilot knew the PA28 was on recovery to Biggin, he could not know that the PA28 pilot might not unknowingly and unexpectedly manoeuvre into conflict, especially given the absence of Traffic Information from Biggin **(CF5 & 7)**,

For his part, the PA28 pilot was descending to join the visual circuit and expected the P68 to climb to at least 2000ft before it crossed his track. Unfortunately, this was not what the P68 pilot had been cleared to do, and members thought that the lack of Traffic Information from the Biggin controller and the PA28 pilot's flawed mental model as to the P68's routing probably contributed to his relatively late sighting of the P68 **(CF6)**.

Turning to the risk, members agreed that the P68 pilot was visual with the PA28 early enough to stop his climb and, although he came closer than was desirable to the extent that safety was degraded, the Board agreed that there had been no risk of collision. Accordingly, the Board assessed the risk as Category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTOR(S) AND RISK

Contributory Factor(s):

	2019131		
CF	**Factor**	**Description**	**Amplification**
	Ground Elements		
	• Situational Awareness and Action		
1	Contextual	• Situational Awareness and Sensory Events	Not required to monitor the aircraft under the agreed service
2	Human Factors	• Conflict Detection - Not Detected	
3	Human Factors	• Traffic Management Information Provision	Not provided, inaccurate, inadequate, or late
	Flight Elements		
	• Regulations, Processes, Procedures and Compliance		
4	Human Factors	• Flight Crew ATM Procedure Deviation	Regulations/procedures not complied with
	• Situational Awareness of the Conflicting Aircraft and Action		
5	Contextual	• Situational Awareness and Sensory Events	Generic, late, no or incorrect Situational Awareness
	• See and Avoid		
6	Human Factors	• Monitoring of Other Aircraft	Late-sighting by one or both pilots
7	Human Factors	• Lack of Action	Pilot flew close enough to cause the other pilot concern

Degree of Risk: C.

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:

Ground Elements:

Situational Awareness of the Confliction and Action were assessed as **ineffective** because the Biggin controller did not identify the conflict or pass Traffic Information to either pilot.

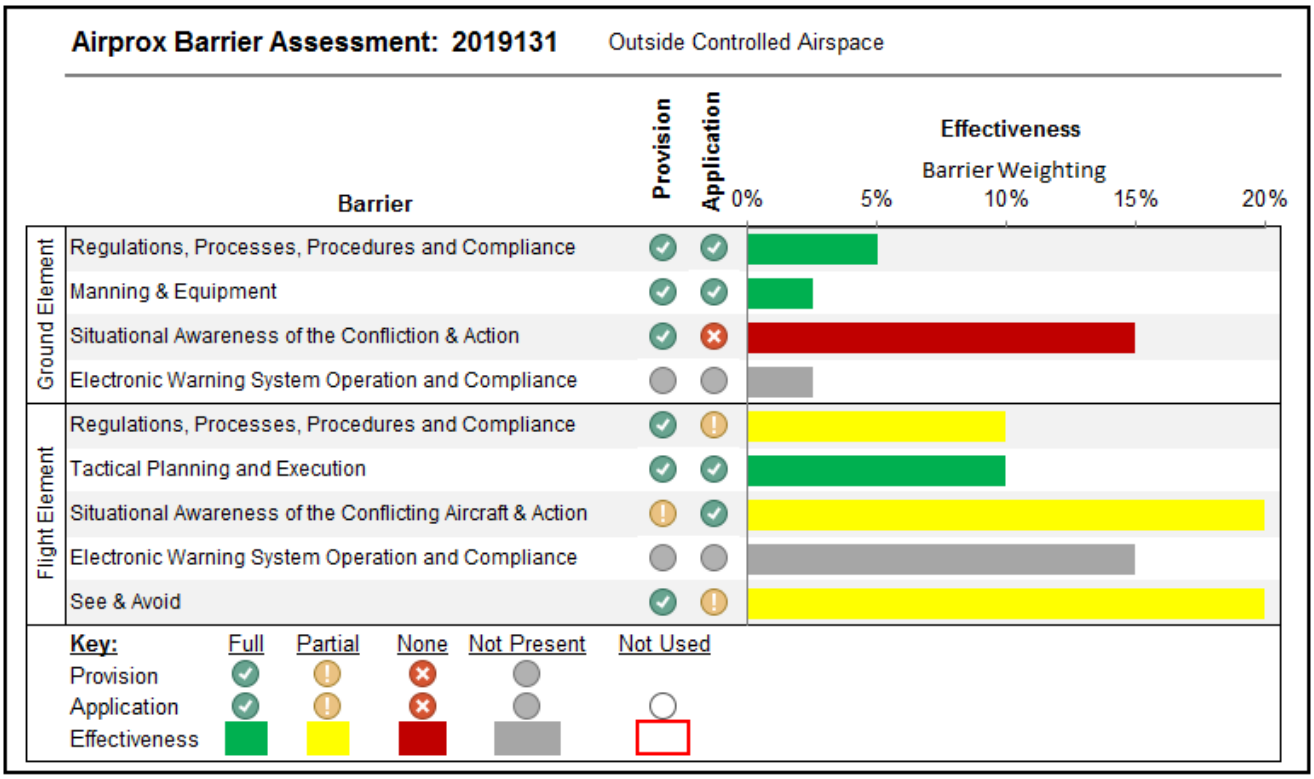
Flight Elements:

Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because the P68 pilot did not adequately alter his course to give way to the crossing PA28 in accordance with the Rules of the Air.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because both pilots had only generic information about each other from assimilating the R/T calls.

See and Avoid were assessed as **partially effective** because the P68 pilot saw the PA28 at 2-3nm but didn't act to increase the separation sufficiently.

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


Airprox Barrier Assessment: 2019131
Outside Controlled Airspace
Barrier
Provision
Application
Effectiveness
Barrier Weighting
0%
5%
10%
15%
20%
Ground Element
Regulations, Processes, Procedures and Compliance
Manning & Equipment
Situational Awareness of the Confliction & Action
Electronic Warning System Operation and Compliance
Flight Element
Regulations, Processes, Procedures and Compliance
Tactical Planning and Execution
Situational Awareness of the Conflicting Aircraft & Action
Electronic Warning System Operation and Compliance
See & Avoid
Key:
Full
Partial
None
Not Present
Not Used
Provision
Application
Effectiveness