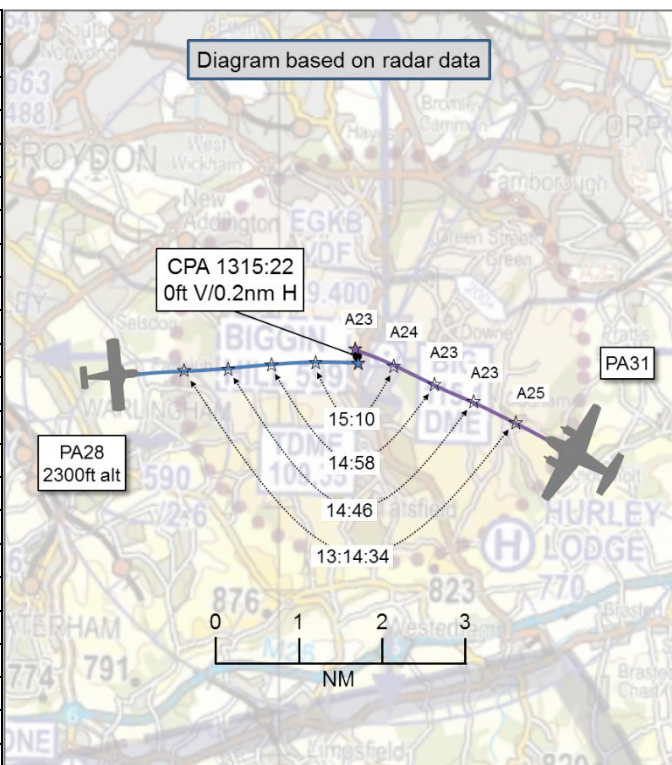


AIRPROX REPORT No 2019118

Date: 27 May 2019 Time: 1315Z Position: 5120N 00002E Location: Biggin Hill – elev 599ft

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	PA31
Operator	Civ FW	Civ FW
Airspace	Biggin Hill ATZ	Biggin Hill ATZ
Class	G	G
Rules	VFR	VFR
Service	Basic	Listening Out
Provider	Biggin Tower	Biggin Tower
Altitude/FL	2300ft	2300ft
Transponder	A, C, S	A, C, S
Reported		
Colours	White, blue	NK
Lighting	NK	NK
Conditions	VMC	VMC
Visibility	>10km	NK
Altitude/FL	2300ft	2400ft
Altimeter	QNH (1010hPa)	NK (NK hPa)
Heading	090°	Eastbound
Speed	130kt	~170kt
ACAS/TAS	Not fitted	TAS
Alert	N/A	Information
Separation		
Reported	0ft V/100m H	NK V/0.25nm H
Recorded	0ft V/0.2nm (370m) H	



THE PA28 PILOT reports that he was transiting the Biggin overhead, in receipt of a Basic Service from Biggin. He was aware of a PA31 also transiting in the vicinity, but had not made visual contact with the other aircraft. The other aircraft did not inform ATC that they had visual contact either, so he assumed that neither pilot saw the other. He saw the white- or silver-coloured PA31 only a second or so before they crossed, at the same level, only a few hundred feet apart. There was no time to take avoiding action and they passed each other without incident. The pilot noted that the westerly wind resulted in a relatively high groundspeed for his aircraft and that the PA31 would have a high groundspeed anyway, giving a high closing speed.

The pilot assessed the risk of collision as ‘Medium’.

THE PA31 PILOT declined to complete an Airprox reporting form. In a telephone conversation with an inspector he stated that he was VFR in VMC, tracking west-bound at 2400ft and in receipt of a Basic Service from Biggin Hill [UKAB note: in fact no service had been agreed]. They told him about traffic in the opposite direction at a similar level. He checked his TAS which indicated the traffic about a mile away. The Biggin frequency was very busy so he couldn’t call when in the Biggin overhead. Based on what he could see on the TAS he adjusted his course by jinking to the right, and then saw the other aircraft with plenty of distance between them. As they were adjacent, he saw the other aircraft suddenly bank away so he assumed they had only just seen him. He estimated they were about 0.25nm apart and there was no risk of collision. He did not consider it to be an Airprox at all.

The pilot assessed the risk of collision as ‘None’.

THE BIGGIN CONTROLLER did not submit a report.

Factual Background

The weather at Biggin Hill was recorded as follows:

METAR EGKB 271320Z 27013G23KT 230V310 9999 FEW045 17/07 Q1010=

Analysis and Investigation

CAA ATSI

Note: the time stamp was missing from the R/T recording obtained from Biggin Hill and, as such, the timings refer to the minute only, the seconds were not available.

At 13:05, the PA31 pilot called the Biggin Hill controller advising that they were en-route from [departure to destination], were estimating overhead Biggin Hill in about 10mins time and that they would like to pass east to west at 2400ft, VFR. The controller instructed the pilot to squawk 7047, established the current position of the aircraft as 5nm east of Tunbridge Wells and instructed the pilot to report 5 miles to run to the Biggin Hill overhead for onward clearance. The pilot responded "Roger". No ATC Service was agreed.

At 13:11, the PA28 pilot called the Biggin Hill controller advising that they were en-route from [departure to destination], were 10 miles west of Biggin Hill, requested a Basic Service and to transit through the Biggin Hill ATZ at 2300ft on QNH1010. A Basic Service was agreed, the pilot was instructed to squawk 7047 and report 5 miles to run to the overhead for onward clearance. A warning was passed that Kenley Gliding Site may be active, and the controller asked the pilot to confirm their level. The pilot responded with 2300ft QNH1010 and that they would report 5 miles to run.

At 13:12, the PA31 pilot reported "6 miles to run traffic in sight" and the controller instructed the pilot to report overhead Biggin Hill not below 2000ft. The pilot provided an accurate readback (Figure 1). [UKAB Note: the PA31 was at a range of 6 NM from Biggin Hill at 13:12:58, at which point the PA 28 was in excess of 5nm west of Biggin Hill. Although the lack of a report from the PA31 pilot means that it was not possible to be certain, it seems likely that the 'traffic' that the PA31 pilot reported as being 'in sight' was in fact the 7047 squawk at A18 about 2-3nm ahead and not the subject PA28.]

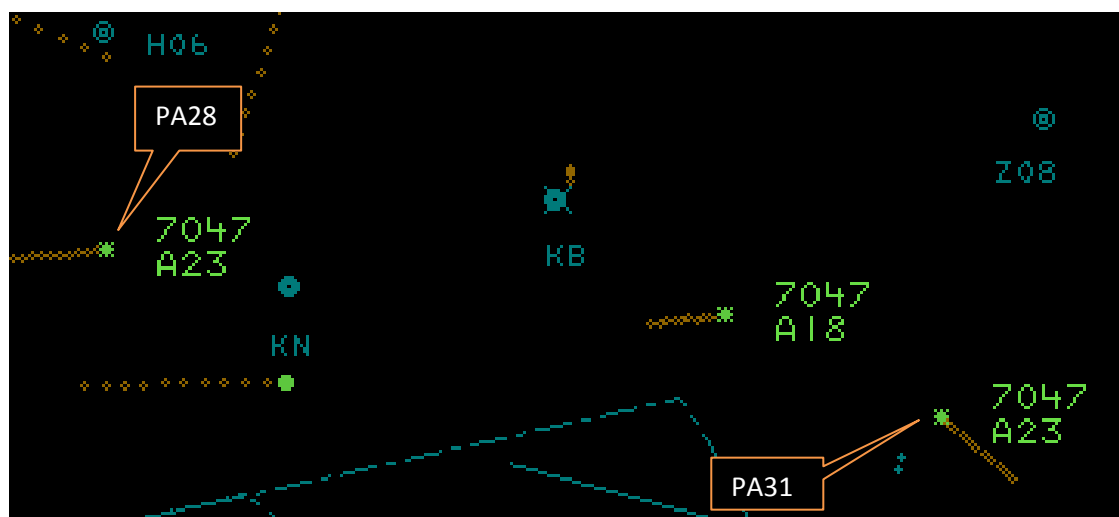


Figure 1 - 13:12

At 13:13, the PA28 pilot reported 5 miles to run, visual with the airport [UKAB Note: the PA28 was at a range of 5nm from Biggin Hill at 13:13:30]. The controller instructed the pilot to report overhead not below 2000ft and passed Traffic Information on the PA31, described as opposite direction, joining the overhead from the southeast but which did not include altitude information on the PA31. The PA28 pilot responded that they would report overhead not below 2000ft but did not acknowledge the Traffic Information. The controller then passed Traffic Information on the PA28 to the PA31 pilot,

described as a Cherokee 5 miles to the west of the field, 2300 ft, opposite direction through the overhead. The pilot responded with “copied” (Figure 2).

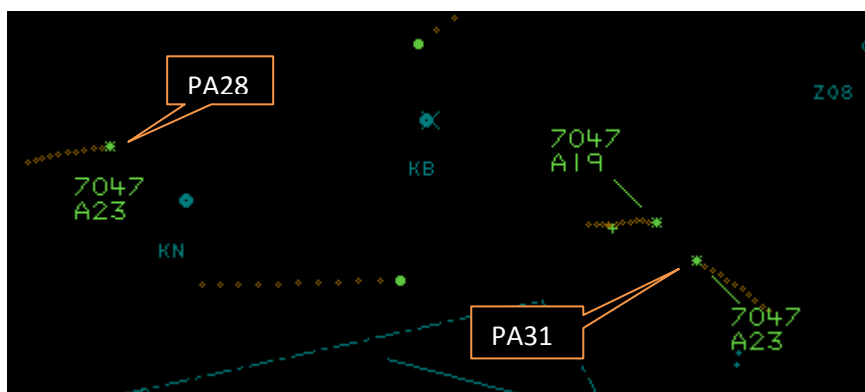


Figure 2 - 13:13

At 13:15, the PA28 pilot reported overhead and was instructed to report abeam Swanley. The controller turned their attention to an unrelated Cherokee requesting to join the circuit and a lengthy R/T exchange ensued. The controller then advised the PA31 pilot that they saw them pass through the overhead and instructed the pilot to report passing abeam the Gliding Site at Kenley and cautioned them that it may be active. Traffic Information was passed to the PA31 pilot on the unrelated Cherokee joining from the west and the PA31 pilot apologised and advised the controller that they hadn't managed to get their overhead call in due to the lengthy R/T exchange from the unrelated Cherokee and that they were now passing Kenley.

CPA occurred at 13:15.22 with the aircraft separated by 0.2nm laterally and 0ft vertically (Figure 3).

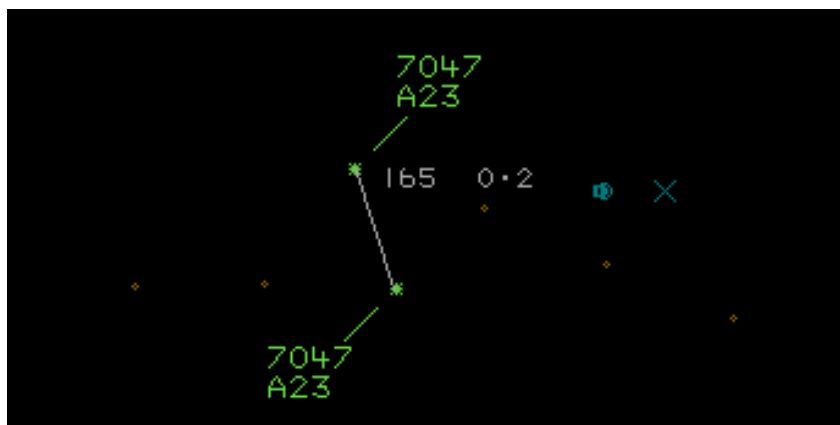


Figure 3 - 13:15.22 CPA

When the PA28 pilot reported 5 miles to the west of the overhead at 13:13, the Biggin Hill controller passed Traffic Information to the pilot on the opposite direction PA31 from the southeast. However, the Traffic Information did not include altitude information. The PA28 pilot did not acknowledge the Traffic Information but stated in their report that they were aware of the PA31 “being in the vicinity”. The pilot may not have assimilated that it was opposite direction and would also not necessarily have been aware that the PA31 was at the same level. Traffic information was also passed to the PA31 pilot at 13:13, and in this case, the altitude of the PA28 was included in this transmission as well as information on the PA28 being opposite direction.

It may have been useful to the PA28 pilot for the last known level of the PA31 had been included within the Traffic Information provided. That said, the standard clearance issued to both pilots was to report overhead not below 2000 ft, maintaining VFR. Under the terms of a Basic Service, unless the pilot has entered into an agreement with the controller to maintain a specific course of action the pilot may change level, heading or route at any time without advising the controller. In Class G Airspace under a Basic Service the pilots remain responsible for their own collision avoidance.

UKAB Secretariat

The PA28 and PA31 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard¹. If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right². If the incident geometry is considered as converging then the PA28 pilot was required to give way to the PA31³.

Summary

An Airprox was reported when a PA28 and a PA31 flew into proximity at 1315hrs on Monday 27th May 2019 near the Biggin Hill overhead. Both pilots were operating under VFR in VMC, the PA28 pilot in receipt of a Basic Service from Biggin Hill and the PA31 pilot without an agreed service but effectively in receipt of a Basic Service, also from Biggin Hill.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of a report from the PA28 pilot and telephone call with the PA31 pilot, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate operating authorities. 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.

Members first discussed the pilots' actions and noted that although the PA31 pilot was operating in the belief that he was in receipt of a Basic Service when no service had been agreed (**CF3**), he was still receiving useful Traffic Information as he approached Biggin Hill. Each pilot had contacted the Biggin controller and been cleared to transit the ATZ not below altitude 2000ft (1400ft aal), with the PA28 transiting east to west and the PA31 west to east. Whilst this ensured that transiting traffic remained clear of visual circuit traffic it also confined the opposite-direction aircraft to being overhead with only a 500ft altitude band between the minimum cleared level and the base of the London TMA (at altitude 2500ft). Given this situation, some members wondered whether the Biggin controller might have suggested some form of geographic lateral or vertical separation to the pilots, although they acknowledged that it was not for him to do so given the nature of the service they were receiving.

Assuming that the PA31 pilot accurately reported when 6 miles to run, he would have done so at about 1313. Similarly, if the PA28 pilot accurately reported 5 miles to run he would have done so about 30secs later. Members therefore wondered to what degree each pilot had assimilated the Biggin controller's information to the other. Both had been cleared to transit the Biggin overhead not below altitude 2000ft, and both had reported being at about the same range to go to the overhead at about the same time. Members felt that this in itself was sufficient information to pique the interest of an inquisitive pilot, perhaps to prompt a request for further Traffic Information or to establish relative altitudes (**CF4**, **CF5**).

Given that the controller passed Traffic Information to the PA31 pilot which included the PA28's altitude, members felt that it would not have been unreasonable for the PA31 pilot to change his altitude from 2300ft on the basis of defensive flying if nothing else (**CF2**). Furthermore, the PA31 pilot reported that he had seen the PA28 on his TAS (**CF7**) and taken action as a result, although members noted that he flew to a point 0.2nm from the PA28 at the same level. Angle of arrival information from TAS equipment is notoriously unreliable and GA members cautioned that pilots should be wary of trusting such information to generate lateral separation. Ultimately, the PA31 pilot saw the PA28 and, although he was clearly comfortable with the resulting separation, the Board felt it was unnecessarily close given his SA (**CF6**) and that in consideration for the other pilot (who might not have the same risk appetite) he could have generated greater separation.

For his part, the PA28 pilot was in possession of much more limited SA and only saw the PA31 at a late stage (**CF8**). That being said, he was aware of the PA31 approaching Biggin from the SE, and would

¹ SERA.3205 Proximity.

² SERA.3210 Right-of-way (c)(1) Approaching head-on.

³ SERA.3210 Right-of-way (c)(2) Converging.

equally be aware of the limited height band available as they both converged. As such, although the R/T was reportedly busy, there were likely opportunities for him to seek further information, which he did not take.

Turning to the Biggin controller's actions, given that he had directed both pilots to the overhead and that the radar display indicated both aircraft were at the same level, he had a responsibility to pass sufficient information to enable the pilots to conduct their flight safely within the ATZ. Members felt that he had not done so; ironically, the PA31 pilot, not in receipt of an agreed FIS, received more Traffic Information than the PA28 pilot, under a Basic Service. Crucially, the Biggin controller did not pass Traffic Information to the PA28 pilot which included the PA31's altitude (**CF1**).

In summary, although the PA31 pilot felt there was no conflict (**CF9**) the PA28 pilot felt that safety may have been compromised and had submitted an Airprox; the Board agreed with the PA28 pilot's assessment. Overall, members felt that everyone involved could have done more to avoid the situation: the PA31 pilot could not have known the planned track and intentions of the PA28 and had had sufficient SA to afford greater vertical separation at least; the PA28 pilot could have sought further information about the PA31; and the controller could have been more proactive in providing more complete traffic information and ensuring safe and efficient flight within the ATZ. In the event, the PA31 pilot was visual with the PA28 and members surmised that collision would not have occurred. That being said, with the PA28 pilot's intention unknown to the PA31 pilot, and with the PA28 pilot not being visual with the PA31 until the last moment, they assessed that safety had been reduced.

PART C: ASSESSMENT OF CAUSE AND RISK

Contributory Factors:

2019118			
CF	Factor	Description	Amplification
Ground Elements			
• Situational Awareness and Action			
1	Human Factors	• Traffic Management Information Provision	Not provided, inaccurate, inadequate, or late
Flight Elements			
• Tactical Planning and Execution			
2	Human Factors	• Insufficient Decision/Plan	Inadequate plan adaption
3	Human Factors	• Communications by Flight Crew with ANS	Appropriate ATS not requested by pilot
• Situational Awareness of the Conflicting Aircraft and Action			
4	Human Factors	• Understanding/Comprehension	Pilot did not assimilate conflict information
5	Human Factors	• Lack of Communication	Pilot did not request additional information
6	Human Factors	• Lack of Action	Pilot flew close enough to cause concern despite Situational Awareness
• Electronic Warning System Operation and Compliance			
7	Contextual	• ACAS/TCAS TA	TCAS TA / CWS indication
• See and Avoid			
8	Human Factors	• Monitoring of Other Aircraft	Late-sighting by one or both pilots
9	Human Factors	• Perception of Visual Information	Pilot perceived there was no conflict

Degree of Risk: C.

Recommendation: Nil.

Safety Barrier Assessment⁴

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 **partially effective** because although the Biggin controller had directed both aircraft to the Biggin Hill overhead and was aware they were at about the same level, he did not provide full Traffic Information to both pilots.

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because neither pilot modified their plan once aware of the other aircraft also approaching the overhead at a similar range (and height in respect of the PA31 pilot).

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the PA28 pilot did not query the PA31 altitude with Biggin but the PA31 was equipped with a TAS, which allowed its pilot to take action.

		Barrier		Effectiveness Barrier Weighting					
		Provision	Application	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									

⁴ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).