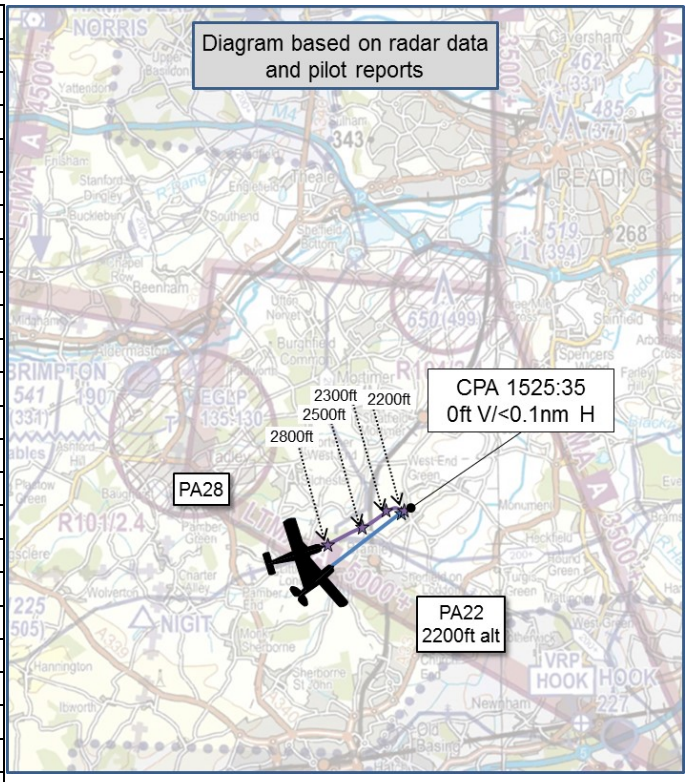
AIRPROX REPORT No 2019217

Date: 02 Aug 2019 Time: 1525Z Position: 5120N 00102W Location: 5nm SW Reading

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA22	PA28
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Listening Out[1]
Provider	Farnborough	Farnborough
Altitude/FL	2100ft	↓2100ft
Transponder	A, C, S	A, C
Reported		
Colours	White, Blue	Blue, White
Lighting	Not reported	Not reported
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2000ft	General handling
Altimeter	QNH (1020hPa)	QNH
Heading	053°	Not reported
Speed	90kt	70kt
ACAS/TAS	PilotAware	Not reported
Alert	None	N/A
Separation		
Reported	50ft V/50m H	Not seen
Recorded	0ft V/<0.1nm H	



THE PA22 PILOT reports that he was in the cruise at 2000ft. The other aircraft was travelling faster and overtook him slightly to the left. It had been in his blind spot, high-wing on the PA22, and was first seen by the passenger, also a pilot, as it appeared in front of the wing at about 20m. He took immediate action by descending and turning to the right. The other aircraft did not appear to see him.

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

THE PA28 PILOT reports that he was conducting a training flight with a student. He recalls that the climbing and descending exercises were conducted between NE and SW headings between 2000ft and 3500ft, to the base of the cloud. This was to stay clear of the LTMA which lowers from Reading eastwards. Although he doesn't recall seeing the PA22, he does recall being aware of, and monitoring other aircraft including gliders which were operating below the base of the cloud, about 3500ft. Although he didn't obtain a squawk code from Farnborough Radar, he recalls using the 4572 listening squawk which is his SOP. The lessons do require quite high nose attitudes where lookout to the front is challenging, he recalls demonstrating the two ways to check ahead, i.e. lowering the nose and weaving. He also applies the work cycle DABLE (Direction, Airspeed, Balance, lookout and engine).

THE FARNBOROUGH CONTROLLER reports that he was the LARS West controller and the frequency was reasonably busy. The FIR was very busy due to good weather, a Lasham gliding competition and it being a Friday afternoon in the summer. He was using the Pease Pottage SSR which has lesser low level SSR coverage to the north west of Farnborough. The PA22 pilot called on frequency requesting a Basic Service. The controller asked the PA22 pilot to squawk 0435, passed the Farnborough QNH, confirmed it was a Basic Service, and subsequently identified him. He then called a different aircraft because its transponder was not showing on radar and continued to talk to other

[1] The pilot reported listening out on the Farnborough frequency, he later communicated to a Board member that he had been waiting for a gap in transmissions to establish contact with Farnborough.

aircraft. The radar recording shows the label of the PA22 was garbling, and at times stopped garbling and just showed 0435. This sometimes occurs when you get a double radar return but was possibly another aircraft squawking 4572. For a long period, it's not obvious there is another aircraft there, but at this time he was looking elsewhere on the radar and talking to Approach about inbound traffic. He then gave a proximity warning to another aircraft near CPT as he had seen there was converging traffic on its left. Shortly afterwards, the PA22 pilot stated on the frequency that he wanted to file an Airprox. He asked him for the details. The controller asked if that was the aircraft that he gave the warning on, but the PA22 pilot wasn't sure. In fact, the warning he had given was to the other aircraft near CPT, not the PA22 pilot. He informed the pilot that he would file the appropriate paperwork.

Factual Background

The weather at Farnborough was recorded as follows:

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METAR EGLF 021520Z 32004KT 260V010 9999 SCT043 24/13 Q1019
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Analysis and Investigation

Investigation Report

Farnborough did not provide an Investigation Report due to the ongoing investigation workload of the unit.

UKAB Secretariat

The PA22 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[2]. If the incident geometry is considered as overtaking then the PA22 pilot had right of way and the PA28 pilot was required to keep out of the way of the other aircraft by altering course to the right[3].

Summary

An Airprox was reported when a PA22 and a PA28 flew into proximity near Reading at 1525hrs on Friday 2nd of August 2019. Both pilots were operating under VFR in VMC, the PA22 pilot in receipt of a Basic Service from Farnborough and the PA28 pilot listening out on Farnborough's frequency.

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 discussing the actions of the Farnborough controller. Although the PA22 pilot had been in receipt of a Basic Service, the controller had been involved in tasks relating to higher priority traffic and had not monitored the flight of the PA22, nor was he required to do so. A Basic Service relies on the pilot avoiding other traffic unaided by controllers/ FISOs. Unlike a Traffic Service or Deconfliction Service, the provider of a Basic Service is not required to monitor the flight **(CF1)**.

Turning to the actions of the PA22 pilot, members noted that his PilotAware did not alert as it was expected to do **(CF4)**, and it was thought that this was perhaps a result of aerial blanking if the PA28 was slightly above the PA22 where its high-wing might blank the antenna. Members also agreed that the high-wing configuration of the PA22 probably also obscured the PA28 as it passed by from above and behind the aircraft **(CF5)**. Members noted that the PA22 pilot had only seen the PA28 as it

[2] SERA.3205 Proximity.
[3] SERA.3210 Right-of-way (c)(3) Overtaking.

descended and pulled ahead slightly to his left, and by the time he had reacted (by descending and turning right), it was already probably past CPA and so the PA22 pilot's avoiding action probably had no material effect on the separation at CPA **(CF6)**.

The Board then turned to the actions of the PA28 pilot. He was above the PA22 as he descended, and members agreed that the PA22 was probably obscured due to the low-wing configuration of the PA28 **(CF5)** which is likely why he did not see the PA22 at all. The PA28 pilot reported that he had been 'Listening out' on the Farnborough frequency [UKAB note: the PA28 pilot subsequently said that he listens out on the Farnborough frequency when VMC to avoid placing unnecessary demands on the busy LARS environment]. GA members with instructional experience understood the reasons for only listening out but thought that, on balance in this busy part of airspace, he would have been better served by seeking at least a Basic Service, which would have provided more information to other airspace users **(CP3)**. That being said, a GA member had been informed that the PA22 pilot had subsequently commented about having to wait for a gap in transmissions before establishing a service with Farnborough and this demonstrated how busy the frequency was at the time. On balance, the Board reiterated the paucity of situational awareness that pilots would receive (and provide) when just listening out, and members urged pilots only to do so when circumstances conspired against seeking even just a Basic Service **(CF2)**.

Turning to the risk, members agreed that the PA22 pilot didn't see the other aircraft until after CPA and the PA28 pilot didn't see the PA22 at all. Allied to the fact that neither pilot had any information on the other aircraft to increase their situational awareness; that the PA22 pilot had reported a separation of only 20m; and that the radar derived separation was 0ft vertically and <0.1nm horizontally, the Board agreed that there had been a serious risk of collision that had only been prevented by providence: Risk Category A.

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

Contributory Factor(s):

	2019217		
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
	Flight Elements		
	• Tactical Planning and Execution		
2	Human Factors	• Communications by Flight Crew with ANS	Appropriate ATS not requested by pilot
	• Situational Awareness of the Conflicting Aircraft and Action		
3	Contextual	• Situational Awareness and Sensory Events	Generic, late, no or incorrect Situational Awareness
	• Electronic Warning System Operation and Compliance		
4	Technical	• ACAS/TCAS System Failure	CWS did not alert as expected
	• See and Avoid		
5	Contextual	• Poor Visibility Encounter	One or both aircraft were obscured from the other
6	Human Factors	• Monitoring of Other Aircraft	Non-sighting or effectively a non-sighting by one or both pilots

Degree of Risk: A.

Safety Barrier Assessment[4]

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 **not used** because the PA22 pilot was receiving a Basic Service and therefore the controller was not required to monitor the aircraft, the controller was also engaged in higher priority tasks.

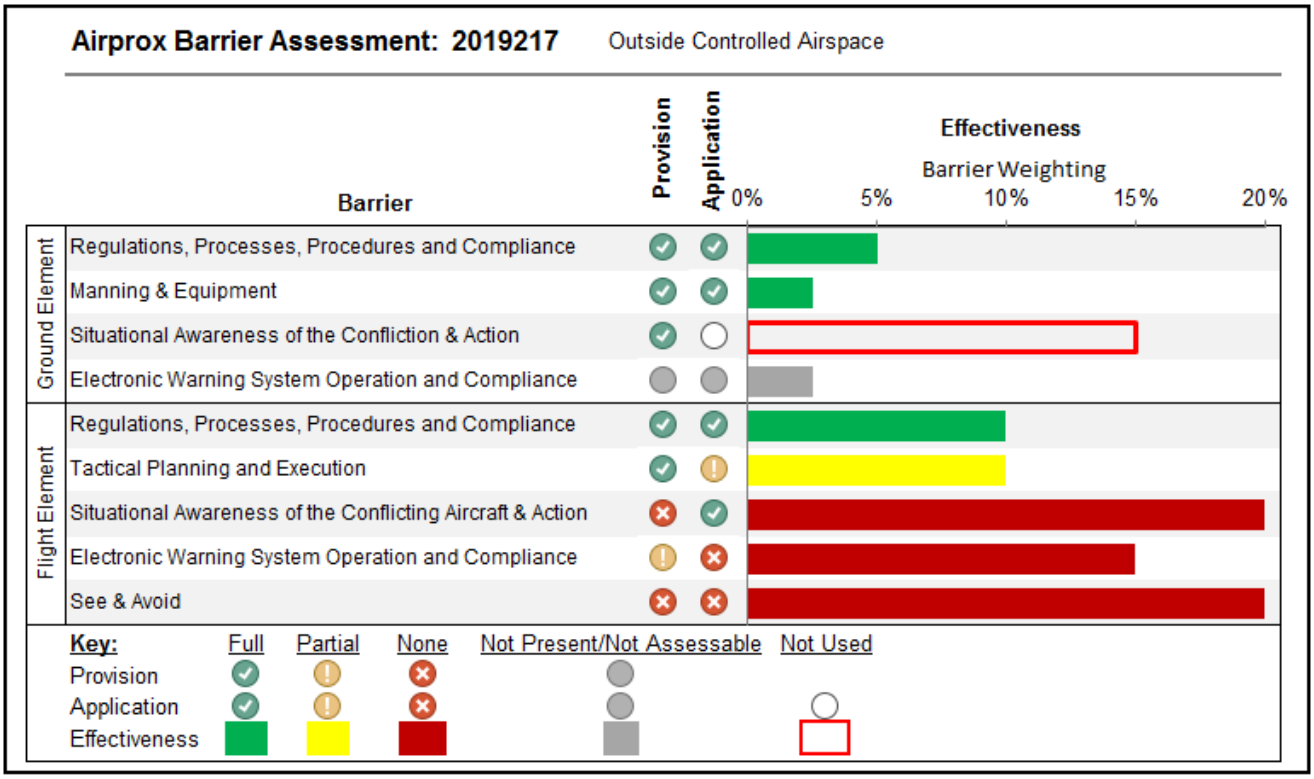
Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the PA22 pilot could have requested a Traffic Service with Farnborough which would have provided a greater level of information on the location of conflicting aircraft.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither pilot had any information on the other aircraft.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the PA22's PilotAware did not alert as expected.

See and Avoid were assessed as **ineffective** because the PA22 pilot only saw the PA28 after CPA and the PA28 pilot did not see the PA22 at all.



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