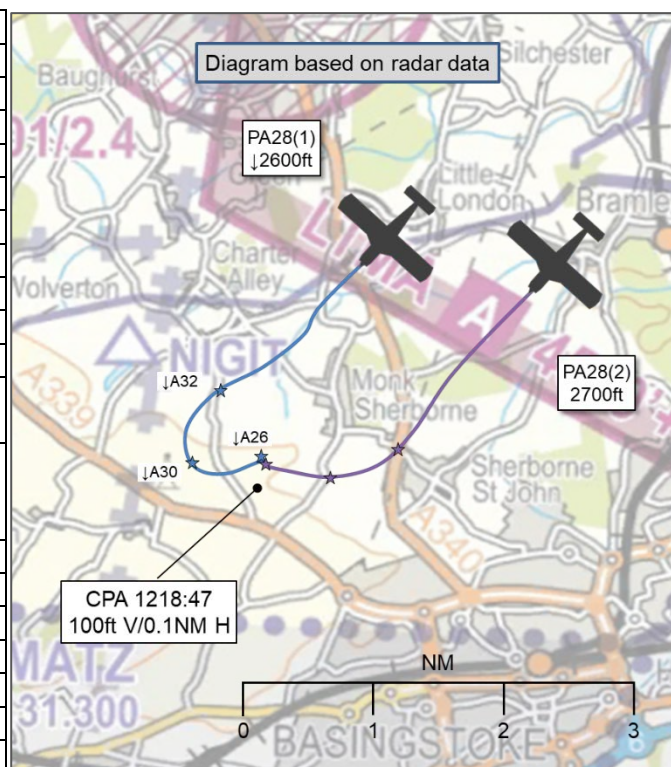


AIRPROX REPORT No 2021128

Date: 22 Jul 2021 Time: 1218Z Position: 5117N 00108W Location: 2NM N Basingstoke

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28(1)	PA28(2)
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Listening Out
Provider	Farnborough	Farnborough
Altitude/FL	2600ft	2700ft
Transponder	A, C, S	A, C, S
Reported		
Colours	White, Yellow, Red	Blue, White
Lighting	Nav, Landing, Strobes	Landing, Taxi, Anti-cols, Strobes, Beacon
Conditions	VMC	VMC
Visibility	>10km	NR
Altitude/FL	2600ft	2600ft
Altimeter	QNH (1023hPa)	QNH (1023hPa)
Heading	060°	275°
Speed	120kt	105kt
ACAS/TAS	Not fitted	TAS
Alert	N/A	Unknown
Separation		
Reported	50ft V/20m H	50ft V/400m H
Recorded	100ft V/0.1NM H	



THE PA28(1) PILOT reports that they were conducting an IF instructional flight prior to IRR re-test. This flight was working on confidence building, practise climb, turn, descend, level-off using power and the aircraft's inherent stability with accurate trimming to allow the pilot to relax and full and limited panel unusual attitude (UA) recoveries with some remedial work. The student was wearing a visor. After a series of nose-high, limited panel, UA recoveries, the instructor paused instruction to make a thorough lookout scan and turn left from an easterly heading to westerly. As they looked from left to right they saw a blue and white PA28 low in the right corner of the windscreen on a reciprocal heading. Despite being in very close proximity, it was immediately apparent that they were not on converging vectors and the PA28 passed below and to the right. The PA28 looked like one of the aircraft from their flying school. They confirmed its registration with Farnborough radar and discussed the incident with the other pilot after landing. On the basis that the other pilot took effective avoiding action, the instructor reduced their assessment of risk from high to medium. Contributing factors include the necessity to look in the cockpit to instruct IF, detracting from lookout under the best of circumstances. The pilot opined that Traffic Service was not requested because every change of heading and level is required to be notified beforehand, which is not compatible with the dynamic manoeuvring of UAs and in their experience Farnborough will not provide a Traffic Service in a block.

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

THE PA28(2) PILOT reports that they were flying straight and level, pointing out ground features to the student. They were listening out on the Farnborough frequency, because the frequency was too busy to request a Basic Service. They saw the other PA28 co-alt and took avoiding action by pressing forward on the control column.

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

THE FARNBOROUGH CONTROLLER reports that LARS West was split from Approach and Zone. It was medium to high workload including providing Traffic Services. PA28(1) pilot, under a Basic Service, asked whether they knew the callsign of the aircraft on their left as they may have had an Airprox. The controller scanned the radar to find PA28(1) and noticed 2 aircraft in their vicinity indicating the same level so passed Traffic Information. The pilot confirmed that they had had an Airprox with the aircraft on their left about a minute earlier, reciprocal track, same altitude, north of Basingstoke. The controller advised the pilot that they would report the event and the pilot said that the other aircraft was a company aircraft.

Factual Background

The weather at Farnborough was recorded as follows:

METAR EGLF 221150Z AUTO 06006KT 010V120 9999 FEW043/// 26/16 Q1023=

Analysis and Investigation

NATS Farnborough Investigation

PA28(1) was on a Basic Service with Farnborough LARS West, operating in the NIGIT area. The LARS West frequency was busy, with medium to high workload including Traffic Services. PA28(1) was squawking 0441 (see Figure 1, screenshot taken from the Farnborough radar, PA28(1) circled in red).

At 1218:04 PA28(1) was at 3400ft, tracking 260°. The other aircraft [PA28(2) C/S], wearing a 4572 squawk, was on a similar track, 1.5NM east indicating 2600ft.



Figure 1: 1218:04

At 1218:11 the LARS West controller called traffic to another aircraft on their frequency and at 1218:33 (Figure 2) that pilot replied that they were visual. At this point PA28(1) made a hard left turn and descended to 2700ft, putting it exactly opposite direction of the 4572 traffic (PA28(2)), at the same level.



Figure 2: 1218:33

On the radar it appeared that the two aircraft passed each other, down their left-hand-sides, at the same level. The Airprox happened at 1218:42. The controller did not see this as they were concentrating on the traffic that was operating in the Guilford area, highlighted in blue at Figure 3 (0436 squawk).



Figure 3: 1218:42

The aircraft were clear of conflict at 1218:59 (Figure 4).



Figure 4: 1218:59 CPA

The following is the transcript of the conversation after the Airprox had happened. There was a gap of about 30 seconds between the incident and the PA28(1) pilot reporting it, by which time the positions of the aircraft involved had changed and another aircraft was converging on PA28(1) from the north.

12:19:11 (PA28(1) C/S) – [C/S] request
 12:19:14 (LARS West) – [C/S] pass your message
 12:19:16 (PA28(1) C/S) - About two miles south of Aldermaston can you give me the callsign of the aircraft in my left ten o'clock please I think we just had an Airprox
 12:19:34 (LARS West) – [C/S] er aircraft crossing right to left converging indicating one hundred feet and aircraft on your left similar track indicating two thousand six hundred feet one on the left [PA28(2) C/S]
 12:19:48 (PA28(1) C/S) – that's copied and that's an Airprox [C/S]
 12:19:54 (LARS West) – [C/S] roger er caution traffic on both sides and when ready pass full details and I can file from here
 12:20:01 (PA28(1) C/S) – Sorry stood on you there that wasn't the Airprox, the Airprox was about a minute and half ago er we were reciprocal at the same altitude just north of Basingstoke
 12:20:18 (PA28(1)) – it's er [PA28(2) C/S] a company aircraft I'll speak to him when I get back
 12:20:23 (LARS West) – [PA28(1) C/S] roger

The controller's workload was medium to high including working traffic services. LARS West was split from Approach and Zone. The controller's scanning priorities were in the Guildford area due to giving another aircraft Traffic Information in the moments prior to the Airprox. From the previous transmission involving Traffic Information, this would have given the controller 9 seconds (2 or 3 sweeps of the radar) to see the hard turn and descent of [PA28(1) C/S]. The controller was not aware of the Airprox until it was reported by the PA28(1) pilot. Then the LARS West controller had to scan the radar to find both aircraft by Mode S callsign and saw two aircraft in the vicinity indicating the same level. The controller advised the pilot a report would be filed.

PA28(1) was in receipt of a Basic Service from Farnborough Radar. CAP493 MATS Part 1 Section 1 Chapter 12 Para 2E.1 notes that:

Given 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 controller report and radar replay of the events shows that traffic levels were quite high, and the controller was busy carrying out a visual scan on the radar of another aircraft as the Airprox occurs and hence did not see the conflict between the two PA28s.

UKAB Secretariat

The PA28(1) and PA28(2) 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 head-on or nearly so then both pilots were required to turn to the right.²

Summary

An Airprox was reported when two PA28s flew into proximity 2NM north of Basingstoke at 1218Z on Thursday 22nd July 2021. Both pilots were operating under VFR in VMC, the PA28(1) pilot in receipt of a Basic Service from Farnborough and the PA28(2) pilot was not in receipt of an ATS.

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 controllers 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 first considered the actions of the PA28(1) pilot. They were conducting an instructional sortie teaching UA recoveries, operating in Class G airspace and receiving a Basic Service from Farnborough LARS West. The pilot reported that a Traffic Service was not practicable when manoeuvring and they believed that Farnborough would not offer a Traffic Service when operating in a block. Some members were surprised by this, citing that they frequently received such a service from other ATSUs, but other members agreed with the pilot's opinion in that anecdotally they had heard pilots complain that Farnborough were reluctant to offer a Traffic Service to manoeuvring aircraft. There followed a discussion whereby members opined that pilots should ask for the type of service they required and then submit a CAA form FCS 1522³ if that service was refused; without such submissions it was impossible for the CAA to keep statistics on the performance of ATSUs and such statistics were used when considering airspace change proposals. Although members were sympathetic to the view that pilots simply became worn down asking for, and being refused, a radar service, still they advocated using the form, noting that otherwise nothing would change. Returning to the Airprox, under a Basic Service the controller was not required to monitor the PA28(1) and so did not provide Traffic Information, and without a CWS either, the pilot did not have any situational awareness that the other aircraft was nearby (**CF3**). Members noted that it was important to conduct a thorough look-out prior to turning and it was whilst doing so that the pilot spotted the other PA28 in proximity. However, by the time they saw it, it was too late to take any action that would materially increase the separation, making this effectively a non-sighting by the PA28(1) pilot (**CF5**).

PA28(2) pilot reported not requesting an ATS at all because the Farnborough frequency was too busy and so was listening-out on the frequency. However, on this occasion listening-out did not provide the pilot with any situational awareness about the other aircraft (**CF3**). The pilot reported seeing the other PA28 co-altitude and took action 'by pressing forward on the control column', which members considered to be a late sighting (**CF4**). Noting that both pilots came from the same training school, some members wondered whether they could have liaised prior to getting airborne to avoid operating in the same area. However, those with experience of flying in the area explained that the constraints of the controlled airspace in the vicinity meant that the area around Basingstoke was one of very few places where aircraft were able to manoeuvre freely.

Turning to the role of the Farnborough controller, members noted that they were obviously busy and that the NATS investigation found that the controller was looking at an aircraft receiving a Traffic Service in the Guilford area at around the time of the Airprox. Furthermore, the controller was not required to monitor PA28(1) under the terms of a Basic Service and the controller simply did not see the conflict

¹ (UK) SERA.3205 Proximity.

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

³ CAA Form FCS 1522 available on the CAA website [FCS 1522](#)

occur (**CF1**). Although Farnborough Lars West is equipped with an STCA, to prevent it constantly alerting unnecessarily, it was not configured to alert on VFR squawks at this level (**CF2**).

When assessing the risk the Board considered the reports by both pilots together with the NATS radar data. It was noted that although both pilots reported that PA28(1) was above PA28(2), the radar indicated that it was the other way around. This was probably due to both aircraft being at the limits of the SSR tolerances and implied that there was less than 100ft separation, which was backed-up by both pilot reports. Some members thought that the separation together with the nature of the late and non-sighting by both pilots meant that there had been a risk of collision. Others noted that the PA28(1) pilot stated that the aircraft were not on converging vectors and that the pilots themselves assessed the risk of collision as 'low' and 'medium'. After a short discussion the Board agreed that although safety had been degraded, there had been no risk of collision; Risk Category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2021128			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Ground Elements				
• Situational Awareness and Action				
1	Contextual	• ANS Flight Information Provision	Provision of ANS flight information	The ATCO/FISO was not required to monitor the flight under a Basic Service
• Electronic Warning System Operation and Compliance				
2	Technical	• Conflict Alert System Failure	Conflict Alert System did not function as expected	The Conflict Alert system did not function or was not utilised in this situation
Flight Elements				
• Situational Awareness of the Conflicting Aircraft and Action				
3	Contextual	• Situational Awareness and Sensory Events	Events involving a flight crew's awareness and perception of situations	Pilot had no, late or only generic, Situational Awareness
• See and Avoid				
4	Human Factors	• Identification/Recognition	Events involving flight crew not fully identifying or recognising the reality of a situation	Late sighting by one or both pilots
5	Human Factors	• Monitoring of Other Aircraft	Events involving flight crew not fully monitoring another aircraft	Non-sighting or effectively a non-sighting by one or both pilots

Degree of Risk: C.

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:

Situational Awareness of the Confliction and Action were assessed as **not used** because the Farnborough controller was not required to monitor the Basic Service.

Electronic Warning System Operation and Compliance were assessed as **not used** because the STCA for Farnborough LARS West is not configured to be used on VFR squawks.

Flight Elements:

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

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither pilot had any situational awareness that the other was there.

See and Avoid were assessed as **partially effective** because although it was a late sighting by PA28(2) pilot, they managed to take some action.

Airprox Barrier Assessment: 2021128		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 Assessable	Not Used
Provision	✓	!	✗	○			
Application	✓	!	✗	○		○	
Effectiveness							