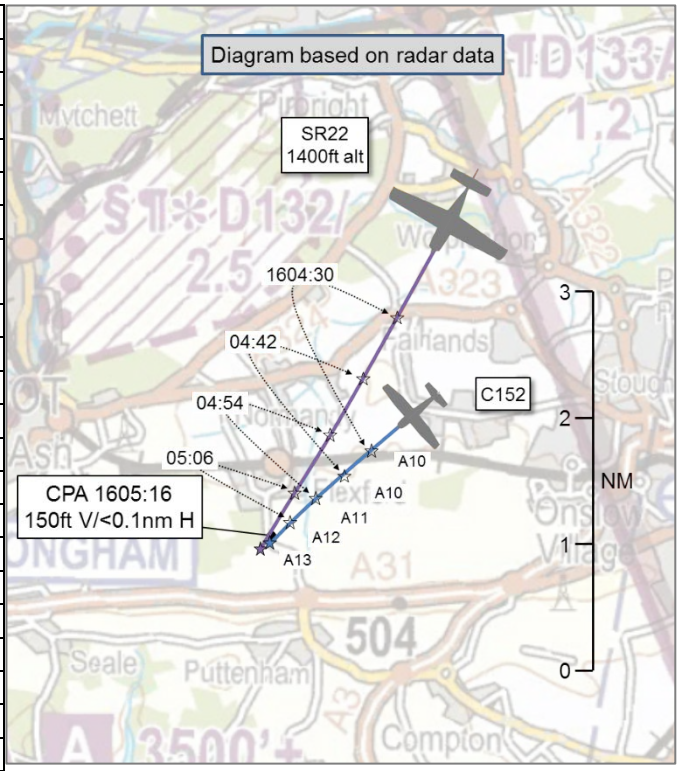
AIRPROX REPORT No 2019184

Date: 05 Jul 2019 Time: 1605Z Position: 5114N 00040W Location: 2nm W Guildford

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	C152	SR22
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Basic
Provider	Farnborough LARS W	Farnborough LARS W
Altitude/FL	1200ft	1400ft
Transponder	A/C	A/C/S
Reported		
Colours	Mainly white	Silver/red
Lighting	Nav, tail beacon	Strobe
Conditions	VMC	VMC
Visibility	>10km	10km
Altitude/FL	1400ft	1400ft
Altimeter	QNH (1017hPa)	QNH
Heading	225°	~240°
Speed	80kt	155kt
ACAS/TAS	Not fitted	TAS
Alert	N/A	Information
Separation		
Reported	0ft V/30m H	200ft V/300ft H
Recorded	150ft V/<0.1nm H	



THE CESSNA 152 PILOT reports that shortly after taking off from Fairoaks, and 3nm west of Guildford, he had requested to Farnborough Radar to climb above 1400ft (they had previously been asked to remain below 1400ft after taking off due to Farnborough ILS traffic). The controller advised that there was no altitude restriction, remaining clear of controlled airspace. He advised the controller that they would climb, and the student pilot then transitioned the aircraft from straight-and-level flight to a cruise climb. After climbing approximately 200ft, an SR22 passed through their level about 30-50m off their right wing-tip. He levelled off and spoke with the student about what had just happened. After 2mins he asked the radar controller if he had been aware that the SR22 had just passed within 100ft. He replied that he had not been aware and was very busy. The SR22 pilot said nothing on the radio following the incident. Throughout the flight he had been generally aware of the other aircraft being in the area. The SR22 pilot had taken off from Fairoaks 3-5mins after they had. He had seen his aircraft at the runway holding point 2 aircraft behind them whilst lining up. He was also aware that the SR22 pilot was in radio communication with Farnborough and had been assigned a squawk code. The sun was behind a layer of cloud, despite being an evening flight. Visibility was very good.

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

THE CIRRUS SR22 PILOT reports that there was no risk of a collision. They had the C152 in sight but were being held at 1400ft by Farnborough due to their inbound traffic. The C152 pilot obviously could not see them because they were behind and above the high wing of the C152. They overtook on his right-hand side at 155kt. They had received a TAS alert at a range of 2nm from the C152.

The pilot assessed the risk of collision as 'None'.

THE FARNBOROUGH LARS WEST CONTROLLER reports that he was informed on 19th July that a pilot reported an Airprox on 5th July that occurred while he was the OJTI on LARS West. The only recollection of a possible Airprox at the reported time was that a pilot asked my trainee if they were aware that an aircraft flew close to them. My trainee said no. He was very busy at the time and did not see the alleged incident. An Airprox was not reported on frequency.

Factual Background

The weather at Farnborough was recorded as follows:

METAR EGLF 051550Z AUTO 26008KT 220V300 9999 NCD 25/13 Q1017=

Analysis and Investigation

UKAB Secretariat

The C152 and SR22 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]. Because the incident geometry is considered as overtaking then the C152 pilot had right of way and the SR22 pilot was required to keep out of the way of the other aircraft by altering course to the right[2].

Occurrence Investigation

The following screen-shots were taken from the NATS radar recording of the incident.

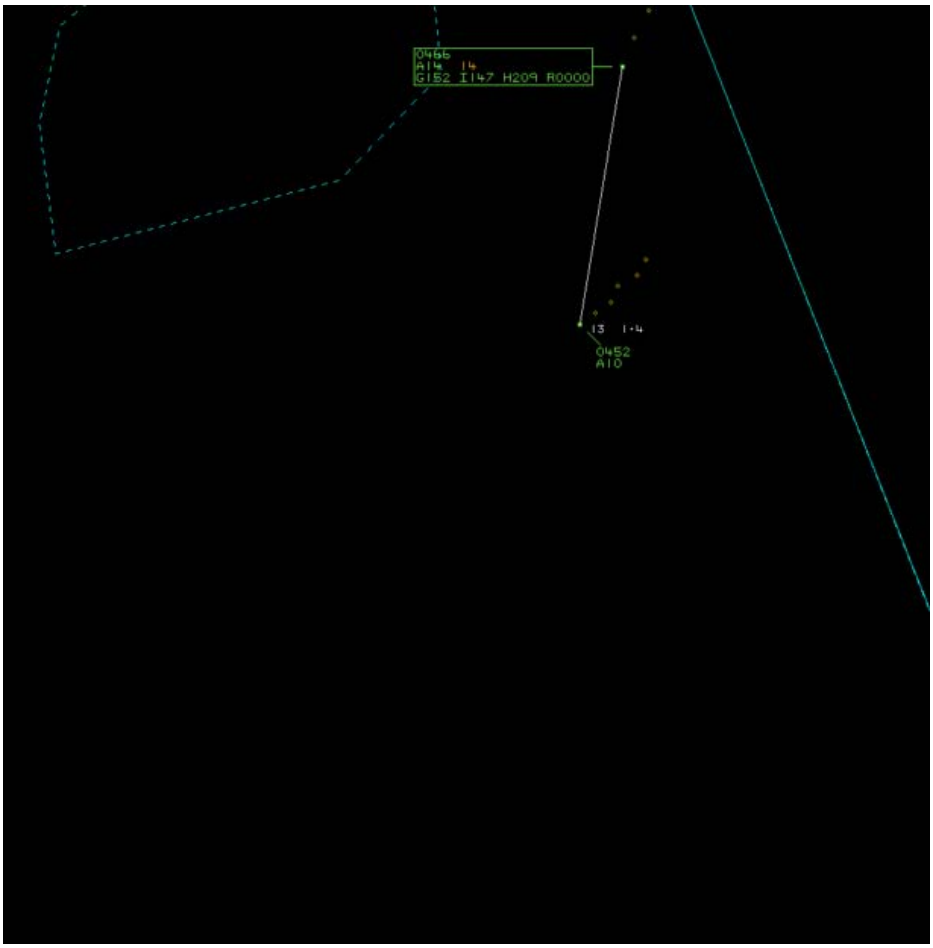


Figure 1 1604:15. SR22 0466; C152 0452.

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

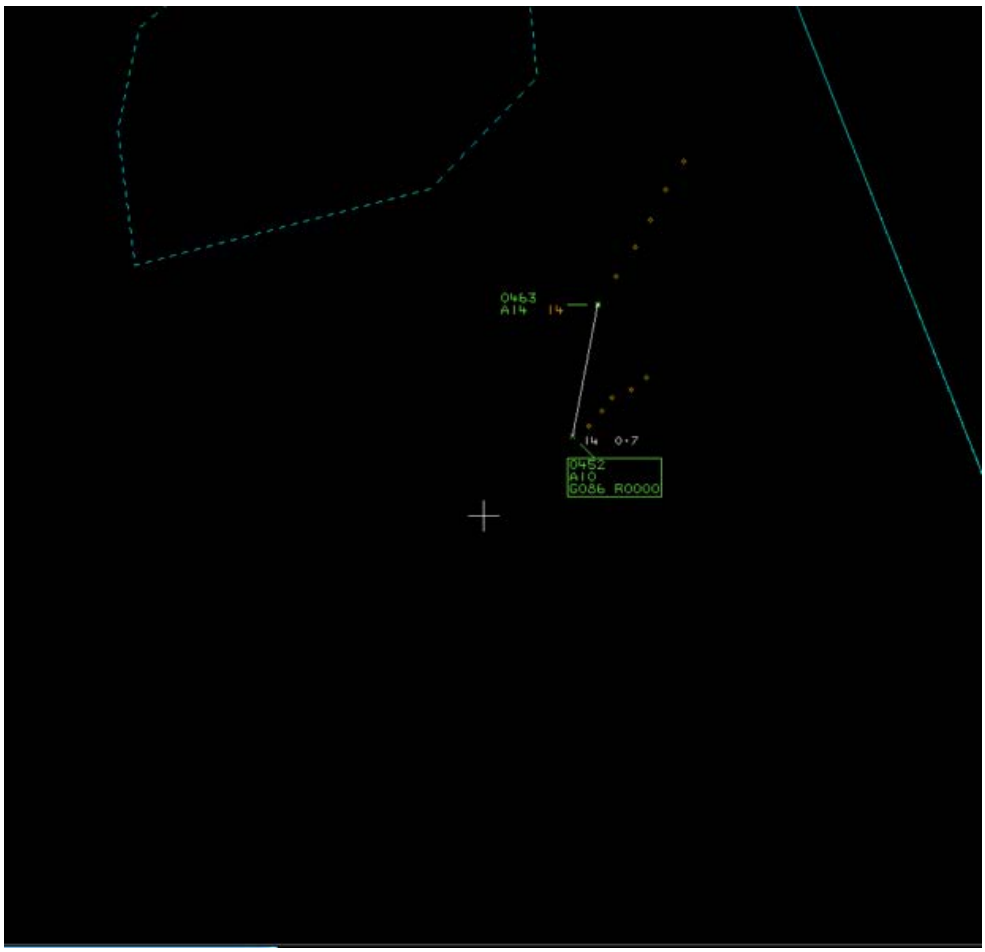


Figure 2 1604:45.

Figure 3 1605:03.

Figure 4 1605:14. CPA.

Summary

An Airprox was reported when a C152 and a SR22 flew into proximity west of Guildford at 1605hrs on Friday 5th July 2019. Both pilots were operating under VFR in VMC, in receipt of a Basic Service from Farnborough LARS West.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots, the controllers, and area radar recordings. 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 noted that both pilots were operating under VFR, in receipt of a Basic Service from Farnborough LARS. Because an Airprox was not reported on the Farnborough frequency at the time, the controllers involved, an OJTI and trainee, had no recollection of the event when advised 2 weeks later that an Airprox had been filed. Consequently, they were not able to complete a report. The Board reiterated the value of informing ATC of any Airprox as soon as possible so that controllers and other pilots could preserve any information and make notes as appropriate.

The Board first discussed the actions of the SR22 pilot and noted that he had departed from Fairoaks shortly after the C152. Both pilots had taken up a similar track to the southwest, with the SR22 being about 75kt faster than the C152. Farnborough had requested both pilots not to climb initially above 1400ft due to traffic positioning downwind south of Farnborough, and some members wondered whether this restriction had had the effect of limiting the SR22 pilot's options for achieving greater vertical separation between the aircraft. However, it was noted that the Airprox had occurred after that restriction had been lifted and so there was no constraint to the SR22 pilot's choice of height. Although a controller does not have to monitor aircraft under a Basic Service (**CF1**), some members considered that, in the circumstances where an altitude restriction had been requested, Traffic Information should

have been passed to the pilots. However, controller members commented that the SR22 pilot reported that he had obtained visual contact with the C152 and had also received information on his TAS (**CF5**) when he was at a range of 2nm from the C152; in their opinion, Traffic Information would therefore have made no difference to the SR22 pilot's actions.

Because the two aircraft were on similar tracks, with the SR22 flying faster, an overtaking situation developed. In accordance with SERA.3210 the SR22 pilot was required to keep out of the way of the C152 by altering course to the right. The SR22 pilot did pass to the right of the C152 but only by a short margin. The Board debated at some length whether the SR22 pilot had 'kept out of the way' of the C152 by a sufficient enough margin, and the majority view was that he had not (**CF2**) and that the pilot should have taken more action to ensure greater separation, especially because he could not have known what the C152 pilot's intentions might have been as he closed from behind (**CF3/CF4**). In this respect, although receiving a TAS alert, members felt that the SR22 pilot did not fully use this information to plan his overtake manoeuvre (**CF6**). Members also noted from the SR22 pilot's report that he had not considered that there had been a conflict (**CF8**), and cautioned that pilots should not assume that others would be as content with reduced separation as they might be, especially when being overtaken by surprise from behind.

For his part, the C152 pilot had reported that he had been aware that the SR22 was somewhere behind his aircraft because he had heard its pilot report his details on the Farnborough LARS frequency. However, he could not have known the exact geometry of the unfolding incident due to the SR22 being behind his aircraft which, in the absence of any collision warning equipment, meant that he was both unsighted (**CF7**) and had no specific situational awareness about the SR22. It was apparent to the Board that the sudden appearance of the SR22 at relatively close separation had been a cause for concern to the C152 pilot (**CF9**).

The Board then debated the risk within this incident at some length. Although the SR22 pilot was considered to have passed too close to the C152, members noted that he had had visual contact with the aircraft at the time and so would not have collided. Some members opined that there would have been a risk of a collision if the C152 pilot, not realising the close proximity of the SR22, had unexpectedly turned right or climbed at that point. However, the Board was there to assess what <u>had</u> happened, and not what <u>might have</u> happened and they noted that the radar recordings showed that the SR22 was indicating 200ft higher than the C152 at CPA. Therefore, and bearing in mind the different performances of the aircraft in climb rate and speed, although safety had been degraded, they agreed that there had not been a risk of a collision. Accordingly, the Board assessed the risk as Category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2019184		
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		
	• Regulations, Processes, Procedures and Compliance		
2	Human Factors	• Flight Crew ATM Procedure Deviation	Regulations/procedures not complied with
	• Tactical Planning and Execution		
3	Human Factors	• Insufficient Decision/Plan	Inadequate plan adaption
	• Situational Awareness of the Conflicting Aircraft and Action		
4	Human Factors	• Lack of Action	Pilot flew close enough to cause concern despite Situational Awareness
	• Electronic Warning System Operation and Compliance		
5	Contextual	• ACAS/TCAS TA	TCAS TA / CWS indication
6	Human Factors	• Interpretation of Automation or Flight Deck Information	CWS misinterpreted or not optimally actioned
	• See and Avoid		
7	Human Factors	• Monitoring of Other Aircraft	Non-sighting or effectively a non-sighting by one or both pilots
8	Human Factors	• Perception of Visual Information	Pilot perceived there was no conflict
9	Human Factors	• Lack of Individual Risk Perception	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 **not used** because when providing a Basic Service a controller does not have to monitor the aircraft.

Flight Elements:

Regulations, Processes, Procedures and Compliance were assessed as **ineffective** because the SR22 pilot did not sufficiently keep out of the way of the C152 whilst overtaking, as required in SERA 3210.

[3] 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, although the C152 pilot had been generally aware of the SR22 behind him, he would not have been aware of its actual position until it was overtaking his aircraft.

Electronic Warning System Operation and Compliance were assessed as partially available because only the SR22 was equipped with an electronic warning system. They were only **partially effective** because, although the SR22 pilot had received a TAS alert at 2nm and was therefore aware of the C152, he still passed close to the C152 whilst overtaking.

See and Avoid were assessed as **partially effective** because although the SR22 pilot saw the C152 in good time, he still flew into close proximity whilst overtaking.