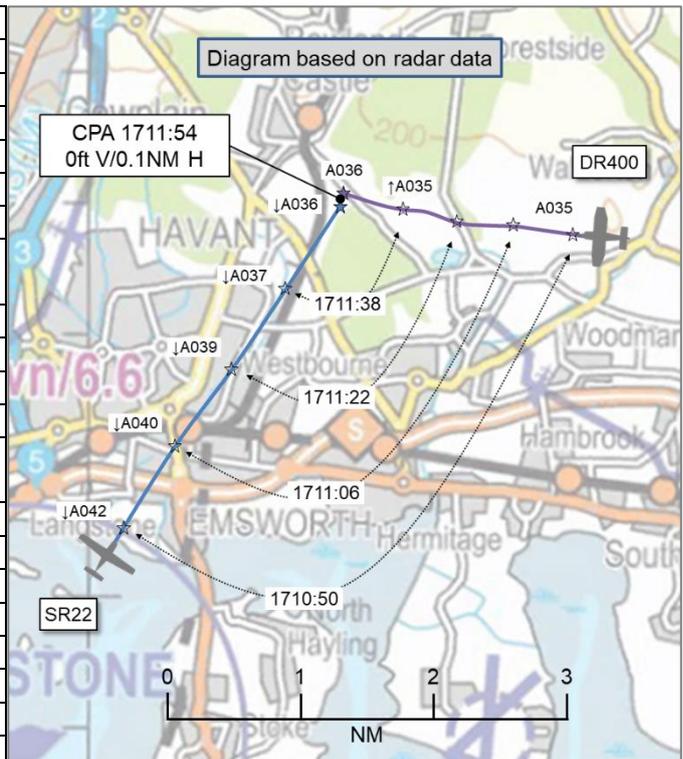


AIRPROX REPORT No 2022171

Date: 12 Aug 2022 Time: 1712Z Position: 5053N 00057W Location: 1NM NE Havant

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

| Recorded | Aircraft 1 | Aircraft 2 |
|--------------------------|-----------------------|----------------|
| Aircraft | SR22 | DR400 |
| Operator | Civ FW | Civ FW |
| Airspace | London FIR | London FIR |
| Class | G | G |
| Rules | VFR | VFR |
| Service | Basic | Listening Out |
| Provider | Farnborough LARS West | Solent Radar |
| Altitude/FL | 3600ft | 3600ft |
| Transponder | A, C, S+ | A, C, S |
| Reported | | |
| Colours | Red, White | Red, White |
| Lighting | Strobe, Nav, Landing | Beacon |
| Conditions | VMC | VMC |
| Visibility | >10km | NR |
| Altitude/FL | 3400ft | 3500ft |
| Altimeter | QNH (1016hPa) | NR |
| Heading | 035° | 280° |
| Speed | 150kt | 85kt |
| ACAS/TAS | TCAS I | Not fitted |
| Alert | None | N/A |
| Separation at CPA | | |
| Reported | 100ft V/200m H | 300ft V/500m H |
| Recorded | 0ft V/0.1NM H | |



THE SR22 PILOT reports that they had just completed a high-speed descent (170kt) from 4700ft after a cross-channel flight from [departure airfield]. They had established communication with Farnborough LARS [West] at approximately 1708 and were in receipt of a Basic Service (squawk code of 0450). They had just levelled at 3400ft and were briefly consulting their electronic chart to establish when they next needed to descend to remain clear of controlled airspace. [The weather was] bright sunlight [and during the descent the] attitude of their aircraft had been nose down approximately 5°. [They opine that the] other aircraft [may have been] hidden by the roof and right-side pillar. When they looked up, the other aircraft shot across the nose, dead ahead, passing right-to-left very close. They could read (but can't recall) the registration in fairly large letters on the side. There was no need, nor was there any time, to take avoiding action. It was a lucky escape. They suspect [the pilot of the other aircraft] had seen them as they seemed to be turning slightly as they passed. [The SR22 has] a TCAS as standard equipment, which only detected the other aircraft after the conflict had occurred and there was no longer a threat.

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

THE DR400 PILOT reports that they were on a VFR flight from [departure airfield] to [destination airfield] with one passenger. They always look at airspace and where there may be high levels of VFR traffic, especially on good weather days where Class G could become busy. Having seen a fast moving Cirrus, opposite direction, they made a right orbit away from the aircraft which passed down their right-hand side.

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

THE FARNBOROUGH LARS WEST CONTROLLER reports that they were operating Approach, LARS West and Farnborough Zone band-boxed on Radar 1 console at the time of the event. Traffic had been quiet, however had built in the immediate period prior to the event. [The SR22 pilot] called requesting a Basic Service over Portsmouth Harbour. They issued an SSR code and QNH but did not actively identify the aircraft at that time as they were aware [the aircraft] was off their radar range. The range had been set to be most appropriate to other aircraft receiving a Radar Service from them. They did observe the SSR code applicable to [the SR22] appear on their primary controlling screen and very shortly afterwards [the SR22 pilot] advised that they had experienced an Airprox with a red and white aircraft a few minutes earlier ([the SR22] pilot quoted 1711 as the time of the event). Given the sector workload at the time, they confirmed with the pilot [that they] would be filing an Airprox on the ground post flight.

Factual Background

The weather at Southampton was recorded as follows:

METAR EGGH 121650Z 12004KT 090V160 CAVOK 31/13 Q1015
 METAR EGGH 121720Z 12004KT 090V150 CAVOK 30/13 Q1015

Analysis and Investigation

Farnborough Unit Investigation Summary

Approach, Zone and West were being operated band-boxed. [There were] medium [levels of] traffic.

At 1708:00, with medium traffic levels, the ATCO was working a mixture of traffic on all frequencies. The radar was set to a 25NM range, slightly offset to the north. [The] Portsmouth [area] was not visible to the ATCO.

1708:40 [the SR22 pilot called]: “*Farnborough good afternoon [SR22 c/s]*”.

1708:46 ATCO: “*Station calling Farnborough Radar, on the landline, say again*”.

1708:50 [SR22 pilot]: “*Yeah it's [SR22 c/s] for a Basic Service*”.

1708:55 ATCO: “[SR22 c/s] *Farnborough Radar pass your message*”.

1708:56 [SR22 pilot]: “*Good afternoon [SR22 c/s] is a Cirrus SR22 from [departure airfield] to [destination airfield]. We're over Portsmouth at the moment 4700ft 1011. Shortly descending, requesting a Basic Service routing via [waypoint] for [destination]*”.

1709:09 ATCO: “[SR22 c/s] *QNH 1016 squawk 0450 Basic Service*”.

1709:13 [SR22 pilot]: “*1016 and the squawk 0450 for Basic. [SR22 c/s]*”.

At this time the 0450 squawk was not visible to the ATCO due to radar position.

At 1711:20, the 0450 squawk appeared on the bottom of the radar display converging with [an aircraft displaying a] 7011 (Solent Radar listening) squawk. The 7011 indicated 3500ft, which was unvalidated and unverified due to 7011 being a conspicuity squawk. Figure 1.



Figure 1 – SR22 appeared on screen.

The next shot is the whole radar screen for context, Figure 2.



Figure 2 – Entire radar screen as seen by controller.

The two aircraft continued to converge as the ATCO dealt with other traffic.

The raw radar-feed showed, at 1711:56, the aircraft were 0.11NM and 100ft apart, Figure 3.

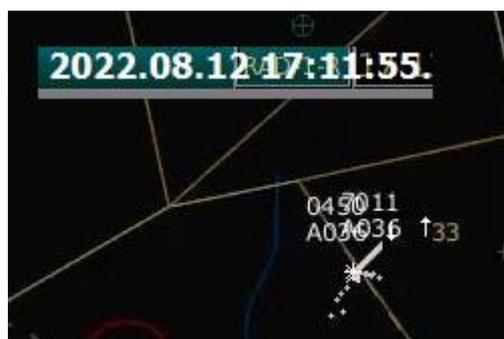


Figure 3 – 1711:56

1714:08 [SR22 pilot]: "Farnborough [SR22 c/s]"

1714:22 ATCO: "[SR22 c/s] Farnborough radar".

1714:23 [SR22 pilot]: “Just for information we had an Airprox at time 1711 altitude 3400ft a red white robin crossed right-to-left”.

1714:25 ATCO: “[SR22 c/s] roger, will you be filing it on the ground?”.

1714:27 [SR22 pilot]: “Er yeah I’ll file it later on [SR22 c/s]”.

[The investigator] reviewed the [ATC reporting forms] in conjunction with the RT and radar replays. They also spoke with the ATCO involved and checked with Solent Radar that the [DR400 pilot, squawking] 7011 did not report an Airprox on their frequency.

The ATCO stated that they were aware that when [the SR22 pilot] called over Portsmouth, they would not show on the radar until slightly further north. They did not move the radar display to identify the aircraft as they believed the setup they had was the most appropriate for providing radar services to inbound and outbound aircraft. [The SR22 pilot] was under a Basic Service, outside controlled airspace, under their own navigation.

CAP 774 states;

‘A controller may identify an aircraft to facilitate co-ordination or to assist in the provision of generic navigational assistance but is not required to inform the pilot that identification has taken place. Identification of an aircraft in receipt of a Basic Service does not imply that an increased level of ATS is being provided or that any subsequent monitoring will take place.

Given that the provider of a Basic Service is not required to monitor the flight, pilots should not expect any form of Traffic Information from a controller/FISO. A pilot who considers that they require a regular flow of specific traffic information shall request a Traffic Service’

In this instance the ATCO did not identify the aircraft or pass Traffic Information to [the SR22 pilot], but they were under no obligation to do so given the other tasks at that time.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and both aircraft were detected and identified using Mode S data. The SR22 pilot had been maintaining a steady track and descent in the lead-up to the Airprox and the DR400 had been straight and level until 8sec before CPA, when the radar detected a climb of 100ft. The orbit described by the DR400 pilot was detected by the radar 8 seconds (2 radar sweeps) after CPA.

The RT recording between the SR22 pilot and the Farnborough LARS West has also been reviewed and, when the SR22 pilot initially reported the Airprox to the controller, they also included an estimation of the separation of 400m.

The SR22 and DR400 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 SR22 pilot was required to give way to the DR400.²

Summary

An Airprox was reported when an SR22 and a DR400 flew into proximity 1NM northeast of Havant at 1712Z on Friday 12th August 2022. Both pilots were operating under VFR in VMC, the SR22 pilot in receipt of a Basic Service from Farnborough LARS West and the DR400 pilot listening out on the Solent Radar frequency.

¹ (UK) SERA.3205 Proximity.

² (UK) 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, a report from the air traffic controller 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.

The Board first considered the actions of the SR22 pilot and members had been encouraged that they had been planning ahead and, having been aware that they had been approaching controlled airspace, had been descending. A GA pilot member commented that the pilot's workload would have been relatively high and members noted that the area that they had been heading toward is often busy with other airspace users. The Board wondered whether it may have been appropriate for them to have reduced their airspeed or for them to have requested a Traffic Service from the Farnborough LARS controller rather than the Basic Service they had been receiving (**CF3**), which would have helped with their situational awareness. Members were encouraged that the SR22 pilot had been utilising their EC equipment, however, a GA pilot member who is familiar with SR22 aircraft noted that the standard EC fit of these aircraft differs from that reported by the SR22 pilot, although members agreed that with either fit, the EC equipment would have been expected to have alerted prior to the Airprox (**CF5**). The Board agreed that, although the SR22 pilot had had EC equipment, and had been in receipt of an Air Traffic Service, neither of these had provided the pilot with any awareness of the DR400 prior to the event (**CF4**) and that the SR22 pilot had become visual with the DR400 at a later than optimum stage (**CF6**).

Next, members discussed the actions of the DR400 pilot and noted that they had not been in receipt of a service but had been listening out on the Solent Radar frequency. Having examined the area of the Airprox and the direction of travel of the DR400, toward Solent controlled airspace, members agreed that this had been appropriate. The Board also noted that the DR400 pilot had not been carrying any EC equipment and members agreed that, although it is for individual airspace users to decide what their requirements are regarding EC equipment, they would encourage pilots to utilise every opportunity to enhance their situational awareness. The Board wished to highlight to pilots that additional funding has been made available for Electronic Conspicuity devices through the CAA's Electronic Conspicuity Rebate Scheme, which has been extended until 31st March 2023.³ Members went on to agree that the DR400 pilot had not had any prior awareness of the presence of the SR22 (**CF4**) and then agreed that, from the DR400 pilot's description of their sighting of the SR22, they had visually acquired the SR22 at, or after, CPA (**CF7**).

The Board then examined the involvement of the Farnborough LARS controller and agreed that, as the SR22 pilot had been in receipt of a Basic Service, they had not been required to monitor the flight (**CF1**), and that the controller had orientated their radar screen appropriately to best view their higher priority traffic. A NATS advisor to the Board informed members that, although Farnborough LARS West does have an STCA facility, the squawk codes selected by the SR22 and the DR400 pilots are outside the system select frame, and so it had not been used in this event (**CF2**).

Finally, in assessing the risk of collision, the Board agreed that although the SR22 pilot had been carrying EC equipment, this had not given a timely alert to the presence of the DR400. Members commented that, as neither pilot had had any prior awareness of the presence of the other aircraft, lookout had been the remaining barrier against mid-air collision and, whilst the SR22 pilot had become visual with the DR400, this had been at a later than optimum stage. Members agreed that, in this case, safety had not been assured and that there had been a risk of collision (**CF8**). Accordingly, the Board assigned a Risk Category B to this Airprox.

³ [Electronic conspicuity devices | Civil Aviation Authority \(caa.co.uk\)](https://www.caa.co.uk/News-and-Events/News/2022/2022-03-01-CAA-extends-Electronic-Conspicuity-Rebate-Scheme)

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**Contributory Factors:**

| 2022171 | | | | |
|---|---------------|--|---|--|
| 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 | | | | |
| • Tactical Planning and Execution | | | | |
| 3 | Human Factors | • Communications by Flight Crew with ANS | An event related to the communications between the flight crew and the air navigation service. | Pilot did not request appropriate ATS service or communicate with appropriate provider |
| • Situational Awareness of the Conflicting Aircraft and Action | | | | |
| 4 | Contextual | • Situational Awareness and Sensory Events | Events involving a flight crew's awareness and perception of situations | Pilot had no, late, inaccurate or only generic, Situational Awareness |
| • Electronic Warning System Operation and Compliance | | | | |
| 5 | Human Factors | • Response to Warning System | An event involving the incorrect response of flight crew following the operation of an aircraft warning system | CWS misinterpreted, not optimally actioned or CWS alert expected but none reported |
| • See and Avoid | | | | |
| 6 | 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 |
| 7 | 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 |
| • Outcome Events | | | | |
| 8 | Contextual | • Near Airborne Collision with Aircraft | An event involving a near collision by an aircraft with an aircraft, balloon, dirigible or other piloted air vehicles | |

Degree of Risk: B

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 **not used** because, under a Basic Service, the Farnborough controller was not required to monitor the flight of the SR22.

Electronic Warning System Operation and Compliance were assessed as **not used** because the transponder codes selected by the pilots had been outside of the STCA system select frame.

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

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither pilot had had any awareness of the presence of the other aircraft prior to sighting it.

Tactical Planning and Execution was assessed as **partially effective** because the SR22 pilot had been in receipt of a Basic Service from Farnborough LARS, however, a Traffic Service would have been more appropriate for their high-speed descent toward busy airspace.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the EC equipment fitted to the SR22 should have alerted the pilot to the presence of the DR400 prior to CPA.

See and Avoid were assessed as **partially effective** because the DR400 pilot had become visual with the SR22 at a later than optimum stage, and the SR22 pilot had become visual with the DR400 at a point when it had been too late for them to have been able to take any effective avoiding action.

