

AIRPROX REPORT No 2014016

Date/Time: 28 Feb 2014 1459Z

Position: 5122N 00054W
(3nm NW Blackbushe
(- elevation 325ft)

Airspace: London FIR (Class: G)

Aircraft 1 Aircraft 2

Type: A109 C525

Operator: Civ Comm Civ Comm

Alt/FL: 2400ft 2400ft
QNH (998hPa) QNH (NK)

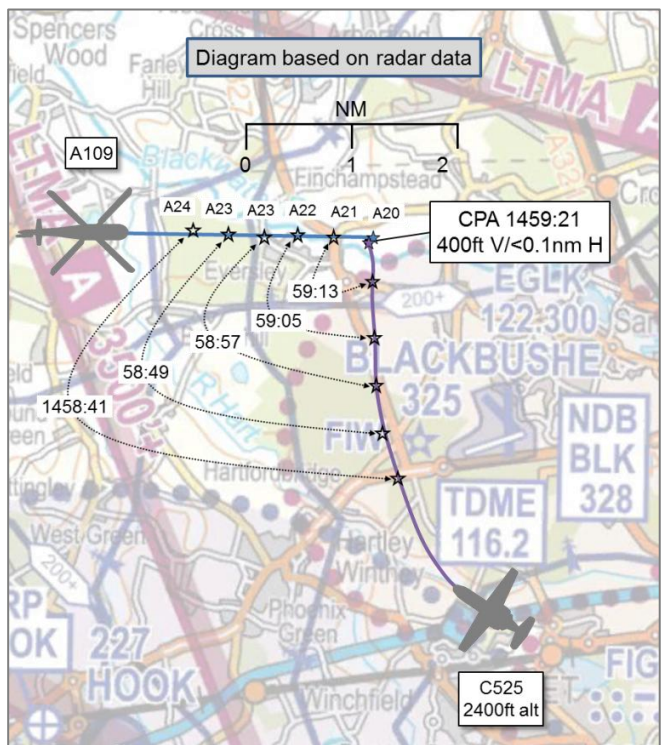
Conditions: IMC IMC

Visibility: Nil NK

Reported Separation:

200ft V/0nm H 400ft V/0nm H

Recorded Separation: 400ft V/0.1nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE AGUSTA A109E (A109) PILOT reports being IFR in cloud at 2400ft on the Farnborough QNH, IMC with occasional non-discernible gaps in cloud, and in receipt of a Traffic Service from Farnborough Radar. His silver and blue helicopter had HISL, navigation and landing lights illuminated. SSR Modes C and S (elementary) were selected, and a Traffic Advisory System (TAS) was fitted. As he passed NW of Blackbushe airport he saw on TAS another aircraft climbing towards his helicopter's level. It initially appeared to be turning west towards him and so he monitored the aircraft as it climbed. The Radar controller issued Traffic Information to him and the other pilot. The other aircraft continued to turn towards him, levelled at 2400ft and, because nothing further was said by ATC, he decided to initiate a descent by 200ft. He received a TA and the other aircraft popped out of cloud 200ft above him, in his 2 o'clock position crossing right to left at a distance of 100m; he ended up flying right under the aircraft. He reported to the controller that it was very close. Shortly afterwards the other aircraft went back into cloud; its pilot said that he had been out of cloud for 5 sec and had seen the A109 when it was underneath him. The A109 pilot had not deviated from his course and considered that, had he not descended, it would have been extremely close to a collision. Although the pilot of the other aircraft reported that he had detected his helicopter on TCAS, the A109 pilot was concerned that he had still manoeuvred towards him. The A109 pilot confirmed that his helicopter was not equipped with TCAS: his TAS provided TAs but RAs were not available.

He assessed the risk of collision as 'Very High'.

THE CESSNA 525A CITATION CJ2 (C525) PILOT reports that his aircraft was coloured white and blue: empennage, strobes and recognition lights were illuminated and SSR Codes C and S were selected. TCAS was fitted. He departed from Blackbushe airport and recollected that he was in receipt of a Traffic Service from Farnborough LARS. He was level at 2400ft (London QNH) in cloud when he was advised of traffic [the A109] by Farnborough. He was about to take avoiding action by descending when the helicopter began to descend. He commented that he 'could' have climbed into Controlled Airspace but this may have caused other conflicts, so he maintained his altitude as it was clear that the helicopter was descending. He saw the traffic before it passed underneath him. In his opinion avoiding action was necessary in order to avoid a collision. He had received a TCAS 1 warning at about 2-3nm, becoming visual at 0.5nm.

He assessed the risk of collision as 'Medium'.

THE FARNBOROUGH APPROACH/LOWER AIRSPACE RADAR SERVICE (LARS) WEST CONTROLLER reports that she was the On the Job Training Instructor (OJTI) with Approach and LARS W band-boxed at the time of the incident. The pilot of the A109 was receiving a Traffic Service, routing from the west towards Blackbushe airport, tracking to the north of its ATZ. There was known traffic (the C525) departing Blackbushe airport, turning right initially and then routing northbound towards Woodley (WOD). The pilot of the C525 contacted the frequency after departure and her trainee asked the pilot to squawk 'ident'¹ on the previously assigned code of 0430. Immediately afterwards another LARS aircraft called on frequency which the trainee responded to. After this the trainee informed the pilot of the C525 that he was identified, in receipt of a Traffic Service and issued Traffic Information about the A109, but including a left/right error. Given the other information in the Traffic Information she thought it more important to also pass Traffic Information to the pilot of the A109, rather than immediately correct it. However, after the read-back, the A109's pilot immediately said that he was descending to avoid the conflicting traffic. The trainee acknowledged this and then gave Traffic Information to the pilot of the C525. The latter pilot called visual with the A109. The C525 was observed to cross over the A109 at 2400ft as the helicopter was descending through approximately 2100ft. The pilot of the A109 reported that the C525 had passed 200ft above. He was informed about further departing traffic from Blackbushe airport, which was turning south initially and then west. Both pilots continued their flights without further incident.

THE FARNBOROUGH APPROACH/LARS TRAINEE CONTROLLER reports that he was working the Approach/LARS West band-boxed position with his mentor. The pilot of the A109 contacted the position at 2400ft and was given a Traffic Service. At about the same time, a C525 departed Blackbushe RW07 in a right turn to WOD under a Traffic Service climbing to 2400ft. He issued the pilot of the C525 Traffic Information on the A109. Receiving this information, the pilot of the A109 reported his intention to descend, and he approved his descent, taking his own terrain separation. The pilot of the A109 was concerned that the C525 was getting close as he was IMC. He updated the Traffic Information. The A109's pilot reported that the C525 had just over-flown him by 100ft. The pilot of the C525 replied that he had had the A109 in sight 400ft below.

Factual Background

The Farnborough weather was:

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METAR EGLF 281450Z 01012KT 9999 VCSH BKN020 07/03 Q998=
METAR EGLF 281520Z VRB14KT 9999 VCSH BKN015 07/04 Q999=
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CAP 774 – UK Flight Information Services Chapter 3 states that:

A Traffic Service is a surveillance based ATS, where in addition to the provisions of a Basic Service, the controller provides specific surveillance-derived traffic information to assist the pilot in avoiding other traffic. Controllers may provide headings and/or levels for the purposes of positioning and/or sequencing; however, the controller is not required to achieve deconfliction minima, and the avoidance of other traffic is ultimately the pilot's responsibility.

Pilots should be aware that a Traffic Service might not be appropriate for flight in IMC or where lookout is significantly constrained by other factors, when other ATS are available.

Traffic is normally considered to be relevant when, in the judgement of the controller, the conflicting aircraft's observed flight profile indicates that it will pass within 3 NM and, where level information is available, 3,000 ft of the aircraft in receipt of the Traffic Service or its level-band if manoeuvring within a level block. However, controllers may also use their judgment to decide on occasions when such traffic is not relevant, e.g. passing behind or within the parameters but diverging. Controllers shall aim to pass information on relevant traffic before the conflicting aircraft is within 5 NM, in order to give the pilot sufficient time to meet his collision avoidance responsibilities and to allow for an update in traffic information if considered necessary.

¹ The 'ident' feature causes the aircraft's Mode 3/A code to flash on the controller's radar display to aid radar identification.

Controller judgement is essential to ensure that traffic information is relevant and timely. Controllers should take account of the aircraft's relative speeds, lateral and vertical closure rates, and track histories

Analysis and Investigation

CAA ATSI

ATSI had access to area radar recordings, written reports from both pilots, a written report from the Farnborough LARS West/Approach controller together with RTF recording and transcript of the Farnborough LARS West frequency.

At 1453:50 the A109 was 14.7nm west-northwest of Blackbushe airport, tracking east; the pilot requested a Traffic Service from Farnborough LARS West. The A109 pilot reported at 2400ft on QNH 998hPa. He was given a squawk of 0451, identified, and a Traffic Service was subsequently agreed.

At 1454 Blackbushe advised Farnborough ATC that the C525 was taxiing for departure. As this flight was not an airways-joiner not only was a release not normally requested from Farnborough but also an airborne time was not usually passed. [Squawk 0430 was allocated.]

At 1456:50 the C525 became visible on radar, turning right towards WOD NDB, following departure from RW07 at Blackbushe. The A109 was 7.8nm west-northwest of Blackbushe. The C525 pilot contacted Farnborough at 1457:51 and was instructed to squawk 'ident' and report his level, which was 2400ft.

At 1458:12 the pilot of the C525 was informed that he was identified and was provided with a Traffic Service. Traffic Information was passed on the subject A109 4nm right to left (the A109 was actually left to right) at 2400ft to which the C525 pilot replied that he was looking. The two aircraft were 5.7nm apart.

At 1458:30 the A109 pilot reported having the C525 in his two o'clock on TAS and that he wanted to commence a descent (Figure 1 at 1458:30).

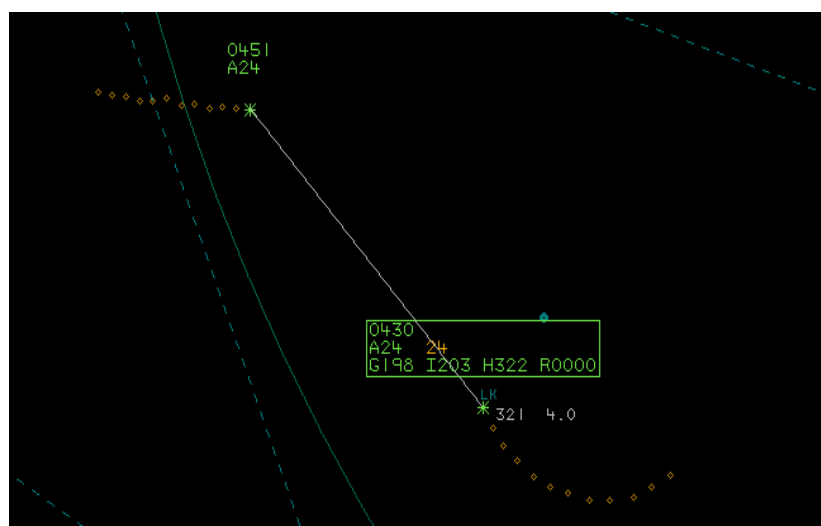


Figure 1 – 1458:30

The A109 pilot was given descent at his discretion, and Traffic Information on the C525 was passed. The A109 pilot acknowledged the information and stated that the C525 was about to go “right over the top of us a hundred feet above” (Figure 2 at 1459:00).

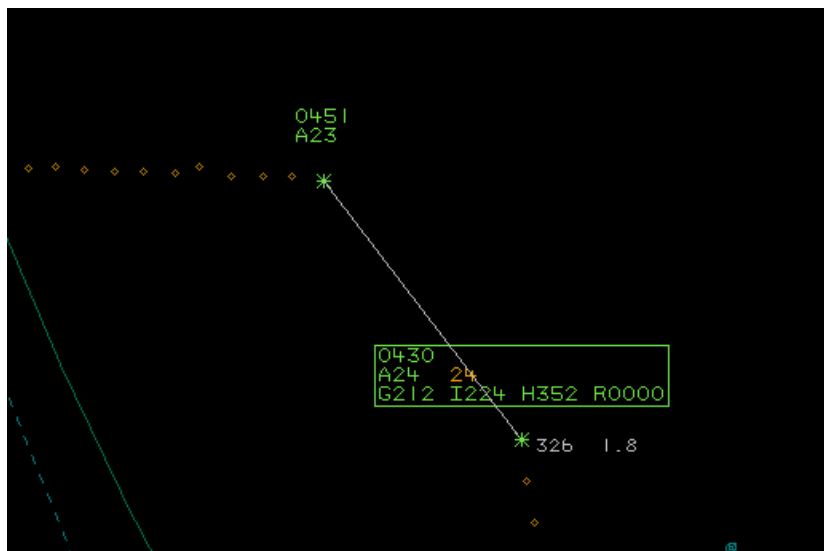


Figure 2 – 1459:00

At 1459:20 the A109 pilot reported that the C525 had gone over the top 200ft above and that he was in “*very, very broken cloud*”. The C525 pilot reported being visual with the helicopter traffic and stated that “*he’s showing four hundred below*”. CPA was at 1459:24 when the tracks of the two aircraft crossed with the A109 at 2000ft and the C525 at 2400ft (Figure 3).

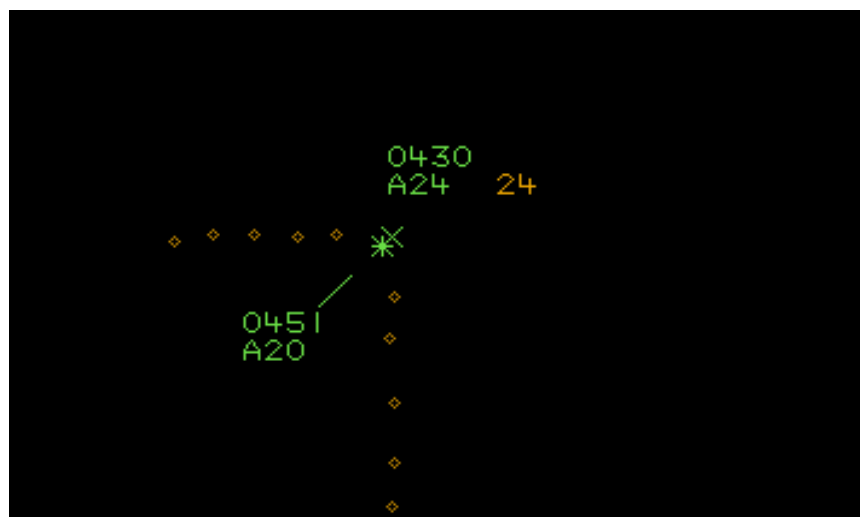


Figure 3 – 1459:24

UKAB Secretariat

Both pilots had equal responsibility for collision avoidance and not to fly into such proximity as to create a danger of collision². The A109 pilot was required to give way³. An aircraft obliged to give way shall avoid passing over or under the other aircraft, or crossing ahead of it, unless passing well clear of it⁴

Summary

The Airprox occurred in Class G airspace, 3nm northwest of Blackbushe airport. Both aircraft were receiving a Traffic Service from the Farnborough Approach/LARS controller. Timely traffic information on the A109 was passed to the C525 pilot (albeit with an inaccurate description of direction) and, shortly afterwards, also to the A109 pilot on the C525 (although not until they were approximately

² Rules of the Air (2007) (as amended), Rule 8 (Avoiding aerial collisions).

³ Ibid., Rule 9 (Converging) Paragraph 3.

⁴ Ibid., Rule 8, Paragraph 4.

4nm apart and after the A109 pilot had already reported descending to avoid the C525). The A109 pilot reported that the other aircraft popped out of cloud 200ft above him, in his 2 o'clock position at a distance of 100m. The C525 pilot reported receiving a TCAS 1 warning at about 2-3nm, becoming visual at 0.5nm. As both aircraft were below controlled airspace (CAS) with a base of 2500ft, the options available for vertical separation were limited without infringing CAS. The minimum separation was recorded as 400ft vertically and 0.1nm horizontally.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both aircraft, transcripts of the relevant RTF frequency, radar recordings, reports from the controllers concerned and reports from the appropriate ATC and operating authorities.

The Board noted that both pilots were operating under IFR/IMC and in receipt of a Traffic Service from Farnborough ATC. In view of the weather conditions, Members wondered why the pilots had not requested a Deconfliction Service. A civil helicopter pilot member commented that, in his experience, Farnborough ATC were generally too busy to provide a Deconfliction Service; therefore pilots tend not to request the service. However, an ATC advisor reported that, on this occasion, traffic levels had been low enough to allow the service to be provided, if it had been requested, and that pilots should not try to second-guess controller workload. A Civil pilot member added that, from his experience, trying to achieve the Deconfliction minima of 5nm/3000ft when providing a Deconfliction service, can result in ATC vectoring the pilots well off their planned route to try and achieve the 5nm 'separation'. This, he felt, does lead to pilots deciding not to request the service. He commented that, furthermore, many pilots do not realise that it is always possible to request a change of service from a Traffic Service to a Deconfliction Service and then return to a Traffic Service again as traffic circumstances change.

A discussion then ensued as to the viability of achieving Deconfliction Service minima; the Board opined that, in certain circumstances, such as in congested areas, the stated Deconfliction minima could be considered excessive and impractical. It was pointed out that, for example, trying to achieve the 5nm horizontal minima from a slow moving glider or aircraft was clearly excessive, and that there was a case for a graduated set of minima depending on the aircraft involved. It was suggested that time-based minima, or a reduction of the current minima for slower traffic could be introduced to make them more achievable thereby removing the need for possible 'over-vectoring'. It was realised, however, that not all controllers have the requisite displays or tools to provide time based minima. Nevertheless, if one could be introduced, the Deconfliction Service would then be consistent with other systems such as TCAS, STCA and FLARM. Consequently, the Board decided to make a recommendation that the CAA considers reviewing the criteria for Deconfliction minima under a Deconfliction Service.

The Board then turned its attention to the ATC aspects of the Airprox. It was noted that Blackbushe had informed Farnborough about the departing C525 even though this was not required because it was not joining CAS; it was surmised that the telephone call was possibly made because of the poor weather conditions. The Board wondered whether Traffic Information could therefore have been passed to the C525 pilot while he was still on the ground at Blackbushe; this would have allowed him to make a decision about departing or waiting until the A109 had passed clear of the area before taking off. Members considered whether he could have levelled off below the A109's transit altitude of 2400ft; however, this would have placed the aircraft below the Minimum Sector Altitude. Farnborough ATC (the LARS trainee) did pass Traffic Information to the C525 pilot once he was airborne, identified and placed on a Traffic Service (although the crossing direction of the A109 was incorrectly stated). The A109 pilot was not informed by Farnborough LARS about the planned departure of the C525 even though Farnborough and Blackbushe had discussed the C525's departure 5mins prior to the Airprox.

Members debated whether the pilots should have taken earlier action to resolve the confliction once they were aware of each other; the A109 pilot had observed the C525 on his TAS about 50secs prior to CPA, and the C525 pilot had been issued with Traffic Information and also had the helicopter

showing on his TCAS about 1min prior to CPA. Notwithstanding the requirements regarding the A109 having to give way to the C525 when converging, the Board opined that an earlier change in track or speed by either pilot would probably have broken the collision geometry and removed the need for the A109 pilot to descend. As it was, it was only the A109 pilot's descent just prior to their tracks crossing that had resolved the conflict. Consequently it was considered that the cause of the Airprox was a conflict of flight paths, which was resolved by the A109 pilot. The Board noted that the C525 pilot reported that he did not consider it necessary to take any action because he was aware that the A109 pilot was descending.

Turning to the risk, the Board considered that because the Airprox occurred in IMC, with the aircrafts' flight paths crossing in very close proximity, safety margins were much reduced below normal. Consequently, it was decided that the risk should be categorised as 'B'.

PART C: ASSESSMENT OF CAUSE AND RISK

<u>Cause:</u>	A conflict of flight paths resolved by the A109 pilot.
<u>Degree of Risk:</u>	B
<u>ERC Score⁵:</u>	4
<u>Recommendation:</u>	The CAA considers reviewing the criteria for deconfliction minima under a Deconfliction Service.

⁵ Although the Event Risk Classification (ERC) trial had been formally terminated for future development at the time of the Board, for data continuity and consistency purposes, Director UKAB and the UKAB Secretariat provided a shadow assessment of ERC.