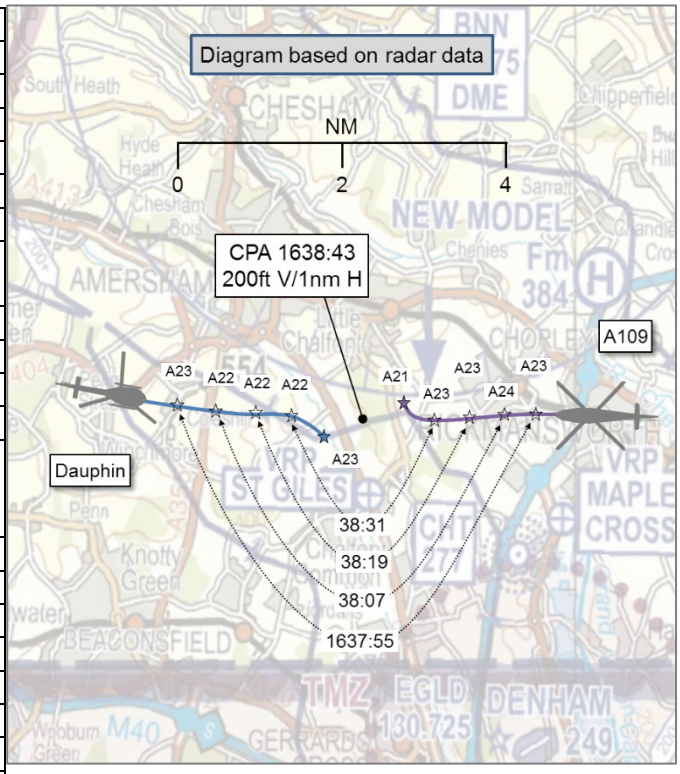
AIRPROX REPORT No 2019008

Date: 15 Jan 2019 Time: 1639Z Position: 5139N 00034W Location: 4nm NW Denham aerodrome

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Dauphin	A109
Operator	HQ AAC	Civ Helo
Airspace	London FIR	London FIR
Class	G	G
Rules	IFR	VFR
Service	Traffic	Traffic
Provider	Northolt Approach	Luton Approach
Altitude/FL	2300ft	2100ft
Transponder	A,C, (S was off)	A,C,S
Reported		
Colours	Blue/white	Black
Lighting	Nav, HISL (white/red)	Red anti-coll, strobes, landing, taxi, search
Conditions	IMC	VMC
Visibility	Nil	5km
Altitude/FL	2300ft	2400ft
Altimeter	QNH (1017hPa)	QNH (1016hPa)
Heading	120°	270°
Speed	130kt	140kt
ACAS/TAS	TAS	TAS
Alert	TA	TA
Separation		
Reported	Not seen	Not seen
Recorded	200ft V/1.1nm H	



THE AS365 DAUPHIN PILOT reports that while positioning downwind for the ILS for RW25 at Northolt, the controller informed him they had conflicting traffic in their 12 o'clock, 3nm, at the same altitude. At this point the TAS alerted them to the conflict to their front at the same altitude. He informed the controller that he was turning left to avoid the traffic. They informed him that the other aircraft [the A109)] had turned that way. He immediately rolled right while the controller asked him to take avoiding action to the right. On hearing this instruction, he increased his angle of bank to 45°. The icon on the TAS then merged over the top of their aircraft icon in yellow displaying 0ft vertical separation. After a few secs, the controller informed them the aircraft had passed them and that there was no further conflict. They continued their original heading and he asked the controller who was working that aircraft as they were both IMC at the time [he thought]. They informed him that it was being controlled by Luton and that they had telephoned Northolt to advise them just before the event occurred. He asked them to time-stamp the tape as he would subsequently submit an Airprox report, even though he had not seen the other aircraft because they were in cloud.

THE AGUSTA A109 PILOT reported that he was routeing westbound and exiting the Elstree ATZ. While still climbing, he changed frequency to Luton Approach for a Traffic Service in Class G airspace below the London TMA. He climbed and maintained 2400ft. The TAS display showed no traffic. After a few moments the Luton Approach controller advised of a contact opposite direction 12 o'clock at 3nm, similar altitude. At the same time a TAS TA indicated the subject traffic. An immediate descent to mitigate any collision risk was initiated while attempting to establish visual contact with the traffic. This descent was communicated to Luton Approach but this blocked a simultaneous attempt by the Luton Approach controller to advise him that the opposing traffic was also descending and showing 2200ft while he was also descending through 2200ft. Without visual contact with the traffic, and identifying the

increased risk of potential for a collision, he executed an immediate 90° right turn heading north and expedited descent to <2000ft. He elected not to communicate this to the Luton Approach controller to avoid blocking any further advisories about the opposing traffic if the traffic may also be manoeuvring to the north. The Luton Approach controller observed his avoiding action and advised that the traffic was clearing behind and that he could resume a westerly track.

THE NORTHOLT APPROACH RADAR CONTROLLER reported that he had been in position for 30mins. He had all positions bandboxed because there were only 2 movements left for the day on the flying programme. There was an ATCO I/C also in position. The Dauphin was handed over to him under a Traffic Service. He identified the helicopter and placed the pilot under a Traffic Service. He called conflicting traffic at 5nm, opposite direction, same altitude. The Dauphin pilot acknowledged the transmission. The Dauphin continued on the same heading for another 1-2nm and then reported he was going to turn left onto 090°. At this point, a turn of 090° would have put the Dauphin further into confliction so he informed him that the conflicting traffic was indicating that it would pass down his left-hand side. He suggested a right turn instead, and re-called the traffic '3nm opposite direction 100ft above' and asked the pilot to report visual, to which he responded he was IMC. As the Dauphin pilot started to turn right, the conflicting traffic started to turn left, bringing the 2 aircraft closer into confliction. It was at this point he believed the Luton controller called for co-ordination. The landline was answered by the ATCO I/C. Co-ordination could not have been achieved as both aircraft were within 2nm and 100ft apart. He instructed the pilot to make his turn an avoiding action turn right to avoid the conflicting traffic. The Luton controller also appeared to give an avoiding action turn right to the pilot of his aircraft. As soon as there was adequate lateral separation he turned the Dauphin pilot back onto 090°. The pilot asked which agency the other pilot was working because he believed the other aircraft came close and he was IMC. He asked if would like to upgrade to a Deconfliction Service rather than a Traffic Service, which the pilot accepted.

He perceived the severity of the incident as 'Medium'.

THE NORTHOLT SUPERVISOR reports that the Supervisor Role at Northolt can be covered by a fully validated controller who operates as an 'ATCO IC/Co-ordinator'. He was in the Coordinator position at the time of the occurrence. The Radar controller was working the Dauphin (4360) under a Traffic Service. The pilot was operating at 2300ft on the London QNH. The Radar controller called relevant traffic to the Dauphin pilot. The traffic was in the Dauphin's 12 o'clock, 5nm away, indicating a similar altitude. The Dauphin pilot then informed the controller that they were under IMC. The controller suggested an appropriate right turn. Both tracks then took right hand turns with approximately 1.5nm separation. After confirming that the Dauphin pilot required an upgrade in service the controller then upgraded it to a Deconfliction Service.

THE LUTON INT DIRECTOR was only made aware of the Airprox sometime after the event, so although he did remember the incident in part, his recollections might not be correct. He was working the A109 pilot on a Traffic Service to the south of the BNN VOR. He was busy with Luton IFR traffic but still able to support the Traffic Service. He saw that the A109 had traffic approaching almost head-on at the same level but fairly distant. He could not remember if he called the traffic at this time but did later. He contacted Northolt Director by landline to request co-ordination; he recalled this taking some time. At the end of the call he believed he considered the traffic to be dangerously positioned and having a high risk of collision. Due to this, whilst not required to do so, he thought he suggested to the A109 pilot that he would advise an immediate turn to the right, which he believed he did. He also believed that they discussed the relative levels. The aircraft then passed each other and he continued providing a Traffic Service.

Factual Background

The weather at Northolt was recorded as follows:

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METAR EGWU 151626Z 23007KT 9999 FEW018 BKN032 09/07 Q1017 BLU TEMPO SCT018 BKN030 WHT=
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Analysis and Investigation

Military ATM

The Dauphin was inbound to RAF Northolt for an ILS approach at 2300ft and was in receipt of a Traffic Service. The A109 was climbing to 2400ft and was receiving a Traffic Service from Luton Approach. Both pilots were passed Traffic Information on each other and both received TAS warnings about the other aircraft prior to the Airprox.

Figure 1 depicts the point at which the Dauphin pilot was handed over to Northolt Approach. At the time of handover, the A109 was 16nm away on a reciprocal heading and squawking 7000.

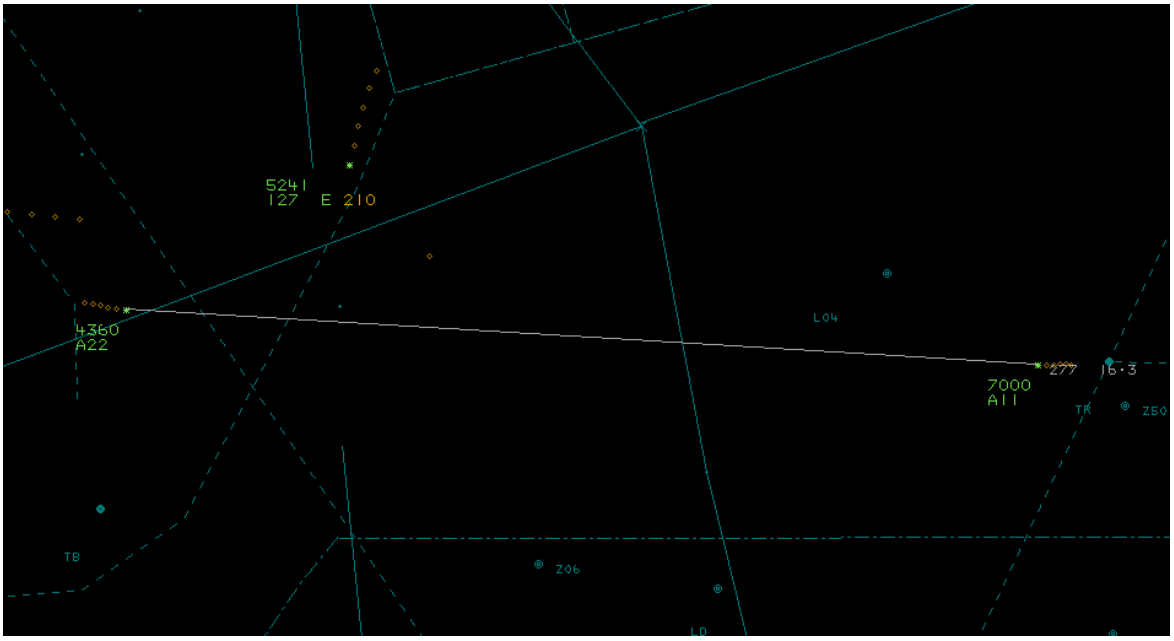


Figure 1. Dauphin squawk 4360; A109 7000.

As the separation between the aircraft decreased, Traffic Information was passed by the Northolt Approach Controller at a range of 5nm (Figure 2). Both aircraft were indicating a similar level but the A109 was in a slight climb (reported climbing to 2400ft by the A109 pilot).

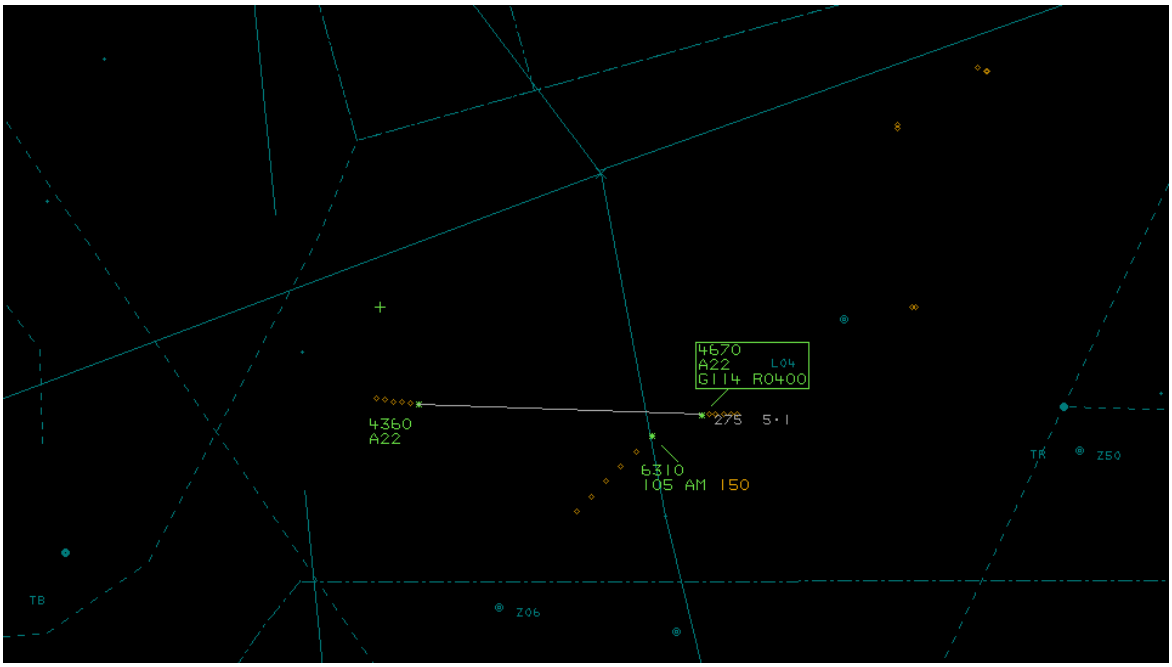


Figure 2. A109 squawk 4670.

Some 18sec after this Traffic Information, the Dauphin pilot requested a left turn to avoid the traffic but the Northolt Approach Controller advised them that the A109 would pass down their left-hand side and suggested a right turn instead. This was followed by updated Traffic Information from the Northolt Approach Controller and coincided with reported Traffic Information from Luton Approach to the A109 pilot and both aircraft receiving TAS warnings (Figure 3).

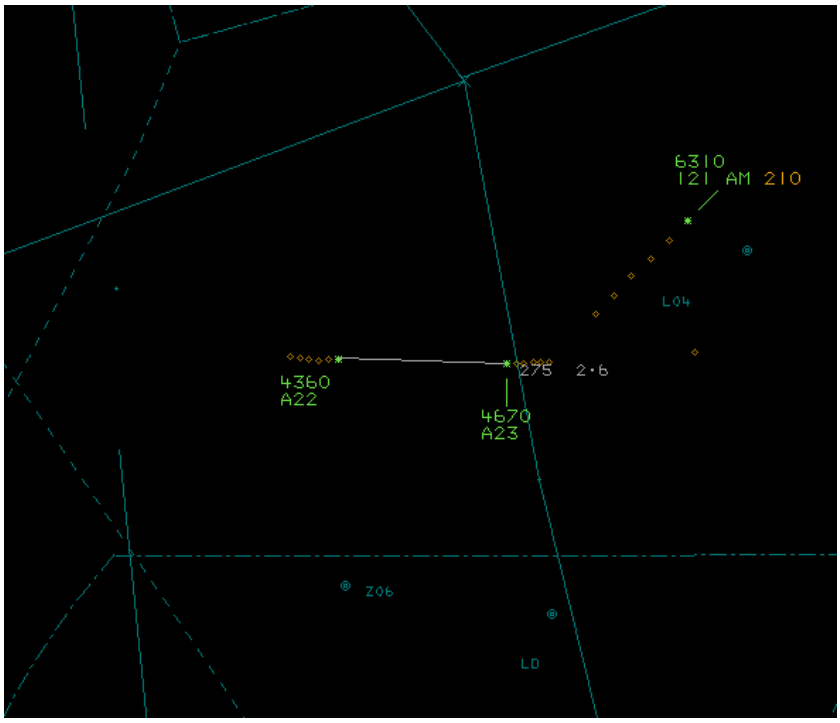


Figure 3.

Shortly after this final piece of Traffic Information, both pilots took avoiding action which ultimately increased separation between them. CPA was measured on radar as 1.1nm lateral and 200ft vertical separation (Figure 4).

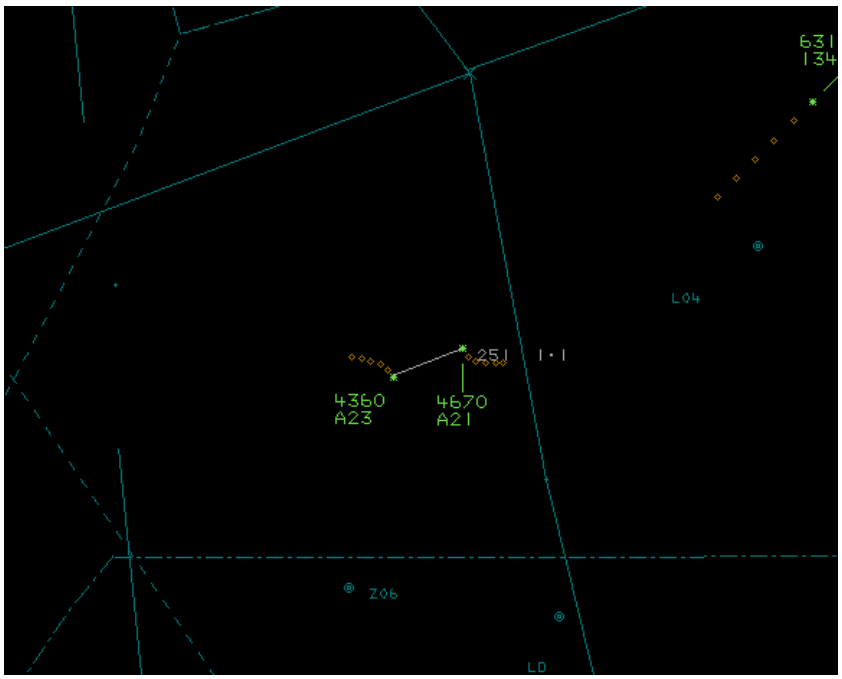


Figure 4 – CPA.

The Northolt Approach Controller passed Traffic Information to the Dauphin pilot on the A109 on two occasions (at 5nm and 3nm). When informed by the Dauphin pilot that he intended to turn left to avoid the A109, the Northolt Approach Controller correctly assimilated that this would exacerbate rather than alleviate the confliction and advised the Dauphin pilot accordingly.

NATS Ltd Unit Occurrence Investigation Report

At 1636:27 the A109 pilot contacted Luton Radar "Luton good evening [A109 C/S]"; the controller replied "[A109 C/S] Luton Radar good afternoon squawk 4670 QNH 1016 and pass your details" The pilot replied "4670 currently 1016 [A109 C/S], is an Augusta 109, 2 on board out of Elstree enroute to a private site near Newport, North Wales, just passing south west of Watford at this time, climbing through level 1800 for 2400 remaining clear of controlled and requesting a Traffic Service if available." The controller replied "[A109 C/S] Luton radar thanks, you are identified and it is a Traffic Service QNH 1016". The pilot responded "Traffic Service 1016 thank you [A109 C/S]". Opposite direction to the A109 was a 4360 Squawk (RAF Northolt) indicating 2300ft, 7.5nm at the time of the end of these transmissions. Other transmissions were made.

At 16:37:57, the controller transmitted "[A109 C/S] traffic in your 12 o'clock head on to you indicating the same level range 3 miles", the pilot replied "er roger thank you [A109 C/S], we'll go back down to 2000". the controller responded "he's just descending to 2200". The pilot replied "say again [A109 C/S]". The controller replied "he's just gone down to 2200". the pilot responded "er roger climbing back up to 2400 [A109 C/S] can you just confirm that he's opposite direction". The controller replied "12 o'clock 2 miles". During the latter part of this transmission, at 1638:18, the controller initiated a telephone call to Northolt. This was answered, at 1638:27, with "Northolt Co-ordinator". The Luton controller said "hello just south of BNN 4360 request co-ordination against the 70", the Northolt controller said " go ahead". The Luton controller said "Yeah ok I'm an er let's see an Augusta 109 Just checking the level ah you've gone right thank you very much and mine has as well I think they must have just seen each other, brilliant". The Northolt controller talking at the same time said "ours is at er 2300" and "yeah yeah just calling it er cheers thanks. Bye".

During the telephone call there was a transmission from another pilot requesting a frequency change. At the end of the telephone call, at 1638:45, the two aircraft were at CPA, 1.0nm apart with the 4360 [the Dauphin] indicating 2300ft and the A109 indicating 2100ft. (Figure 5). Both aircraft were outside controlled airspace and under a Traffic Service; there was no separation minima required, consequently there was no loss of separation.

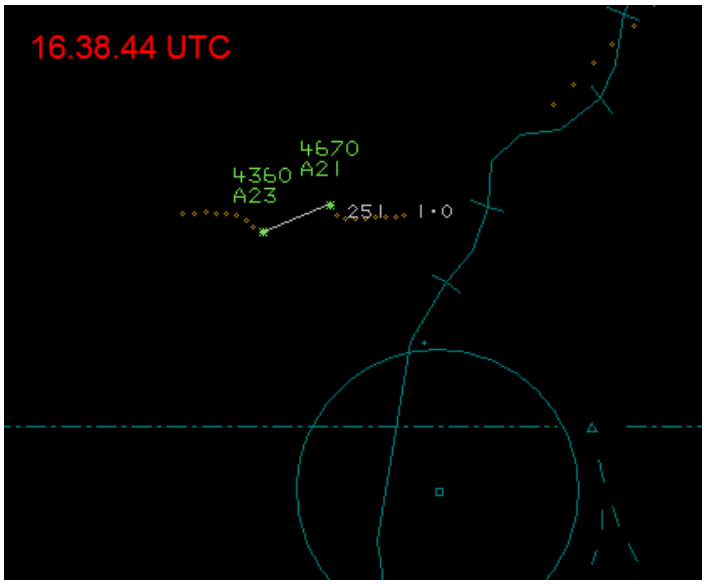


Figure 5 CPA.

At 1638:48 the controller transmitted "[A109 C/S] yeah you're clear of him now you can turn left when you are ready I guess."; the pilot replied "thank you".

UKAB Secretariat

The Dauphin and A109 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].

CAP 774[3] states that on a Traffic Service:

The controller shall pass traffic information on relevant traffic, and shall update the traffic information if it continues to constitute a definite hazard, or if requested by the pilot. However, high controller workload and RTF loading may reduce the ability of the controller to pass traffic information, and the timeliness of such information.

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.

Comments

JHC

The Dauphin is single-pilot-capable and was carrying out an IFR transit to RAF Northolt. It was equipped with the standard AVIDYNE TAS615 Traffic Avoidance System. Whilst positioning for an Instrument Approach to RAF Northolt, the pilot was given Traffic Information on the conflicting traffic at 5nm from the radar controller. The traffic was called again at 3nm, which coincided with the pilot receiving a TA. This caused him to feel suitably concerned with separation such that he manoeuvred the aircraft to the left. ATC then informed him that the traffic was now conducting a right-hand turn and suggested an avoiding action turn to the right. The pilot was IMC at the time but this may not have been made clear to the controller until the pilot received the second Traffic Information update at 3nm requesting the pilot to call visual. The controller then provided deconfliction advice to the pilot which was beyond the Traffic Service requirement.

The R/T transcript was somewhat difficult to fathom but it does indicate some non-standard R/T from both parties which could have led to confusion and assumptions on both sides. Had the pilot requested a more appropriate service for the conditions and planned regime of flight on initial contact, the scenario may not have developed into one forcing him to make the decision as to whether to manoeuvre or not whilst IMC with unassured and inaccurate data from the TAS.

Summary

An Airprox was reported when a Dauphin and an A109 flew into proximity near Denham at 1639hrs on Tuesday 15th January 2019. The Dauphin pilot was operating under IFR in IMC, the A109 was operating under VFR in VMC. Both pilots were in receipt of a Traffic Service, the Dauphin pilot from Northolt Approach and the A109 pilot from Luton Approach.

[1] SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.
[2] SERA.3210 Right-of-way (c)(1) Approaching head-on. MAA RA 2307 paragraph 13.
[3] Paragraph 3.5.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, the controllers involved and the appropriate ATC and 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 looked at the actions of the Dauphin pilot and noted that he was in receipt of a Traffic Service from Northolt Approach whilst being positioned for an ILS under IFR. At the time, the Dauphin was outside Controlled Airspace. The Board noted that Traffic Information was issued to the Dauphin pilot on the A109 at a range of 5nm; opposite direction, same altitude. However, although early Traffic Information was issued, the Dauphin pilot initially decided to continue his track and altitude towards the conflicting aircraft **(CF2**). Members noted that the Traffic Information was then updated at a range of 3nm, which coincided with the Dauphin pilot receiving a TA. At that point, he decided to make a left turn to avoid the traffic. The Board noted that the left turn was not in accordance with MAA RA 2307 which mirrors the SERA.3210 requirement for traffic approaching head-on to avoid each other by turning right. Members wondered why the pilot had decided to turn left, and the JHC member explained that the TAS information on his display had indicated that the other traffic was slightly right of his track. Members acknowledged that there are known inaccuracies in the display of relative bearings of traffic on TAS displays, and that helicopters are especially vulnerable to this misinformation; however, having previously received confirmatory information from the controller that the A109 was in the 12 o'clock at about 3nm range, the Board considered that the decision to turn left was ill-advised and had exacerbated the conflict when a right-turn would have resolved it in a more timely and effective manner. That being said, the Board acknowledged that the Dauphin pilot, operating in IMC, was understandably concerned about the proximity of the other traffic showing on his TAS display, especially because he was unable to see it visually **(CF3)**. Bearing in mind his flying conditions, the Board considered that the Dauphin pilot would have been much better served in requesting a Deconfliction Service instead of a Traffic Service; the controller would then have been able to issue him with an earlier avoiding action turn to remove the possibility of the aircraft coming into close proximity and, consequently, the Dauphin pilot's concern **(CF1)**.

For his part, it was only when the controller asked the Dauphin pilot to report visual with the traffic that he discovered that the Dauphin pilot was operating in IMC. Reacting to the Dauphin pilot's decision to turn left, the controller could see that this would place the Dauphin closer to the A109 and so he helpfully suggested that he should make a right turn. Furthermore, because of the continued close proximity of the two aircraft, the controller also suggested to the Dauphin pilot to make it an avoiding-action right turn. The Board commended the Northolt controller for acting beyond the requirements of a Traffic Service in this respect; his intervention had undoubtedly prevented the situation from deteriorating into a far more serious outcome.

Turning to the actions of the A109 pilot, members noted that he had contacted Luton Approach after departure from Elstree. Civil helicopter members commented that, in their experience, it would have been better to have contacted either Farnborough North LARS or Northolt Approach because either of these frequencies would probably have been quieter than Luton Approach, giving more time for the relevant controllers to closely monitor the A109's progress. This was reflected in the fact that, when the A109 pilot contacted Luton Approach, the two aircraft were about 7.5nm apart but Traffic Information was not passed until a reported range of 3nm. Noting this delay in the passing of Traffic Information, the Board surmised that the Luton controller was busy with other higher-priority tasks and had either not noticed the A109's proximity to the Dauphin, or had been unable to pass on the information as early as he would undoubtedly have wished. Controller members noted that the Luton controller had also then tried to contact Northolt to request coordination, but that the call had happened too close to CPA to be able to resolve the confliction.

In determining the risk, the Board quickly agreed that at CPA both aircraft were turning away from each other, passing 200ft vertically and 1.1nm horizontally apart. Although the pilots could not see each other's aircraft because the Dauphin was in cloud **(CF4)**, it was considered that although safety had

been degraded there had been no risk of collision due to timely and effective avoiding action being taken based on situational awareness. Accordingly, the risk was assessed as Category C.

Recalling their discussion of a previous Airprox (2019004) in that month's session, the Board noted the similarities regarding guidance on the use of and how to interpret TCAS/TAS information in the Class G context. Members agreed that the associated recommendation that the 'CAA and MAA provide advice and guidance on the interpretation and use of electronic conspicuity equipment' was pertinent also to this incident because of the way the Dauphin pilot had reacted to receiving a TA.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors (CF):

CF	Factor	Description	Amplification
	Flight Elements		
	• Tactical Planning and Execution		
1	Human Factors	• Communications by Flight Crew with ANS	Appropriate Surveillance-based ATS not requested by pilot
	• Situational Awareness of the Conflicting Aircraft and Action		
2	Human Factors	• Understanding/Comprehension	Pilot did not assimilate conflict information
3	Human Factors	• Perception of Visual Information	Pilot was concerned by the proximity of the other aircraft
	• See and Avoid		
4	Contextual	• Poor Visibility Encounter	One or both aircraft were obscured from the other

Degree of Risk: C.

Recommendation: CAA and MAA provide advice and guidance on the interpretation and use of electronic conspicuity equipment.

Safety Barrier Assessment[4]

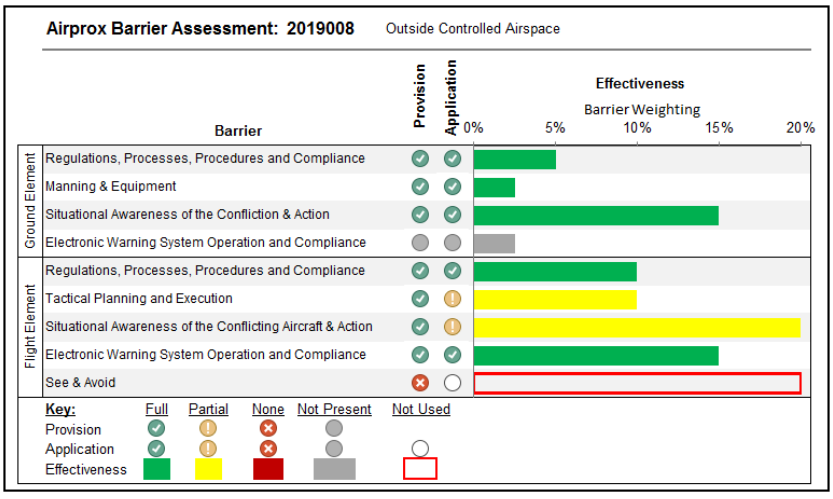
In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Flight Element:

Tactical Planning was assessed as **partially effective** because it would have been appropriate for the Dauphin pilot to have requested a Deconfliction Service when operating under IFR/IMC.

Situational Awareness and Action were assessed as **partially effective** because the Dauphin pilot did not take early action to avoid the A109 after receiving Traffic Information from ATC at a range of 5nm; instead, he waited until 3nm to react.

See and Avoid were assessed as **not used** because the Dauphin was in cloud.



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