

AIRPROX REPORT No 2010144

Date/Time: 26 Sep 2010 1019Z (Sunday)

Position: 5252N 00005W (170°
Coningsby 14nm)

Airspace: London FIR (Class: G)

Reporter: Waddington ATC

1st Ac 2nd Ac

Type: AW109 R22B

Operator: HQ Air (Ops) Civ Pte

Alt/FL: 500ft 550ft
RPS (1008mb) agl

Weather: NR VMC

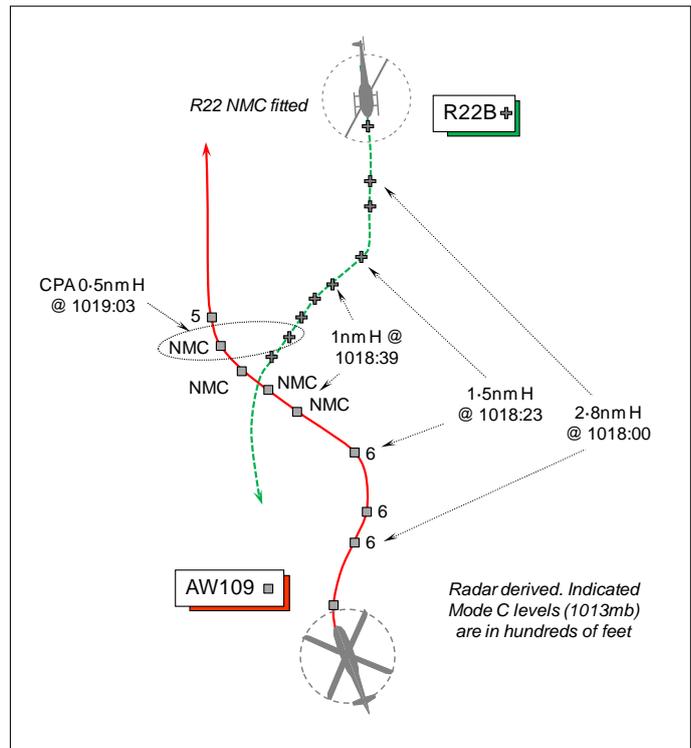
Visibility: 5km 1500m

Reported Separation:

NR Not seen

Recorded Separation:

0.5nm Min H



CONTROLLER REPORTED

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE WADDINGTON ZONE CONTROLLER (ZONE) and the ATCO I/C reports that the R22B was under a BS routing to Humberside, but due to poor weather conditions the transit was aborted and the helicopter diverted to Fenland. As the R22B turned southbound a northbound ac was seen S of the R22B displaying a Coningsby squawk. Coningsby APP telephoned requesting TI and was told the R22B was at 700ft routing to Fenland. Coningsby APP stated that their ac – the AW109 - was at 500ft. ZONE passed TI on the AW109 to the R22B pilot twice and on the second transmission the pilot advised he was unlikely to see the other ac and was turning R to avoid it, so she believed the confliction would be resolved. At this point Coningsby APP turned the AW109 to the L into direct confliction with the R22B. The two ac returns were seen to merge. Coningsby APP advised that the AW109 pilot saw the R22B pass down his right hand side, but the R22B pilot did not see the AW109. She stated that with deteriorating weather conditions she was reluctant to give an avoiding action vector to an ac that was flying well below the Sector Safe Height. The Risk was assessed as 'high (A)'.

THE AGUSTA 109 (AW109) HELICOPTER PILOT submitted his report about 8 weeks after the Airprox and so his recollection of the incident was 'a little hazy'. Flying VFR from Northolt to Coningsby, he was in receipt of a TS from Coningsby APP. The assigned squawk [A1740] was selected with Modes C and S on; TCAS I is fitted.

To the S of Coningsby the weather deteriorated due to drizzle and low cloud, but they were able to remain VFR easily at between 500-1000ft msd. About 10-15nm S of Coningsby heading 350° at about 1000ft RPS [BARNSELY 1008mb] a contact was displayed on his TCAS I equipment, but he could not recall if the other ac's altitude was shown. However, he does recall turning away from the contact to increase the distance just in case, as the other ac was not in RT contact with Coningsby APP. At no time did he see the R22B, he thought, so he was unable to estimate the minimum separation but he did not consider there had been a Risk of a collision.

UKAB Note (1): APP advised the AW109 pilot at 1018:42, "... he's just turned right against you as well he's just right 3 o'clock half a mile crossing right left", which was acknowledged "roger that [AW109 C/S]". Eleven secs later the AW109 pilot reported "...we're visual with that".

UKAB Note (2): The Coningsby weather was transmitted by APP to the AW109 pilot at 1014:55 as CC GREEN with 3700m NSW, BKN at 800ft.

THE R22B HELICOPTER PILOT reports he had planned to fly solo under VFR from Cambridge to Humberside and the weather conditions on the day were forecast as:

Waddington TAF: 2606/2624 35015KT 9999 SCT045 PROB40 TEMPO 2606/2610 SHRA
SCT020 BECMG 2610/2613 RA BKN020 TEMPO 2613/2624 7000 RA BKN012

Northbound passing Fenland on a direct track the weather started to reduce from a cloud base of 1000ft and slant visibility estimated to be 5km in haze and fine drizzle. On leaving Fenlands frequency, he established RT contact with Waddington ZONE on 127.35MHz and requested a BS; a squawk of A3601 was assigned, but Mode C is not fitted. Radio reception was poor, readability '3', he believes because of the low transit height. About 10nm S of Coningsby, he requested the local weather at Waddington. At a position 8nm S of Coningsby, he informed ZONE that the visibility had reduced to limits and he had elected to divert to a small helipad, 6nm NE of Boston at his home address. Within a very short space of time he decided the visibility was no better heading E and he informed the controller that he would be diverting to Fenland Aerodrome, which he had over-flown earlier and where he knew the weather was above minima. His workload was high due to the extremely poor visibility, checking the map for obstacles and power-lines on the reverse track and setting the Fenland frequency as the next frequency on the comms box, with the additional factor of poor reception with Waddington. Heading 170°, about 15nm S of Coningsby flying at 550ft agl and 90kt, ZONE then informed him of a helicopter 'on an intercept course', indicating the same level. He advised ZONE that he did not have visual contact with the other helicopter and was unlikely to do so because of the poor weather conditions. He asked for 'avoiding action instructions', but cannot remember the exact reply from Waddington. However, he does remember sensing the urgency in the tone of the controller's voice and understood that there was a real collision risk, but part of the message from ZONE was unreadable. Advising the controller that he was making an immediate turn to the R, he banked the helicopter to the R by about 20° into an avoiding action turn and rolled out on a heading of about SW. Shortly afterwards, ZONE asked if he had seen the other helicopter to which he replied 'negative'. He estimated his ac's height at the time of the incident as between 500-600ft agl. The Risk was not assessed.

THE CONINGSBY APPROACH (APP) CONTROLLER provided a comprehensive account stating that he was 1 of 2 controllers on duty during a weekend day shift tasked with providing a radar service in the event of a priority move. The Watchman primary ASR was out of service with ongoing serviceability issues so he was operating with SSR only.

During his shift, as part of a Station event, an AW109 from Northolt was inbound to Coningsby. The AW109 pilot free-called APP to the S of Coningsby heading N at 1000ft, but he could not recall the ATS provided. [UKAB Note (3): It was a TS with reduced TI SSR only.] The AW109 was identified, passed the Coningsby A/D information and asked to report visual with the aerodrome. He observed an ac contact – the R22B - displaying a Waddington squawk to the R of the AW109's 12 o'clock flying slowly southbound, so he asked Waddington ZONE for TI and ascertained that the traffic would pass close to the AW109. He passed TI to the AW109 pilot on the R22B contact more than once as the ac were closing. The conflicting traffic was still to the R of the AW109's nose so he suggested a turn to the NW [L] to avoid the contacts merging. Avoiding action was not given; however, the AW109 pilot took his suggested turn, but by that stage the AW109 pilot had already commenced a turn to the R, which had taken him through the R22B's 12 o'clock. Unfortunately, operating SSR only, the associated data update rate was slow. As the AW109 turned back onto a NW'ly heading the R22B commenced a turn to the R and the contacts merged. He continued to call the conflicting traffic throughout and the AW109 pilot reported visual with a helicopter, he thought passing about 200ft above his ac with no horizontal separation. Waddington ZONE called on the landline asking if the AW109 pilot had seen the R22B and why the AW109 had turned L when the 'Rules of the Air' require ac approaching head-on, or nearly so, to turn to the R to avoid each other. The landline was poor quality and he did not wish to dwell so took no further action.

HQ 1GP BM SM reports that the AW109 crew was in receipt of a TS from Coningsby APP and the R22B pilot in receipt of a BS from Waddington ZONE; Waddington ATC was unable to provide an RT tape transcript for the ZONE frequency.

The Coningsby SSR update rate is 8rpm, which equates to one sweep every 7½sec. The Waddington ASR update rate is 15rpm, which equates to one sweep every 4sec.

This Airprox occurred at a weekend when the respective ATSU's were operating at reduced manning. This is not considered a contributing factor to the Airprox as both controllers reported having a low workload and neither mention a lack of ability to control the situation due to workplace stresses.

ZONE reports passing TI to the R22B, although the flight was under a BS. This is a clear indication of a controller passing information under the duty of care principle. That TI was passed is corroborated by the R22B pilot and he acted on it by taking a turn to the R in accordance with the Rules of the Air.

APP had correctly identified the AW109 and placed the flight under a TS; although the original service request was unreadable, the pilot accepted the ATS offered by the controller, who correctly reduced the TS whilst operating SSR only with the Watchman ASR out of service. APP correctly applied the TS and advised the AW109 pilot that they were operating below the terrain sector safe height.

At 1016:54 Coningsby APP passed TI to the AW109 pilot about the R22B stating, *"traffic just right of your 12 o'clock, 5 miles, opposite direction, last known at 7 hundred feet."* APP liaised with Waddington ZONE at 1017:15, *"Coningsby request traffic information please, er Fosdyke Bridge southbound 3-6-0-1"*; ZONE replied, *"700 feet on the BARNESLEY"* and it was ascertained that ZONE's traffic was a helicopter. APP advised *"well I've got a helicopter just right of his 12 o'clock"* and ZONE responded at 1017:26, *"yeah I'm just about to call it"*. After APP added that the R22 was at 500ft, the call was terminated without any further course of action reached or implied. TI was passed to the R22B pilot about the AW109; APP updated the TI to the AW109 pilot at 1017:31, *"...previously reported traffic's now just right of your 12 o'clock, 4 miles, opposite direction 7 hundred feet a helicopter"*. From the Coningsby APP transcript it is clear that the pilot of the AW109 was concerned about the presence of the R22B and stated at 1017:44 – the start of the diagram - his intentions, *"roger we're ??? [inaudible word] we're just ??? [inaudible word] our conflicting track at the moment, we are going to turn right 20 degrees ?? [inaudible word]"*. At this point, the R22B is slightly right of the 12 o'clock of the AW109 at a range of 3-7nm. At 1017:51 APP advised the AW109 pilot, *"suggest a left turn onto about 320 degrees"* which is co-incident with the AW109's right turn appearing on radar. The turn back to 320° becomes evident after 1018:00. At this point the R22B is 2-8nm N of the AW109. Given the information presented to APP, with the associated slower update rate of the SSR compared to the Watchman ASR and the geometry between the ac at the time that the L turn was suggested, this was a reasonable solution to the problem. However, by offering a turn to the L the controller had not followed the Rules of the Air nor assimilated the possibility that the R22B pilot would turn R.

At 1018:23, the R turn by the R22B is evident on the radar recording with 1-5nm lateral separation. Shortly afterwards, ZONE contacted APP, who answered the landline call at 1018:28. ZONE asked *"can you turn...can you insist that yours turns right?"*; APP replied *"he's already on it isn't he, look"*. At this point (1018:37) lateral separation of about 1nm exists, with the R22B NNE of the AW109 tracking SW. At 1018:42, APP advised the AW109 pilot, *"I've just been speaking to Waddington and they've turned right against you as well and er, he's just in your 3 o'clock, half a mile, crossing right left."* Given the distance between the R22B and AW109 at this point, there is little that could have been achieved from this liaison call. Although the AW109 pilot's written report states that he did not see the R22B, he reported to APP on the RT at 1018:53, *"..we're visual with that"*.

In considering the respective update rates of the radars involved, it is clear that the faster update rate of the Waddington primary ASR will have provided ZONE with better SA. Unfortunately, due to the absence of an RT transcript for Waddington ZONE, it is impossible to establish ZONE's response to the R22B pilot when he asked for deconfliction advice. The pilot states that he sensed the urgency in

ZONE's voice "*and understood that there was a real collision risk*" although they could not remember what ZONE said and that part of the message was unreadable. However, this had prompted the R22B pilot to turn to the R, probably based on the last TI, which may have been passed before the AW109's L turn was evident. What is clear is that there was a significant difference in the data update rates of the radars available to the controllers involved and that the Coningsby controller considered it to be a factor.

The weather which both flights were subject to, and the pilots' interpretation of flight rules, enabled a situation where neither pilot was able to effect appropriate avoiding action in accordance with their obligations under the respective ATSS provided. Unfortunately, whilst done with the best of intentions based upon the radar information available to the controller at the time, in trying to provide a pragmatic resolution to the conflict, the APP controller's advice compromised the Rules of the Air, which served to decrease the separation when combined with the R22B's un-anticipated R turn.

This Airprox highlights that pilots should ask for an ATS appropriate to the prevailing met conditions and fully understand the limitations of the service being provided.

HQ AIR (OPS) comments that this incident highlights some good awareness of collision risks from all those involved and the issue described by HQ 1 Gp BM SM above unfortunately led to the miss distance being considerably less than it would otherwise been. The R22B pilot's use of the TI he received was entirely correct. Had the AW109 pilot continued his initial avoiding turn the issue would have been resolved. Whilst in this case the APP controller's advice reduced the miss distance, it was given with the best of intent and was followed by the AW109 pilot. He would have assumed it was based on better situational awareness than he had at the time and may have agreed with a TCAS I contact (acknowledging the azimuth accuracy limitations of TCAS). Furthermore, whilst it is possible to question the application of the Rules of the Air in this case, the controller was actually presented with a visual picture where a left turn should have generated maximum separation and avoided a turn through the other ac's extended flightpath. The Rules of the Air are simplistic and they do not define 'head-to-head' or provide such an additional stipulation. It is noted that the collision avoidance rules for Air Combat Training do provide this clarification. Even with the coincident turn by the R22B, the collision course had been broken and the subsequent TI provided by APP allowed the AW109 pilot to sight the R22B.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, transcripts of the relevant Coningsby frequency, radar video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

In Class G airspace 'see and avoid' prevails, but it can only cater for situations where the other ac is seen in time to take appropriate action. It was evident that this Airprox had resulted from an unfortunate chain of circumstances where the weather had played a significant part and was somewhat worse than that forecast. The AW109 pilot had wisely obtained a 'reduced' TS from Coningsby APP and the controller had provided a good level of TI about the approaching R22 from a range of 5nm. Importantly the controller had also liaised with Waddington ZONE whom he had identified as providing a service to the R22B pilot. With the benefit of the information from ZONE, APP then provided an update about the R22B, which he perceived to be to the right of the AW109's 12 o'clock and the pilot responded that he was going to turn 20° to the R. It was after the R turn had been initiated that APP then advised "*suggest a left turn..*" onto 320°, but this was without any prior notification to ZONE. Controller Members recognised the limitations of operating with SSR only and the slower data update had undoubtedly hampered the controller's appreciation of the situation and might have delayed detection of the R22B's R turn. Members agreed with the Command's view that with the benefit of TCAS 1 the AW109 pilot had the better SA; it was unfortunate, but understandable, that he chose to accept the controller's suggestion and turn L, probably in the belief that the controller had a better view of the geometry of the situation. The conflict would have been resolved if he had continued to the R. Members agreed that the controller had proffered this advice with the best of intentions albeit that it was not in accord with the Rules of the Air and, all things being

equal, compliance with 'the Rules' when offering avoiding action advice is plainly preferable. Nevertheless, there are situations where the opposite will apply and it was unfortunate that the controller's suggestion was based on limited data that was perhaps not giving him the true perspective.

Whilst diverting to Fenland, although only operating under a BS from ZONE, the R22B pilot benefited from a warning about the AW109 from the controller, but without an RT transcript it was not feasible to examine exactly what information was provided by ZONE. The R22B pilot reports that he had asked for 'avoiding actions instructions'; whilst a warning and advice on a suggested course of action might be proffered, at these heights, below the sector safe height and at the limits of radar coverage where only limited data might be available, controllers were unlikely to proffer an instruction.

The Board debated whether these ac could have been seen any earlier, as the pilots' recollections of the prevailing visibility varied somewhat. The R22B pilot had subsequently turned R in compliance with 'the Rules', based on the warning provided, although he had not sighted the AW109 at all. Despite his memory lapse, it was plain that the AW109 pilot had seen the small R22B, which are notoriously difficult to spot even in ideal conditions. However, the R22B was passing abeam about 0.5nm away to starboard when the AW109 pilot saw it, which the Board concluded was not unreasonable in the prevailing circumstances. Therefore, the Members agreed unanimously that the Cause of this Airprox was a conflict in Class G airspace. However, there was sufficient horizontal separation evinced by the radar recording to convince the Board that no Risk of a collision had existed.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A conflict in Class G airspace.

Degree of Risk: C.