

AIRPROX REPORT No 2012093

Date/Time: 26 Jun 2012 1516Z

Position: 5438N 00241W (3nm SE of Penrith VRP)

Airspace: LFA17/London FIR (Class: G)

Reporting Ac Reported Ac

Type: Merlin A109SP

Operator: HQ JHC Civ Comm

Alt/FL: 1700ft↑ 1500ft↓
QNH (1018hPa) QNH (1016hPa)

Weather: VMC NK VMC CLBC

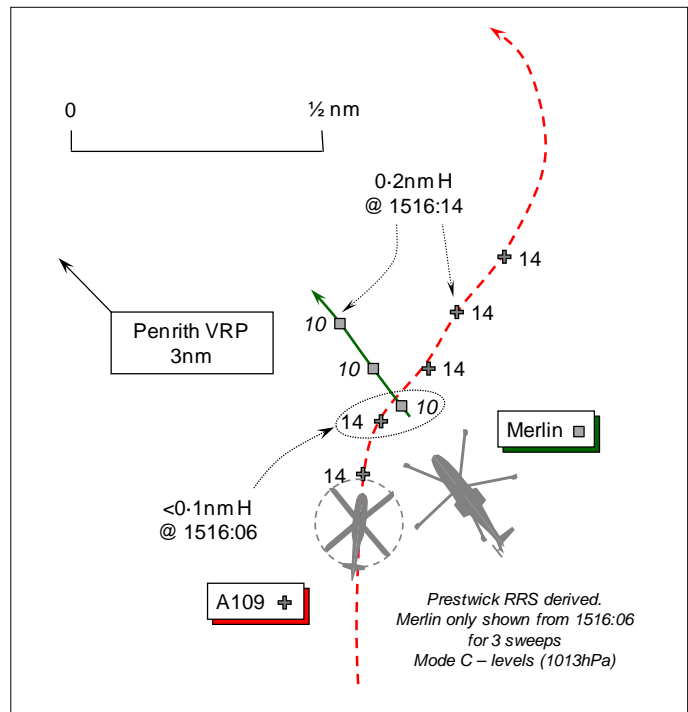
Visibility: 15km 5000m

Reported Separation:

300ft V/300m H 500ft V/1km H

Recorded Separation:

400ft V @ <0.1nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE AGUSTA WESTLAND EH-101 MERLIN HC3 PILOT reports he was operating on an evasion training (ET) sortie in the Appleby Valley in the vicinity of Penrith. The helicopter was crewed with two pilots, a pilot instructor in the cockpit jump seat and two crewmen in the cabin. Prior to the arrival of the participating Hawk ac they were conducting a cloud base check to assess the suitability of the weather conditions in the area for the planned ET. They assessed the main cloud base to be 2300ft amsl, and the visibility 'good', but in a band some 2-300ft below the main cloud base the visibility was severely reduced.

The ET element of the sortie was cancelled as the Hawk was unable to get into the area and the in-flight conditions were assessed to be marginal for ET. As per the TAC Climb SOP, the crew cleared the arcs above the helicopter before a climb was commenced. Heading 315° at 80kt, passing about 1000ft agl/1600ft amsl in the climb, the No1 crewman called 'break right, descend'. As the PF in the RH seat complied, other members of the crew saw an A109 helicopter about 300ft above and 300m away, heading directly towards them from their 10 o'clock. Having descended clear of the A109, they departed the area 'maintaining eyes' on the other helicopter. He assessed the Risk as 'high'.

Whilst maintaining a 'listening watch' with Carlisle APPROACH on 123.600MHz, they were not in receipt of an ATS. Because of their range and heights from Carlisle, only intermittent ATC transmissions were received and cockpit instruction was ongoing at the time; the UK LFS Common frequency was also being monitored. A squawk of A7000 was selected with Modes C and S on; TCAS is not fitted. The helicopter has an olive green colour scheme; the nav lights, upper and lower HISLs were on.

THE AGUSTA A109SP (A109) PILOT reports that he was inbound to a private helicopter landing site (HLS) just SE of Penrith before continuing on to Carlisle Airport. He was in receipt of a BS from Carlisle APPROACH on 123.600MHz and a squawk of A4677 was selected with Modes C and S on; TCAS I is fitted.

About 3nm SE of Penrith VRP, heading 010° at 100kt, as he was descending through 1500ft QNH approaching the HLS to land, he noticed a contact displayed on TCAS below him; a TA was enunciated. Simultaneously, his ground operator called on the RT to advise that another helicopter

was below him. He turned R as the Merlin flew 500ft beneath his helicopter and then moved out of his sight to his L. He continued to the R and descended, before making a L turn to approach the HLS; the Merlin then turned R and flew back to where he first spotted it, before turning R and flying back towards his HLS at about 250ft agl. At this point he was on long finals to the HLS from the N, the Merlin flew almost directly over the HLS, then turned R – E'ly - and flew off towards Appleby. He landed his A109, disembarked his passengers and then flew to Carlisle. He assessed the Risk as 'none'. His helicopter is coloured brown and grey; the two anti-collision beacons and the HSLs were on.

ATSI reports that the Airprox occurred 3nm SE of Penrith, within Class G Airspace. The Merlin was operating VFR in an area to the S of Penrith and was listening out on the Carlisle APP frequency on 123.6MHz, but not in receipt of a service. Carlisle ATC was not aware that the Merlin was operating in the area. The A109 was inbound VFR to a private HLS near Penrith to drop off a passenger before setting course for Carlisle. The Carlisle controller was providing approach control services, without the aid of surveillance equipment.

The Carlisle 1450Z METAR: 08002KT 9999 SCT023 17/15 Q1016=

At 1512:56, the A109 pilot contacted Carlisle APPROACH and reported from Manchester descending to drop one passenger at Penrith HLS, then inbound to Carlisle, passing 3500ft QNH, squawking A4677 and requesting a BS. The Carlisle controller agreed a BS and passed the QNH (1016hPa), with a request that the pilot report approaching the HLS, which was acknowledged by the A109 pilot. At 1513:22, the radar recording shows the A109 7nm SE of Penrith, tracking N and passing FL34 in the descent. The Merlin is shown converging in the A109's 2 o'clock position at a range of 3.8nm and passing FL19 in the climb.

At 1514:19, radar shows the two ac converging at a range of 1.9nm. The Merlin was descending passing FL11 and the A109 was descending through FL26. The two ac continued to converge on their respective tracks towards Penrith VRP. [The Merlin then fades on the recording and is not shown again until 1516:06], moments before the respective tracks cross, when the A109 had turned R onto a NE'ly track, at FL14 – about 1490ft QNH (1016hPa), with the Merlin shown in the A109's 12 o'clock at less than 0.1nm crossing from R – L at FL10 – about 1090ft QNH (1016hPa). The next sweep of the radar shows the two ac have passed maintaining their respective levels. The Merlin later fades from radar and the A109 becomes intermittent. The relative proximity of the two helicopters is not shown as the A109 approaches the HLS.

At 1519:41, a third helicopter called Carlisle – an AS365 - departing the Penrith area for a position in the Newcastle area. At 1520:22, the A109 reported airborne from Penrith inbound to Carlisle and visual with the AS365 helicopter. The A109 pilot asked the Carlisle controller if there had been a Merlin helicopter on frequency in the Penrith area; the controller responded 'negative'. The A109 continued inbound to Carlisle and landed without further incident.

The A109 pilot was in receipt of a BS from the Carlisle controller who was not aware of the Merlin helicopter and was not therefore able to provide any general information or warning to the A109 pilot. Although the Merlin helicopter pilot's written report indicated he was listening out on the Carlisle Approach frequency, it was not clear if the Merlin pilot was aware of the RT calls made by the A109 pilot approaching Penrith.

CAP774, UK Flight Information Services, Chapter 2, Page 1, Paragraph 1, 3 and 5, state:

'A Basic Service is an ATS provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights. This may include weather information, changes of serviceability of facilities, conditions at aerodromes, general airspace activity information, and any other information likely to affect safety. The avoidance of other traffic is solely the pilot's responsibility.'

Pilots should not expect any form of traffic information from a controller/FISO, as there is no such obligation placed on the controller/FISO under a Basic Service outside an Aerodrome Traffic Zone (ATZ), and the pilot remains responsible for collision avoidance at all times. However, on initial contact the controller/FISO may provide traffic information in general terms to assist with the pilot's situational awareness. This will not normally be updated by the controller/FISO unless the situation has changed markedly, or the pilot requests an update. A controller with access to surveillance-derived information shall avoid the routine provision of traffic information on specific aircraft, and a pilot who considers that he requires such a regular flow of specific traffic information shall request a Traffic Service. However, if a controller/FISO considers that a definite risk of collision exists, a warning may be issued to the pilot.'

CAP774, UK Flight Information Services, Chapter 1, Page 1, Paragraph 2, states:

'Within Class F and G airspace, regardless of the service being provided, pilots are ultimately responsible for collision avoidance and terrain clearance, and they should consider service provision to be constrained by the unpredictable nature of this environment...'

The Airprox occurred in Class G airspace when the Merlin crew, listening out on the Carlisle APPROACH frequency, became concerned about the relative position and proximity of the A109, which was making an approach to a private HLS near Penrith. The Carlisle controller was not aware of the Merlin helicopter and was unable to provide any generic information or warning to the A109 pilot under the BS.

HQ JHC comments that this Airprox appears to have arisen because the track of the Merlin whilst climbing from low level after the crew had conducted a thorough lookout, has aligned with the A109's track descending from a higher altitude possibly with poorer visibility. The poorer visibility reported by the Merlin in the 200-300 ft block below the cloud base, despite the thorough lookout would have made it very difficult to spot the A109 as it was descending from altitude. Additionally, it is clear that the fitting of a collision warning system (CWS), which is being actively pursued by this HQ, could have significantly helped to prevent this incident.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, transcripts of the relevant RT frequencies, radar video recordings and reports from the appropriate ATC and operating authorities.

The Merlin PIC reported he was operating autonomously and not in receipt of any ATS, whilst listening-out on the same Carlisle APP frequency as that used by the A109 pilot. A helicopter pilot Member opined that there was little to be gained from not 'checking-in' with APP and merely listening-out on the frequency; it was evident that the Merlin crew's passive 'modus operandi' had not enabled them to detect the presence of the A109 helicopter from listening to any of the transmissions between the A109 pilot and Carlisle APP. The latter was providing a BS to the A109 pilot as he approached his HLS and a Member postulated that the Merlin crew had most probably not received any of these transmissions because of terrain masking at low altitude. A helicopter pilot Member contended that although the Merlin was not inbound to Carlisle, if the crew had been able to contact Carlisle on the RT, an informative call announcing that they were operating in the vicinity would have been good airmanship. Potentially, such a call might have been heard directly by the A109 pilot or engendered generic TI from Carlisle APP to the A109 pilot about the Merlin and vice versa, thereby assisting both pilots when operating under VFR with their responsibilities to 'see and avoid' other ac in Class G airspace. Without any radar Carlisle APP was not aware of the Merlin at all, moreover, pilot Members were keen to point out that it was more important to maintain an effective look-out scan - many ac could potentially be operating in the area without any RT communication with Carlisle ATC and the same terrain masking issue might similarly have prevented the reception of generic TI from the controller to the Merlin crew.

Although the Merlin pilot reported that his crew had cleared the arcs above their helicopter, they did not see the A109 in the reported good visibility before the climb was commenced. The Merlin crew was executing a 'tactical climb', which a military helicopter pilot Member stressed was quite a dynamic manoeuvre, when the No1 crewman spotted the A109 and called to the Merlin PF to break R and descend. Whilst the A109 was evidently 'there to be seen', the latter's pilot had reported independently that the visibility was 5000m and in accord with the Merlin pilot's account that the visibility was severely reduced just below the main cloud base. The Board noted the lack of any CWS in the Merlin to supplement the crew's lookout and the Members agreed that part of the Cause was a late sighting by the Merlin crew.

Conversely, the A109 pilot had the benefit of a TCAS 1 fitted to his helicopter and a TA had forewarned him of the presence of another ac in the vicinity as he was descending, just before the pilot also received a call on the RT from his ground operator to advise that the Merlin was beneath him. The intermittent nature of the recorded radar data did not clearly illustrate the Merlin's position or level moments before the two ac flew into close quarters; it was feasible that the A109 was behind and to port of the Merlin in a slow overtake given the reported speeds of the two ac, but from the final geometry it seems that the descending A109 pilot was required to 'give way' to the Merlin below and to his R. The A109 pilot reports he had turned R as the Merlin flew 500ft beneath his helicopter just before it disappeared from view to port and the Board concluded that this late sighting was also part of the Cause.

The Merlin pilot's reported avoiding action descent is not apparent on the available recorded radar data and so it might have occurred before 1516:06, when the Merlin is shown in close proximity to the A109 suggesting to the Board a slightly greater first sighting distance than the Merlin pilot's reported 300m range. The radar recording evinces 400ft vertical separation from the ac's respective unverified Mode C, as the Merlin maintained 1000ft (1013hPa) and underflew the A109 that was maintaining 1400ft (1013hPa) at this point, exactly between the Merlin pilot's report of 300ft and the 500ft stated in the A109 pilot's account. This convinced the Board that despite the late sightings, the Merlin pilot's swift response to his crewman's warning before they had closed to 0.1nm, coupled with the A109 pilot's sighting of the Merlin below following the TCAS TA, had removed any Risk of a collision in the circumstances conscientiously reported here.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Late sightings by the Merlin crew and the A109 pilot.

Degree of Risk: C.