New MH370 Report Reveals Radar, Procedural Failings

AinOnline
Chris Pocock

This calculation of the flight path of MH370 after it disappeared from secondary radar screens, derives from an analysis of recorded traces of primary radar returns.

One year after the disappearance of Malaysia Airlines Flight 370, a factual document issued by the Malaysian Ministry of Transport to fulfill its obligations under ICAO Annex 13 has shed new light on the partial primary radar traces obtained after MH370’s secondary surveillance radar mode ceased to function. It also exposed failings in communications and procedures at Kuala Lumpur (KUL) Area Control Centre (ACC) and Malaysia Airlines (MAS) Operations Control Center (OCC). The director-general of the country’s Department of Civil Aviation (DCA), Dato Azharuddin Abdul Rahman, elaborated on the findings with a long presentation during a conference at the Langkawi International Maritime and Aerospace Exhibition (LIMA) last week.

The contention that MH370 “turned back” over the South China Sea, crossed the Malaysian peninsula, turned again over Penang and headed over the Andaman Sea stems from the analysis of primary radar recordings from the ATC radars at the KUL ACC and at Kota Bahru on the east coast of Malaysia, as well as apparently the air defense radars operated by the Royal Malaysian Air Force (RMAF) south of Kota Bahru at Jerteh, and on Penang Island off the west coast. However, the Annex 13 report does not identify the military radars, continuing a pattern of withholding sensitive defense information made evident during government briefings at the time of the disappearance. Four days after MH370 disappeared, it became evident that the RMAF air defense system had failed to identify and track MH370 in real time, causing
authorities to limit the search to the South China Sea until then. The commander of the RMAF, Gen Rodzali Daud, has since been succeeded by Gen Roslan Saad.

Selex and predecessor company Alenia Marconi Systems supplied the radars. They have supplied five of the six RMAF air defense radars, and most of Malaysia’s ATC radars, radios and control centers. To supply the ATC equipment, Selex Systemi Integrati has participated in a joint-venture partnership with Malaysian company Advanced Air Traffic Systems (AAT) since 1994.

The crucial last radar traces of what is said to be MH370 were recorded by the relatively modern RAT-31DL radar on Penang, controlled by RMAF personnel at nearby Butterworth airbase on the mainland. From replayed recordings, investigators have concluded that MH370 headed northwest toward waypoints Vampi and Mekar, which lie at the limit of the Penang radar’s range. Azharuddin said at LIMA that neighboring nations “have confirmed from their radar that MH370 did not fly over their airspace.” When queried by AIN how he could assert that with any certainty, given the poor performance of Malaysia’s own radar operators, the DCA director-general declined to comment.

The new report also reveals that MAS OCC misled KUL ACC by suggesting that the aircraft was still flying, until admitting two hours after it disappeared that they were relying on the Flight Explorer application that was not providing real-time tracking. A source close to MAS told AIN that the OCC did its best to contact MH370 via the satcom systems on other company aircraft during that time. The report notes that the battery powering the underwater locator beacon (ULB) of the flight data recorder (FDR) had expired. MAS admitted that it did not replace the device due to “a maintenance scheduling oversight,” but noted that the FDR was co-located on the aircraft with the cockpit voice recorder (CVR), whose ULB battery had not time-expired.

Not until four hours after the disappearance did KUL ACC alert the KUL Aeronautical Rescue Coordination Centre (ARCC). Another hour passed before the ARCC issued the distress message that launched the search for MH370. The report also reveals that the watch supervisor at KUL ACC was asleep at 0523L, even though his staff had been dealing with a missing airliner situation for the preceding three hours.

Azharuddin told the LIMA conference that the search of the priority area in the southern Indian Ocean specified after analysis of the MH370’s satcom “handshakes” is 50 percent complete and could conclude in May. He described the difficulties of the underwater search in some detail and did not express optimism. He listed eight lessons learned, including the need for real-time global tracking of commercial aircraft; a review of ATC procedures on handing over aircraft between flight information regions; improved civil/military airspace coordination; an increase beyond 120 minutes in the recording time of CVRs; an extension of the transmission life of the ULBs in FDRs and CVRs; a review of emergency response plans; and improvements in the handling of the media and the next-of-kin.