MALAYSIA AIRLINES FLIGHT MH370

At the request of the Malaysian Government, Australia is leading the search for missing Malaysia Airlines Flight MH370. All the available data indicates the aircraft entered the sea close to a long but narrow arc of the southern Indian Ocean.

The underwater search is focused on a high priority area of up to 60,000 square kilometres of ocean floor—roughly the size of Tasmania.

The complexities surrounding the search cannot be understated. It involves vast areas of the Indian Ocean with only limited known data and aircraft flight information. While it is impossible to determine with certainty where the aircraft may have entered the water, all the available data and analysis indicates a highly probable search area close to a long but narrow arc of the southern Indian Ocean.

Cautious optimism in search for MH 370
By Martin Dolan, Chief Commissioner
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On 26th June, Deputy Prime Minister Warren Truss announced a new high priority underwater search area for the missing Malaysia Airlines Flight MH370. An international effort led by the ATSB is now mapping and will soon start searching this area.

The new search area is about 60,000 square kilometres in size and is located in the Indian Ocean, about 1800 km west of Perth, Western Australia. As with previous search areas, it is located along the seventh arc—a thin but long line which includes all the possible points where the last known communication between the aircraft and a communications satellite could have taken place.

Since the aircraft went missing, a specialist working group has been analysing the limited information available. The group has included specialists from around the globe, with representatives from the Air Accident Investigation Branch of the United Kingdom, the Australian Transport Safety Bureau and the National Transportation Safety Board of the United States, along with technical advisers including Inmarsat, Thales, Boeing and Australia’s Defence Science and Technology Organisation.

The group’s work has shown how much international capability and expertise can be brought to bear when working on a highly complex problem in international aviation safety.
The group have been analysing signals from MH370’s system for transmitting monitoring and maintenance data – seven ‘handshakes’ between the aircraft and a ground station through a single satellite. Those handshakes were never intended to provide information about the location of the aircraft or the manner in which it was travelling. They do not report the aircraft’s speed, its height, or the direction in which it was travelling.

Instead, the analysts have drawn information from the physical characteristics of the signals themselves. They had already confirmed the range of points that the aircraft could have been at given times: the arcs that have been discussed previously.

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By analysing the radio frequency of the signals and modelling the result, they have been able to estimate the possible speed and direction of the aircraft as it crossed each arc. It has been, as you can imagine, an incredibly complex task. Even a minor change had significant implications for the calculations. Despite these challenges, the specialists have determined all the more probable paths that the aircraft could have taken. The result is an area, around 200,000 square kilometres, along the seventh arc. From there, they have identified the new high priority search area of 60,000 square kilometres.

It will not be a quick or easy task to search the sea floor, but the work has already begun. The Chinese survey ship Zhu Kezhen and the Australian-contracted vessel Fugro Equator are conducting a bathymetric survey of the area. The Government of Malaysia has announced they will be joined by another vessel, the KD Mutiara. They are mapping the sea floor in preparation for the next phase of the search, in which the 60,000 square kilometres will be surveyed in detail.

To conduct a search like this requires specialist services, and the Australian Government has received tenders from organisations to conduct this work. In the coming weeks these tenders will be reviewed, and contract arrangements will be worked out. The capability resulting from the tender will be supplemented by two Malaysian-provided vessels and search equipment and the underwater search will begin. We anticipate that this intensive search will take up to 12 months to complete.