



INFORMATION PAPER

**SECOND HIGH-LEVEL SAFETY CONFERENCE 2015 (HLSC 2015)
PLANNING FOR GLOBAL AVIATION SAFETY IMPROVEMENT**

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Theme 1: Reviewing the current situation

Topic 1.2: Emerging safety issues

AUSTRALIA'S ROLE IN THE SEARCH FOR MH370

(Presented by Australia)

SUMMARY

The primary purpose of this information paper is to share Australia's experiences in coordinating its support for the search for missing Malaysia Airlines flight MH370, and to detail lessons learned that may be of use in future international civil aviation coordination operations.

1. INTRODUCTION

1.1 On 8 March 2014, Malaysia Airlines flight MH370 disappeared en route from Kuala Lumpur to Beijing. On 17 March 2014, Australia accepted Malaysia's request to assume responsibility for the coordination of the search effort within the Australian Search and Rescue Region (SRR) in the southern Indian Ocean. Australia's obligations under Annex 12 — *Search and Rescue* to the Chicago Convention for aeronautical search and rescue (SAR) is the responsibility of the Australian Maritime Safety Authority (AMSA).

1.2 The search for MH370 is the biggest search operation in history – a highly complex operation involving vast areas of ocean with only limited known data and aircraft flight information. The search is an impressive example of international cooperation, involving a range of assets and expertise from multiple disciplines from around the world.

1.3 Until Australia announced the transition to search and recovery efforts on 24 March 2014, AMSA coordinated air and surface search efforts for floating material from the aircraft with the valuable assistance of many Australian and international civil and military organizations.

1.4 From that date, the Australian Transport Safety Bureau (ATSB) became the lead agency under Annex 13 — *Aircraft Accident and Incident Investigation* to the Chicago Convention for operations in the Australian SRR. AMSA continued to coordinate search operations for floating material until 28 April 2014, when the Australian Prime Minister, the Honourable Tony Abbott MP, announced that the search would transition to an intensified underwater search.

1.5 AMSA and ATSB jointly determined a surface search area strategy, correlating information from a Joint Investigation Team (JIT) located in Malaysia, comprising international specialists and other government and academic sources. AMSA hosted a working group that complemented the JIT, provided additional specialist advice on the likely movement of floating material with weather and ocean currents, and incorporated advice from the United States National Transportation Safety Board and United States Coastguard. Together, these sources permitted AMSA to be fully informed on the optimum search areas.

2. DISCUSSION

2.1 For the 42 days from the disappearance of the aircraft until 28 April 2014, the search for floating material within the Australian SRR comprised:

- a) 345 flight sorties;
- b) 3 177 total flight hours;
- c) cumulative search area of 4.7 million square kilometres;
- d) 28 search aircraft used, both civil and military, from Australia, People's Republic of China, Japan, Malaysia, Republic of Korea and the United States; and
- e) civil merchant ships and military ships from Australia, China, Malaysia, the United Kingdom and the United States.

2.2 On 17 March 2014, Australia agreed to Malaysia's request to assume responsibility for the coordination of the search effort for the aircraft within the Australian SRR. In accordance with Annex 13, Malaysia remains the State responsible for the investigation of the occurrence involving MH370.

2.3 On 25 March 2014, Prime Minister Abbott formally announced the transition to a search and recovery operation.

2.4 Prime Minister Abbott established the Joint Agency Coordination Centre (JACC) on 30 March 2014 as the centralized voice of the Australian search operations. The JACC will continue to coordinate search efforts, international liaison and media communications until the search is completed.

2.5 The JACC's role is complex, requiring cooperation and coordination across State and federal government agencies, as well as with the governments of other countries and Malaysia Airlines. The JACC also works to ensure that the public and other stakeholders, particularly families, are well-informed of the progress of the search for MH370, and fields queries from a wide range of media organizations.

2.6 The JACC, with significant input from the ATSB, Australian Federal Police and Department of Foreign Affairs and other agencies have made significant progress in arrangements relating to the search, including a Memorandum of Understanding between Australia and Malaysia and a number of supplemental arrangements.

2.7 On 28 April 2014, Prime Minister Abbott announced that the search for MH370 would move to a new intensified underwater search.

2.8 At the 5 May 2014 Tripartite Meeting, Australia, Malaysia and China agreed that the search for MH370 involved three major stages:

- a) reviewing all existing information and analysis to define a priority search zone of up to 60 000 square kilometres along the seventh arc in the southern Indian Ocean;
- b) conducting a bathymetric survey to map the sea floor in the defined search area; and
- c) acquiring the specialist services required for a comprehensive search of the sea floor in that area.

2.9 Following review of all information, the ATSB defined a priority search zone based on independent analysis of satellite, radar and aircraft performance data from many international experts. The analysis indicates the aircraft entered the sea close to a long but narrow arc in the southern Indian Ocean. This arc has been the focus of the search efforts since late March 2014. For more information on definition of the search area, please refer to the ATSB reports:

<http://www.jacc.gov.au/media/reports/2014/august/report001.aspx>
<http://www.jacc.gov.au/media/reports/2014/october/index.aspx>

2.10 Recognizing that the necessary specialist equipment was only available commercially, the ATSB conducted major procurements for bathymetric survey and underwater search work.

2.11 Between May and December 2014, bathymetry survey vessels *Fugro Equator* and *Zhu Kezhen* scanned the sea floor with multibeam sonar to gather detailed, high-resolution data as part of a bathymetric survey of the priority search zone.

3. NEXT OF KIN

3.1 The JACC works closely with Malaysia, China and Malaysia Airlines to ensure that Next of Kin are advised early in relation to all search developments.

3.2 Australia, Malaysia and China have agreed to a Reception Plan, in the event of a visit to Perth by the Next of Kin. The agreement was further formalized at the 28 August 2014 Tripartite meeting, with the co-signing of a Supplemental Arrangement on Next of Kin between Australia and Malaysia.

3.3 The JACC maintains a website, public email inbox and telephone hotline, as well as publishing a weekly operational update in English and Mandarin. The JACC also engages directly with Next of Kin advocacy groups.

4. CURRENT ACTIVITIES

4.1 The search for MH370 continues to progress, with about 208 000 square kilometres of the search area having now been analysed and mapped. The ATSB has utilized the data from the bathymetric survey to plan the underwater search, which commenced in October 2014. The plan includes search timings, methods, procedures, safety precautions and the initial search areas for the various vessels.

4.2 In addition to locating the aircraft, the underwater search aims to map the MH370 debris field in order to identify and prioritize the recovery of specific aircraft components, including flight recorders, which will assist with the Malaysian investigation.

4.3 Four search vessels are currently tasked to the search; the *Fugro* vessels *Equator*, *Discovery* and *Supporter* are jointly funded by Australia and Malaysia, while *GO Phoenix* has been contracted by Malaysia. *Fugro Supporter* is equipped with an autonomous underwater vehicle that will be used to scan those portions of the search area that cannot be searched effectively by the towed sonar equipment on the other search vessels.

4.4 As at 15 January 2015, over 14 000 square kilometres of the seafloor have been searched. Assuming no significant delays with the vessels, equipment or from the weather, the current underwater search area may be largely completed around May 2015.

5. CONCLUSION

5.1 The conference is invited to note the information contained in this paper.

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