



International Civil Aviation Organization

**Second Meeting of the Asia Pacific Accident Investigation Group
(APAC-AIG/2)**

(Hong Kong, China, 27-28 May 2014)

Agenda Item 2 Report on recent accident/incident investigation related developments and activities

DEVELOPING DATABASE FOR UNDERWATER SEARCH RESOURCES IN ASIA

(Presented by France)

SUMMARY

This paper is proposing to develop a database of members of Accident Investigation Authorities (AIA) having experience of underwater search operations or owning underwater search equipment in Asia.

1. INTRODUCTION

1.1 The search for Malaysia Airlines Flight MH 370 is still continuing. There have, since 1969, been fifty-two accidents over water. However, thirty-eight of these occurred from 1996 onwards. Since 1 June 2009 and the accident of AF447, ten recorders have not been recovered from the eleven accidents over water including the ones from Malaysia Airlines Flight MH 370.

1.2 Underwater searches for Underwater Locator Beacon (ULB) signals have occurred almost twice a year since 1996. The list of past underwater recovery operations is included in the Appendix. There is a need to share experience and lessons learned from States that were recently involved in accidents.

1.3 One way to share experience is to create a database of members of Accident Investigation Authorities (AIA) having experience of underwater search operations, owning acoustic underwater search equipment or wishing to learn the best way to accomplish underwater searches for ULBs.

2. DISCUSSION

2.1 A list of potential tasks to be undertaken by a list of members of Accident Investigation Authorities (AIA) having experience of underwater search operations or owning underwater search equipment in Asia is detailed herewith.

2.2 As a first step, the group may focus on acoustic underwater searches for ULBs.

2.3 An associated mailing list could be reached through a single email address similar to "ocean@xxx.xxx". An Asian AIA should be able to host this distribution list.

2.4 The group should facilitate the sharing of experience and lessons learned from States recently involved in accidents where underwater searches could have facilitated underwater searches to all other States.

1. Defining the role of each Accident Investigation Authorities in the mailing list
2. Providing advice for sending resources and equipment
3. Developing methodology of underwater search and ULB signal detection
4. Listing the suitable equipment available
5. Determining the capabilities and limitations of use for each equipment
6. Listing contacts in the industry
7. Attributing tasks for technology monitoring
8. Encouraging States to run practice exercises involving some members of the group

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the information included on this Working Paper.

4. APPENDIX

4.1 List of past underwater recovery operations

	Accident Date	Aircraft type	Operator	Location	Depth (m)	Means	Approx Cost (M USD)	Remarks
1	06-Feb-96	B757	Birgenair	Off Puerto Plata, Dominican Republic	2200	ROV	1,5	
2	11-May-96	DC9	ValuJet	Everglades, Florida USA	2	Divers	1	FDR ULB inop. CVR's ULB detach
3	17-Jul-96	B747	TWA	Off Long-Island, USA	40	Divers	10	
4	02-Oct-96	B757	Aero Peru	Off Pasamaya Peru	230	ROV		One ULB detached
5	23-Nov-96	B767	Ethiopian Airline	Off Moroni, Comoros Islands				
6	19-Dec-97	B737	Silkair	Off Palembang Indonesia	8	Divers		Both ULBs detached
7	18-Mar-98	Saab340	Formosa Airlines	Off Hsinchu Taiwan				
8	02-Sep-98	MD-11	Swiss Air	Off Halifax Canada	55	Divers	25	ULBs almost detached
9	31-Oct-99	B767	Egyptair	Off Nantucket USA	75	ROV	3,5	CVR's ULB detached
10	13-Jan-00	Short 360	Avisto	Off Marsa Brega, Libya	38	Divers		
11	30-Jan-00	A310	Kenya Airways	Off Abidjan, Ivory Coast	50	Various	0,06	
12	31-Jan-00	MD-83	Alaska Airlines	Off Los Angeles, USA	200	ROV	2,5	
13	03-Feb-00	B707	Arabian Air Trans	Lake Victoria Tanzania	0			
14	23-Aug-00	A320	Gulf Air	Off Muharraq Bahrain	3	Divers		Both ULBs detached

	Accident Date	Aircraft type	Operator	Location	Depth (m)	Means	Approx Cost (M USD)	Remarks
15	07-May-02	MD-82	China Northern	Off Dalian, China	10	Divers		
16	25-May-02	B747	China Airlines	Off Pengu Island, Taiwan	20	Divers/ROV	11,8	
17	21-Dec-02	ATR72	Trans Asia	Off Pengu Island, Taiwan	60	ROV	2,5	CVR's ULB detached
18	03-Jan-04	B737	Flash Airlines	Off Sharm el-Sheikh, Egypt	1030	ROV	1	CVR's ULB detached
19	06-Aug-05	ATR72	Tuninter	Off Palermo, Italy	1440	ROV	1	
20	02-May-06	A320	Armavia Air	Off Sochi, Russia	505	ROV		
21	01-Jan-07	B737	Adam Air	Off Pare Pare, Indonesia	1800	ROV	4	
22	04-Jan-08	LET L410UVP	Transaven	Off Los Roques, Venezuela	Not known			Aircraft never recovered
23	09-Aug-07	DHC6	Air Moorea	Off Moorea, French Polynesia	670	ROV	2	
24	09-Apr-08	Metro III	Avtex Air Services	Off Sydney, Australia	109	ROV	0,45	FDR's ULB detached
25	27-Nov-08	A320	XL Airways	Off Perpignan, France	40	Divers	0,5	CVR's ULB detached
26	15-Jan-09	A320	US Airways	Hudson river, USA	20	Rigged	0,1	
27	01-Jun-09	A330	Air France	Atlantic Ocean	3900	ROV	32	CVR's ULB damaged
28	30-Jun-09	A310	Yemenia	Off Moroni, Comoros Islands	1200	ROV	2,5	Both ULBs detached
29	18-Nov-09	IAI 1124A	Pel-Air Aviation	Off Norfolk Islands, Australia	50			Deemed too expensive to recover
30	25-Jan-10	B737	Ethiopian Airlines	Off Beirut, Lebanon	45	Divers		CVR's ULB detached
31	28-Jul-11	B747-48F	Asiana Airlines	Off Jeju, South Korea	87	ROV	13.2	Fire onboard ULBs not heard
32	26-Nov-12	Embraer 120	Inter Iles Air	Off Moroni, Comoros Islands	Not known			Aircraft never recovered
33	13-Apr-13	B737	Lion Air	Off Bali, Indonesia	0	Divers		
34	10-Apr-13	Beech 1900	Sahel Air Service	Off Sao Tome and Principe	Not known			Aircraft never recovered
35	16-Oct-13	ATR72	Lao Airlines	Mekong Pakse Laos	12	Divers		
36	19-Nov-13	Learjet 35A	AERO J.L.	Gulf of Mexico USA	30	Divers		
37	03-Mar-14	Falcon 20	Iran CAO	Off Kish, Iran		Divers		
38	08-Mar-14	B777	Malaysian Airlines	Indian Ocean?	Not known			Not yet recovered