

9<sup>th</sup> Meeting of Asia Pacific Regional Aviation Safety Team

**Report on  
Works of Asia Pacific  
Accident Investigation Group  
(APAC-AIG)**

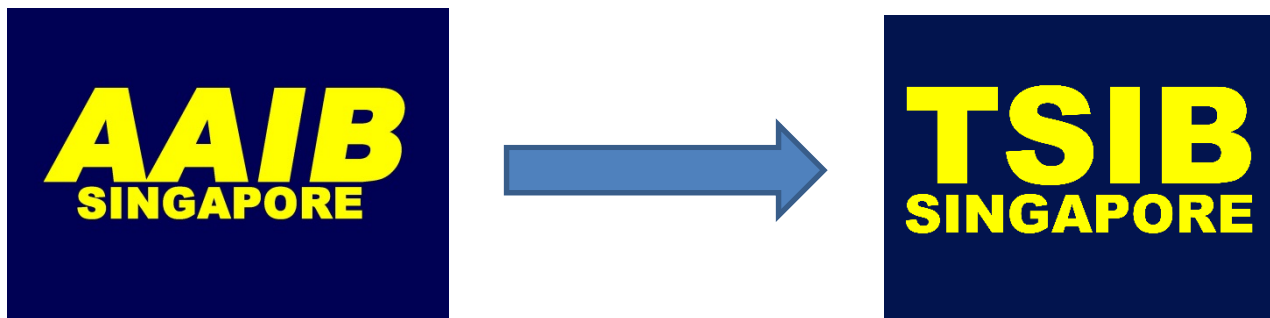
By CHAN Wing Keong

Chairman, APAC-AIG and Director, TSIB Singapore

1 November 2016

## For Information

- Air Accident Investigation Bureau of Singapore (AAIB) has been restructured to form the new Transport Safety Investigation Bureau (TSIB) on 1 August 2016.
- The TSIB will conduct investigations into air and marine accidents and incidents, independently of and separately from any judicial or regulatory proceedings.



# Agenda

- Part I: Update of APAC-AIG Activities (WP/7)
- Part II: Improvement of USOAP AIG EI Rates of States/Administrations (WP/8)

**Part I**  
**Update on APAC-AIG Activities**  
**(WP/7)**

# Meetings of RASG-APAC, APRAST & APAC-AIG

RASG-APAC	APRAST	APAC-AIG
		1 <sup>st</sup> – 18-19 Sep 13
	4 <sup>th</sup> – 22-25 Apr 14	
		2 <sup>nd</sup> – 27-28 May 14
	5 <sup>th</sup> – 16-19 Sep 14	
4 <sup>th</sup> – 21-22 Nov 14		
	6 <sup>th</sup> – 6-10 Apr 15	
		3 <sup>rd</sup> – 23-24 Jun 15
	7 <sup>th</sup> – 31 Aug-4 Sep 15	
5 <sup>th</sup> – 26-27 Oct 15		
	8 <sup>th</sup> – 28-30 Apr 16	
6 <sup>th</sup> – 1-2 Aug 16		4 <sup>th</sup> – 1-2 Sep 16
	9 <sup>th</sup> – 31 Oct-4 Nov 16	
	10 <sup>th</sup> –	
		5 <sup>th</sup> – 23-26 Jun 16 (tentative)

# Follow-up on APRAST Decision 8/8\*:

That, APAC-AIG identify potential initiatives to help improve

- accident investigation capabilities; and
- AIG effective implementation (EI) rates

of States/Administrations.

\* Endorsed at RASG/6

## **Reason for low AIG EI rates** (1/2)

- a) Lack of understanding of the audit protocol questions (PQs), e.g. not knowing the difference between process, procedure and guideline, or between establishing and promulgating a process
- b) Lack of documentation of the investigation process
- c) Lack of a training system (including training records system), plans or programmes

## **Reason for low AIG EI rate** (2/2)

- d) Lack of coordination with external agencies
- e) Lack of experience in the day-to-day administration of an accident investigation unit
- f) Lack of a systematic compilation of evidence to demonstrate compliance with the PQs



# Improving AIG EI (1/2)

Attachment A

- The APAC-AIG/4 proposed to address these deficiencies with a suite of training



## Suite of training

S/N	Area	Training modules
1	PQs	a. Understanding what the PQs are aiming at
2	Documentation of legislation amendment	a. Developing policies and procedures to address PQs' requirements b. Compiling of amendment table c. Amendment process
3	Documentation of the investigation process	a. Filling up and dispatching of notification form to ICAO, State of Registry, State of the Operator, State of Manufacturer, State of Design, etc. b. Appointing investigator-in-charge (IIC) and team members / Drafting of appointment letter c. Drafting of preliminary report d. Organisation of investigation team / Deciding on team set-up e. Conduct of investigation meetings f. Medical and toxicology examinations of persons involved g. Recorder readout process and considerations h. Special examinations (e.g. disassembly, laboratory tests, manufacturer's inspections and tests) i. Developing checklists of information to be gathered from cabin crew members and passengers j. Identifying storage areas for aircraft wreckage k. Formulating safety recommendations l. Consultation process for Draft Final Report / Drafting of transmittal correspondence m. Processing and documenting of comments received / Finalising Final Report n. Dissemination of Final Report / Drafting of transmittal correspondence o. Publication of investigation Final Report p. Tracking responses to safety recommendations q. Review of safety actions taken in response to safety recommendations r. Developing checklists for guiding IIC and investigators through the investigation process (from initial notification to issuance of final report)
4	Training system, plan and programme	a. Training objectives b. Initial, recurrent and on-the-job training plan c. Establishing training needs matrix d. Developing checklists for documenting practical training achievements e. Maintaining training records
5	Investigation manpower	a. Volunteer investigators b. Regional cooperation c. Assistance MOUs
6	Coordination with external agencies	a. Coordination with counterpart agencies – Joint Standing Operation Procedures (SOP), MOUs, etc., with CAA, airport authority, ATC, police, judicial authority, maritime administrations, search and rescue body, military (e.g. air force, navy), etc.
7	Administration of an accident investigation unit	a. Day-to-day running b. Duty officer system c. Immunisation for investigators d. Attachment to established accident investigation unit
8	Showing compliance with PQs' requirements	a. Organisation of evidence and documents needed for the USOAP audit


## **Improving AIG EI rate** (2/2)

- **Conclusion APAC-AIG 4/1**

That, APRAST consider requesting the ICAO APAC Regional Office to initiate a suite of training as per Attachment A to assist States/Administrations to improve the USOAP AIG EI rate.

- A details of a training plan will be presented later in Part II.

# Improving Accident Investigation Capabilities (1/2)

- The APAC-AIG/4 identified a number of training topics that could enhance the States/Administrations' investigation capabilities
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- Not certain of the demands for such training topics

Attachment B

## List of Basic Training

- a. Comprehensive understanding of Annex 13 protocol
- b. Investigation management
- c. Accident site control, management and safety
- d. Wreckage and debris mapping
- e. Preservation and documenting of evidence
- f. Investigator's equipment and protective clothing
- g. Photography for investigators
- h. Interviewing techniques
- i. Readout of flight recorders
- j. Investigation of flight operations
- k. Investigation of aircraft maintenance and engineering aspects
- l. Investigation of human factors
- m. Investigation of crashworthiness
- n. Investigation of cabin safety
- o. Investigation of airport factors
- p. Investigation of organizational and management factors
- q. Making safety recommendations
- r. Investigation report writing
- s. Crisis management (news media / family assistance)
- t. Underwater search and recovery of flight recorders
- u. Dangerous goods accident investigation
- v. Electronics systems investigation
- w. EGPWS and TCAS investigation
- x. Fire and explosion investigation

# Improving Accident Investigation Capabilities (2/2)

- **Conclusion APAC-AIG 4/2**

That, APRAST consider requesting ICAO APAC Regional Office to conduct a survey among APAC States/Administrations to ascertain the training demands for the topics listed in Attachment B.

# Independence of Accident Investigation Authority

- New Standard 3.2 introduced by Amendment 15 to Annex 13 and applicable on 10 November 2016:

*A State shall establish an accident investigation authority that is independent from State aviation authorities and other entities that could interfere with the conduct or objectivity of an investigation.*

- ICAO expects implementation in six months to two years, from 11 July 2016.

# Filing of Difference from Standard 3.2

- At the APAC-AIG/4, ICAO clarified that States/Administrations will not be assessed on the new Standard 3.2 until January 2018 at the earliest.
- However, States/Administrations are still required to file for a difference if they are unable to meet the new Standard 3.2 by 10 November 2016.

# Upgrading Recommended Practices 6.11 and 6.12 of Annex 13 to Standards

- The APAC-AIG/4 supported a proposal to upgrade the following Recommended Practices in Annex 13 to Standards

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**6.11 Recommendation.**— *A State conducting the investigation or any other State issuing a safety recommendation should implement procedures to record the responses to the safety recommendation issued.*

**6.12 Recommendation.**— *A State that receives a safety recommendation should implement procedures to monitor the progress of the action taken in response to that safety recommendation.*

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# **Upgrading Recommended Practices 6.11 and 6.12 of Annex 13 to Standards**

- **Conclusion APAC-AIG 4/3**

That, ICAO APAC Regional Office conveys to the Secretary of the ICAO Accident Investigation Panel (AIGP) that the APAC-AIG supports upgrading Recommended Practices 6.11 and 6.12 of Annex 13 to Standards.

- Action taken by ICAO APAC Regional Office



# Code of Conduct on Cooperation Relating to Civil Aviation Accident/Incident Investigation

- To date, 19 States/Administrations have pledged their support to the Code of Conduct:
  - Australia, Bangladesh, China, France, Hong Kong China, Indonesia, Japan, Lao PDR, Macao China, Maldives, Mongolia, Myanmar, New Zealand, **Papua New Guinea**, Philippines, Republic of Korea, Singapore, Sri Lanka and Thailand

# Database of Investigation Agencies

- To date, 22 States/Administrations have provided input to the database to update their contact information:
  - Australia, Bangladesh, **Bhutan**, Cambodia, China, France, Hong Kong China, **India**, **Indonesia**, Japan, Macao China, Maldives, Mongolia, Myanmar, Nepal, New Zealand, Papua New Guinea, Philippines, Republic of Korea, Singapore, Sri Lanka and Thailand



# Upcoming COSCAP-NA Activities

- Aircraft accident investigation workshop in Ulaanbaatar, Mongolia, on **6 – 8 December 2016**
- Registration by **25 November 2016**
- For more details:
  - <http://www.coscap-na.com/>

# RASG-APAC/6 Conclusions <sup>(1/2)</sup>

Reference	Conclusions
<p>RASG-APAC 6/1 <b>[Closed]</b></p>	<p>That, ICAO APAC Office remind States/Administrations to provide their response to the following ICAO APAC State Letters –</p> <ul style="list-style-type: none"><li>• dated 21 September 2015 [Ref.: T 10/8.4-AP136/15 (FS)];</li><li>• dated 29 January 2015 [Ref.: T 10/5.3-AP021/15 (FS)];</li><li>• dated 2 August 2013 [Ref.: T 6/13.9-AP053/13 (FS)]</li></ul> <p>If the States have not yet provided a response. <i>(Conclusion APRAST 8/4)</i></p>
<p>RASG-APAC 6/2 <b>[Closed]</b></p>	<p>That,</p> <ol style="list-style-type: none"><li>a) States/Administrations take early actions to implement the new ICAO requirements in Annex 13, particularly to establish an independent accident investigation authority as soon as possible;</li><li>b) Secretariat include the establishment of independent accident investigation authority in the monitoring mechanism on the compliance to ICAO SARPs.</li></ol> <p><i>(Conclusion APRAST 8/5)</i></p>

# RASG-APAC/6 Conclusions <sup>(1/2)</sup>

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# RASG-APAC/6 Conclusions (2/2)

Reference	Conclusions
<p>RASG-APAC 6/3 [Closed]</p>	<p>That States/Administrations is encouraged to attend:</p> <ul style="list-style-type: none"><li>a) the APAC-AIG/4 Meeting hosted by the Japan Transport Safety Board on 1–2 September 2016 and contribute to the discussion on how to improve accident investigation capabilities and USOAP AIG EI rates for States/Administrations in the APAC Region;</li><li>b) the AsiaSASI Accident Investigation Workshop on 30–31 August 2016 hosted by the Japan Transport Safety Board in conjunction with the APAC-AIG/4 meeting; and</li><li>c) the ICAO Regional Workshop in the Asia Pacific region on implementation of Amendment 15 to Annex 13 which ICAO had scheduled for April 2017.</li></ul>

## Actions by APRAST/9 (WP/7)

- Note the activities of the APAC-AIG, in particular the identification of initiatives to improve USOAP AIG EI rates and accident investigation capabilities
- Consider requesting ICAO APAC Regional Office to conduct a survey among APAC States/Administrations to ascertain the training demands for the topics listed in **Attachment B**



## **Actions by APRAST/9**

- Encourage States/Administrations to note the upcoming investigation related activities/events in the proposed APAC-AIG work plan and consider volunteering to organise the events and activities
- Encourage States/Administrations to attend COSCAP-North Asia's aircraft accident investigation workshop in Ulaanbaatar, Mongolia, on 6 – 8 December 2016

## **Part II**

# **Improvement of USOAP AIG EI rates of States/Administrations (WP/8)**

# Improvement of USOAP AIG EI rates of States/Administrations

- USOAP EI rate for APAC States in the area of AIG ranges from zero to almost 97%, with an average of 45.68%.
- APAC average is below the global average AIG EI rate of 54.89%.
- RASG-APAC has set a target of an average AIG EI rate of at least 60% by 2017.

# Reason for low AIG EI rates

- a) Lack of understanding of the audit protocol questions (PQs)
- b) Lack of documentation of the investigation process
- c) Lack of a training system (including training records system), plans or programmes
- d) Lack of coordination with external agencies
- e) Lack of experience in the day-to-day administration of an accident investigation unit
- f) Lack of a systematic compilation of evidence to demonstrate compliance with the PQs

# AIG PQs with low EI rate

- According to ICAO ISTARs database:

Out of 100+ PQs for AIG, there are 29 with below 40% EI.

# 5-day Training Programme

- Proposal: 5-day training (Attachment B) to help States/Administrations improve EI rate (but may be broken down into shorter 2-day or 3-day training)
- APAC-AIG can assist ICAO APAC Regional Office to organise the training (e.g. sourcing for instructors)

## **Actions by APRAST/9 (WP/8)**

- Consider requesting ICAO APAC Regional Office to organise the five day training course as suggested.

**Thank You**