



International Civil Aviation Organization

**First Meeting of the APRAST – Accident Investigation Ad hoc Working Group
(APRAST-AIG AWG/1)**

(Bangkok, Thailand, 6-8 June 2012)

Agenda Item 4: Investigator Training

AUSTRALIAN TRANSPORT SAFETY BUREAU INVESTIGATOR TRAINING

(Australia / Australian Transport Safety Bureau)

SUMMARY

Aircraft accident investigation is a highly specialised profession, and thorough and comprehensive training of investigators is vitally important. Australian Transport Safety Bureau (ATSB) training follows the guidelines outlined in ICAO *Training Guidelines for Aircraft Accident Investigators* (Circ 298), and culminates in ATSB investigators receiving a nationally accredited Diploma in Transport Safety Investigation (Dip TSI). The Dip TSI program takes into account an investigator's background experience, and provides initial and on-the-job training, as well as basic and advanced investigation courses. The Dip TSI program is the basis for career progression for ATSB investigators through clearly defined work level standards.

1. INTRODUCTION

1.1 Aircraft accident investigation is a highly specialised profession with its own distinct set of required knowledge, skills and experience. It is essential that all air safety investigators receive comprehensive training to ensure that the investigations that they carry out, the conclusions they reach, and the recommendations they make, are thorough, accurate and well supported by evidence.

1.2 Air safety investigators may, and should be, recruited from a range of professional backgrounds - pilots, aircraft maintenance engineers, aeronautical and airworthiness engineers, air traffic controllers, materials failure and other technical specialists, and human factors specialists. However, the investigation knowledge, skills and experience that an investigator requires are the same, whatever their professional background.

1.3 A proficient air safety investigator needs knowledge, skills and experience in a range of areas. The key elements are laid out by ICAO in Circular 298, *Training Guidelines for Aircraft Accident Investigators*. One important point to be remembered is that while an investigator needs the necessary technical skills, that non-technical skills are equally important.

1.4 It is very important that investigators have a clear understanding of ICAO Annex 13 principles, and how those principles are embodied in the legislation of their State. They must have

knowledge of aircraft accident investigation techniques and the skills necessary to collect, document, preserve and analyse evidence from a wide range of sources.

1.5 It is equally important for investigators to have well developed non-technical skills appropriate to their role. These include the ability to foster good communication and teamwork, as well as the ability to scope and manage the investigation process, both internally and with external parties. Well developed analysis and report writing skills are essential, as is the ability to identify factors that may have contributed to the accident or incident and to make appropriate safety recommendations.

1.6 The overall objective of investigator training is, to use the words of a senior investigator from the Indonesian National Transportation Safety Committee, Joe Tumenggung, to enable the trainee 'to think like an investigator'.

1.7 The training that an air safety investigator receives should not be one-off but an ongoing process throughout their career. As well as initial basic training, investigators should be afforded ongoing professional development commensurate with their expanding responsibility as an accident investigator, group leader, or investigator-in-charge.

2. THE ATSB DIPLOMA IN TRANSPORT SAFETY INVESTIGATION

2.1 The framework for ATSB investigator training is the Diploma of Transport Safety Investigation (Dip TSI).

2.2 Over a decade ago, the ATSB recognised the need for a formal qualification that would bring together all the necessary elements to comprehensively train an air safety investigator. At the time, no existing course had the breadth and depth required to provide an overarching qualification in air safety investigation. While a number of organisations provided short course training, and some institutions included aspects of air safety investigation in broader aviation studies, these alone did not provide sufficient training to be considered a qualification in air safety investigation.

2.3 Hence, the decision was taken for the ATSB to become a Registered Training Organisation, in accordance with the Australian Qualifications Training Framework, and to develop and deliver a comprehensive competency based training course that would cover all aspects of air safety investigation.

2.4 In 2002, the ATSB was accredited as a Registered Training Organisation under the National Training System. This accreditation ensures that the Dip TSI is recognised as being nationally endorsed, of a high standard and gives ATSB investigators who have completed the qualification recognised status with their peers, with the aviation industry and with other national and international organisations.

2.5 The Dip TSI is designed to train an investigator to the level where they are able to carry out the role of Investigator in Charge of a less complex air safety investigation. Newly recruited ATSB investigators work toward to Dip TSI over a period of approximately one to two years. During that time they can expect to spend approximately 700 hours working towards the Diploma. This will vary somewhat depending on their prior experience and the timing of opportunities for on-the-job training.

2.6 The name Dip TSI reflects the multi-modal nature of the ATSB, as the same principles and framework of training and professional development apply to aviation, rail and marine safety investigators.

- 2.7 The Dip TSI program consists of three components,
- Recognised current competencies and prior learning
 - Core training
 - On-the-job training and experience
- 2.8 Recognition of current competencies and prior learning reflects the fact that the ATSB recruits experienced industry personnel who bring a range of formal qualifications and skills to the job of air safety investigator. Therefore, it is necessary to establish which of these are relevant in context of the Dip TSI, and to give recognition to those elements.
- 2.9 Core training primarily consists of a number of short courses covering areas such as,
- Aircraft accident investigation fundamentals
 - Workplace health and safety
 - On-site safety and bloodborne pathogens
 - First aid
 - Critical incident stress
 - Cognitive interviewing
 - Human factors
 - Investigation analysis
 - Legal awareness
 - Cultural intelligence
 - Coronial witness preparedness
 - Negotiation skills
 - ATSB Safety Information Management System
 - Media awareness
 - Information technology
- 2.10 All short course training is conducted by either experienced Dip TSI qualified staff and/or trainers that have a Level IV Certificate in Training and Assessment.
- 2.11 On-the-job training and experience is the final component of the Dip TSI program. Investigators-in-training are guided and mentored by experienced investigators, and a formal evidence-based record is kept of the competencies that the trainee attains during this process.
- 2.12 The Dip TSI training program is based on sound adult learning principles. It is practical and very relevant to investigators needs- and builds on their existing professional knowledge and experience. In addition, the Dip TSI does more than provide an investigator with specific knowledge, skills and experience. It provides an opportunity to influence the way they think about air safety, and the approach they take to their work throughout their career. This can be of significant importance in the case of investigators who have previously worked in a regulatory role, where the approach and focus of investigation is very different.
- 2.13 Once an investigator has obtained their Dip TSI, they continue in an ongoing program of professional development. This program is aligned to well defined work level standards, with an investigator eventually being able to undertake the role of Investigator in Charge of a major investigation. Professional development activities available to investigators include advanced training courses, ongoing industry awareness, currency training and support towards advanced tertiary qualifications.
- 2.14 Where possible, the ATSB makes training course places available to investigators from other States, and also to aviation industry personnel. However, given the significant component of on-the-job training, the Dip TSI in its entirety is usually only available to ATSB investigators. However, a group of investigators from the Indonesian National Transportation Safety Committee

(NTSC) have successfully completed the Dip TSI as part of extended placements at the ATSB in Australia.

2.15 Since 2003, approximately 70 ATSB aviation safety investigators have successfully completed the Dip TSI, and another five are currently completing the qualification. In facilitating the Dip TSI, the ATSB has a dedicated training team consisting of a manager, coordinator and several internal lead trainers. External subject matter experts are also utilised to cover specialist subject areas including media awareness, cultural intelligence, coronial witness, and more.

2.16 The ATSB recognises that the strength of the organisation is in its people, and that a well developed investigator training system is a key component of attracting and retaining the best staff, and hence being able to conduct best practice air safety investigations.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) Note the ICAO guidelines for air safety investigator training outlined in *Training Guidelines for Aircraft Accident Investigators* (Circ 298).
- b) Consider ways in which air safety investigator training can be provided for States in the Asia Pacific region.

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