47th CONFERENCE OF DIRECTORS GENERAL OF CIVIL AVIATION ASIA AND PACIFIC REGIONS

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AGENDA ITEM 4: AVIATION SAFETY

TRAINING INVESTIGATORS AND MAINTAINING THEIR EXPERTISE

(Presented by China, France and Mongolia)

SUMMARY

Even in times of economic crisis air public transport continues to develop, most particularly in Asia. Air travel remains the safest means of transportation but despite the efforts made to improve safety by all the participants in safety culture, accidents still occur.

To establish the causes of an accident, which is invariably both a political and media event, and to propose the safety recommendations that can help to avoid another disaster, a technical investigation must be in the hands of well-trained investigators.

China, France and Mongolia present their respective policies related to the initial and recurrent training of their investigators.

TRAINING INVESTIGATORS AND MAINTAINING THEIR EXPERTISE

1. WHAT IS AN ACCIDENT?

1.1 Many roads around the world remain killing fields. How many people die every year because of domestic, train or ferry accidents? Even when governments advise or take measures to reduce the figures, good results are slow to come because some people are not really convinced that improvements are possible or even necessary.

1.2 For its part, air travel remains the safest means of transportation. Even though the take-off of a 200-ton machine is improbable, aircraft take off every minute and take passengers to other countries for business or leisure. There is magic in the air and people are not ready to admit that the illusionist may miss a trick.

1.3 Yet a few dozen public transport accidents cause an average 800 fatalities a year, which is unacceptable.

1.4 That is why an air disaster is both a political and media event, not to mention the sorrow and despair of the next-of-kin. Further, it leads to a crisis of some magnitude in many circles.

2. WHAT IS A SAFETY INVESTIGATION?

2.1 The State of occurrence conducts a safety investigation according to international standards and recommended practices defined by Annex 13.

2.2 One of the main thoughts to keep in mind is that “The sole objective of the investigation of an accident or incident shall be the **prevention** of accidents and incidents. It is not the purpose of this activity to apportion blame or liability” (Annex 13. 3.1).

2.3 Depending on the country’s legislative rules, a judicial investigation is also opened, either at the same time as the safety investigation or when the latter is concluded. It aims to establish blame and responsibilities.

2.4 Some States have an independent investigative body whilst others appoint a special commission to investigate. Whatever the case, there are no unmanned investigations and it is mandatory to have a panel of well trained investigators.

3. WHAT IS AN INVESTIGATOR?

3.1 An investigator should ally personal attributes with technical skills and good practice. He must behave and not seek the limelight, show integrity, impartiality and perseverance.

3.2 He should know:

3.2.1 What to look for and how to do it: accident site considerations, such as collection of evidence and control of access as well as security, hazards, safety precautions, etc.;

3.2.2 How to manage his team: neither a puppet nor a hard-liner, he will show negotiating skills and accept that he is not infallible. He cannot be like a bull in a china shop but he will have to take the others’ habits and culture into consideration to manage or to work with an international team. As a rule, one of the things his staff will appreciate is his common sense;

3.2.3 How to issue properly and in a timely way a consistent final report. Methodology on report writing is compulsory and media training is also recommended because the investigator may have to stand in the glare of the media and he should take care not to fall into the lion's den;

3.2.4 How to address the next-of-kin's expectations.

3.3 He should overcome any occasional flirtation with despair and never show he is struggling with a long and complex investigation.

3.4 He has to keep in mind that fame may not a bad thing but that it may turn out to be a problem. It is widely known that it usually takes years to climb the ladder of respectability but that downward slide does not take long.

3.5 An investigator is a guy who must say: "we're in this thing to know the truth and improve safety."

4. TRAINING INVESTIGATORS

4.1 Apart from his own background experience and personal attributes, most of the required technical methods an investigator will have to use are presented in **ICAO Circular 298 AN/172: Training Guidelines for Aircraft Accident Investigators.**

4.2 These include:

4.2.1 **Initial training** to familiarize new investigators with the legislation in their State and with the procedures and requirements of the accident investigation authority.

4.2.2 **On-the-job training**. During this phase, the new investigator will practice the procedures and tasks covered in the initial training, and gain familiarity with investigation techniques.

4.2.3 **Basic accident investigation courses**. Circular 298 AN/172 provides a syllabus of the subjects that should be discussed, preferably within the first year of training. Among other items: accident notification procedures, investigation management, investigators' equipment and accident site safety, initial action at the accident site and protection of evidence, witness interviews, recorders, structures, systems, human performance, report writing and the news media and public relations.

4.2.4 **Advanced accident investigation courses** to update the investigator's knowledge of the basic techniques and increase his knowledge in special areas relevant to accident investigations and to prepare him for the responsibilities of group leader or investigator-in-charge of a major investigation.

4.2.5 **Additional training** on the most common aircraft types used by the airlines in their State. Training on the various aircraft types can be shared equitably among the investigators. Additional training can be obtained by attending conferences and seminars, by reading related material and by exposure to major investigations as observers at major investigations on site in other States.

4.2.6 At any stage after a basic course, **specialty courses** may help an investigator to meet the needs of a particular area of accident investigation that is relevant to his assigned duties.

4.3 Last but not least, it is essential to maintain and develop the expertise of an investigator. As aircraft are becoming more and more sophisticated, the experience acquired by an investigator may sometimes not be extensive enough to enable him to handle an accident involving the latest technology. It is never possible to consider that an investigator is entirely fully-fledged. This is why, now and in the future, he must attend training courses to enable him to keep his knowledge up to date.

5. POLICIES OF THREE DIFFERENT COUNTRIES

Whatever their size and geographical location, whether they have highly developed aviation activity or not, whether they have an independent investigation body or appoint a dedicated commission, States must have trained investigators to face an air disaster that may occur any time.

Hereafter, three different States present their respective policies related to the training of their investigators and to the maintaining of their expertise.

5.1 CAAC, China

5.1.1 By and large, the investigative agency of aircraft accidents in China is the Civil Aviation Administration of China (CAAC). To be more specific, the investigation function falls within responsibilities of the Aviation Safety Office at CAAC. The CAAC investigates most of the aircraft accidents in China, but when the State Council takes charges of the most serious ones, the CAAC participates in the investigation and provides technical assistance. In addition, as China is the State of Manufacture, the CAAC sends accredited representatives as a Party to the accident investigation outside China, when it involves aircraft manufactured in China.

5.1.2 The Aviation Accident Investigation Centre (AAIC), which was a technical supporting unit under the CAAC, was established in late 2007, as a result of the ICAO USOAP audit to China earlier that year. Currently there are 9 permanent investigators working for the AAIC, with disciplines covering flight operations, air traffic control, airworthiness, FDR (Flight Data Recorder), and cabin safety.

5.1.3 The training program for all CAAC investigators is designed with ICAO Circular 298 AN/172. The training consists of initial training, on-the-job training, and specialized training.

5.1.4 CAAC investigators receive initial training and recurrent training at the Civil Aviation Management Institute of China (CAMIC). Also, the CAAC sends its investigator to internally-recognized training facilities, such as the U.S. NTSB Training Centre, the Southern California Safety Institute (SCSI) and the Singapore Aviation Academy (SAA).

5.1.5 The CAAC organizes its own investigation exercises every other year, inviting foreign investigation agencies to join as observers, such as the French BEA, and the AAIB of Singapore. At the time of the exercises, specialized training is carried out, e.g., on the use of the investigation tools and Personal Protective Equipment (PPE).

5.2 BEA, France

5.2.1 The investigation authority in France to investigate civil aviation accidents and serious incidents is the BEA (Bureau d'Enquêtes et d'Analyses). It refers directly to the Ministry in charge of transports. Its role and prerogatives are defined in the French Civil Aviation Code. The BEA staff represents 115 persons, among whom 65 are permanent investigators.

5.2.2 BEA recruits its future investigators either among students from the French Civil Aviation School (ENAC) after they graduate, or from the French Civil Aviation Directorate staff (DGAC), or among people with other aviation backgrounds such as former pilots.

5.2.3 BEA applies the syllabus provided by Circular 298 AN/172. In addition, it has established a detailed training program which defines the following roadmap: initial training, on-the-job training, investigator (general or specialized), senior investigator, experienced investigator, senior experienced investigator, investigation director. The syllabus includes theoretical in-house training, accompanying experienced investigators on site.

5.2.4 In addition, France is State of Design and State of Manufacture of a variety of aeronautical products. Although accredited representatives are usually accompanied by expert advisers from the design organization and the manufacturer, the BEA provides its investigators with a basic knowledge of aircraft or engines designed or manufactured in France. For this particular part, many investigators are involved in investigations abroad that turn out to be an additional on-the-job training.

5.3 ***AAIB Mongolia***

5.3.1 An Aviation Investigation Department was established in 1980 as a body under the CAA of Mongolia. It became the Accident Investigation Section - Aviation Safety Division in 1996. The Air Accident Investigation Bureau (AAIB) became independent in 2002.

5.3.2 AAIB Mongolia employs 4 investigators. Two of them work full time on incidents. Due to the limited possibility to recruit more staff, the recruitment of specialists and their training are the subject of great attention. Currently, there are ten trained specialists registered in the AAIB resource list. In case there is a shortage of staff to undertake an investigation, these specialists may be invited to participate, as along with employees from air carriers or from the CAA.

5.3.3 The training program is designed in accordance with ICAO Circular 298 AN/172. The first two phases take place in Mongolia and to get more experience AAIB investigators may also be observers/experts in investigations into military accidents.

5.2.4 AAIB permanent investigators periodically attend accident investigation management courses as recurrent training at the Southern California Safety Institute (SCSI) or at the Singapore Aviation Academy (SAA).

5.2.5 Where needed and where practicable, AAIB would invite worldwide-recognised authorities to participate as experts in a major investigation to get the support of experienced investigators.

6. ACTION BY THE CONFERENCE

6.1 The Conference is invited to:

a) urge States to check, in the light of the most recent accidents, if the training of their investigators is well adapted to a major investigation, and to the state of the art in terms of modern aircraft; and

b) endorse the organization of a regional working group to define what would be the best way to maintain investigators' expertise.

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