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Training Guidelines for Aircraft Accident Investigators

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INTRODUCTION

1. The investigation of an aircraft accident is a task that can be almost unlimited in scope. Therefore, some investigations will be curtailed by the resources available, unless proper management of the investigations is exercised. The investigator-in-charge is responsible for ensuring that the expenditure of the resources available results in an investigation that extracts the maximum benefit to the safety of aviation. The investigator-in-charge must have the experience to direct the investigation in a manner that ensures resources are used to the maximum effect and not squandered on irrelevant lines of inquiry. At the same time, the investigator-in-charge must also ensure, as much as is practicable, that relevant lines of inquiry are terminated as soon as they have achieved the level beyond which further expenditure of resources will be uneconomical in terms of enhancing safety.
2. As an investigator gains experience, he will realize that the need to increase his knowledge and upgrade his skills is a continuing process. While training is essential, the optimization of an investigator's capabilities generally depends upon a personal commitment to excellence.
3. During the Accident Investigation and Prevention (AIG) Divisional Meeting in September 1999, several States expressed the view that there was a need to develop common standards for the training of investigators. The training standards were to be compiled in such a way that they would be adaptable to a variety of cultures and operational requirements. Based on the discussion, the meeting in its Recommendation 7/2, agreed that ICAO would develop guidelines for the training of investigators.
4. In response to the Recommendation, ICAO developed the training guidelines contained in this circular. The circular discusses the experience and employment background required for training as an aircraft accident investigator. It also outlines the progressive training that is considered necessary to qualify a person for the various investigation roles, including appointment as the investigator-in-charge of an investigation into a major accident involving a large transport category aircraft. ICAO acknowledges that training guidelines are evolutionary in nature and may need to be updated periodically.
5. Throughout this circular, with the exception of the definitions in Chapter 1, the use of the male gender should be understood to include male and female persons and the term "accident" should be understood to include "incident".
6. ICAO is grateful for the considerable assistance provided by the International Society of Air Safety Investigators in the preparation of this circular.

Chapter 1

TERMINOLOGY

The definition of the terminology is hereby given to ensure that the readers understand the intended meaning of the terms in the context of this circular.

Accident investigation authority. The State organization responsible for conducting aircraft accident investigations.

Accident investigator. A person engaged in the investigation of aircraft accidents, incidents and other aviation safety hazards.

Accredited representative. A person designated by a State, on the basis of his or her qualifications, for the purpose of participating in an investigation conducted by another State.

Adviser. A person appointed by a State, on the basis of his or her qualifications, for the purpose of assisting its accredited representative in an investigation.

Expert/Specialist. A person invited to participate in an investigation, on the basis of his or her specialized knowledge, skills or experience.

Investigation. A process conducted for the purpose of accident prevention. It includes the gathering and analysis of information, the drawing of conclusions, the determination of causes and the making of safety recommendations.

Investigator-in-charge. A person charged, on the basis of his or her qualifications, with the responsibility for the organization, conduct and control of an investigation.

Observer. A person permitted to be present in an investigation for the purpose of observing the investigation process.

Chapter 2

BACKGROUND EXPERIENCE FOR INVESTIGATORS

2.1 Aircraft accident investigation is a specialized task which should only be undertaken by qualified investigators. Many States establish an accident investigation authority manned by qualified and experienced investigators. Some States have both an independent accident investigation authority and an accident investigation unit within the regulatory authority; others rely on investigation by the regulatory authority alone. Some States do not have any personnel employed solely for aircraft accident investigation. Such States should train appropriately qualified personnel in the accident investigation techniques required to participate in or to conduct an aircraft accident investigation. When assigned to an accident investigation, such personnel should be relieved of their regular duties for the duration of the investigation.

2.2 Potential accident investigators must have considerable practical experience in aviation as a foundation on which to build their investigation skills. This experience can be acquired from civil or military qualification as a pilot, aeronautical engineer or aircraft maintenance engineer. Personnel qualified in flight operations, airworthiness, air traffic management, or aviation related management might also be suitable for accident investigator training. Since accident investigations will often involve specialized areas, it is important that those selected for training as investigators understand the aviation infrastructure and are able to relate to the many different areas of aviation.

2.3 Normally, a small team or even a single investigator conducts the investigation of an accident involving a general aviation or small commuter aircraft. In these investigations, it is desirable for an operations investigator to have some technical experience and for an engineering investigator to have some experience as a pilot. In addition, the investigators should have a comprehensive understanding of the interrelationship of each of the supporting services that are necessary to operate an aircraft in the aviation environment.

2.4 Since the outcome of an accident investigation is largely dependent upon the aviation knowledge, skills and experience of the assigned aircraft accident investigators, they should have:

- an understanding of the depth of investigation that is necessary in order for the investigation to conform with the legislation, regulations and other requirements of the State for which they are conducting the investigation;
- a knowledge of aircraft accident investigation techniques;
- an understanding of aircraft operations and the relevant technical areas of aviation;
- the ability to obtain and manage the relevant technical assistance and resources required to support the investigation;
- the ability to collect, document and preserve evidence;
- the ability to identify and analyse pertinent evidence in order to determine the causes and, if appropriate, make safety recommendations; and
- the ability to write a final report that meets the requirements of the accident investigation authority of the State conducting the investigation.