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Manual on Aircraft Accident and Incident Investigation Training

First Edition, 2024



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AMENDMENTS

Amendments are announced in the supplements to the *Products and Services Catalogue*; the Catalogue and its supplements are available on the ICAO website at www.icao.int. The space below is provided to keep a record of such amendments.

RECORD OF AMENDMENTS AND CORRIGENDA

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FOREWORD

The investigation of an aircraft accident or incident is a wide-scope activity. Therefore, some investigations will be curtailed by the resources available, unless proper management of the investigation is exercised. The investigator-in-charge is responsible for ensuring that an investigation extracts the maximum benefit for the safety of aviation within the constraints of the resources available. The investigator-in-charge must have the experience to direct the investigation in a manner that ensures that resources are used to the maximum effect and not misspent on irrelevant lines of investigation. At the same time, the investigator-in-charge must also ensure, as much as is practicable, that relevant lines of investigation are terminated as soon as they have achieved the level beyond which further expenditure of resources would not be significantly beneficial for the enhancement of safety.

As experience is gained, the investigator will realize that there is a continual need to increase knowledge and upgrade skills. While training is essential, the optimization of an investigator's capabilities generally depends on a personal commitment to excellence.

ICAO has developed training guidelines in this area, which are contained in Circular 298 – *Training Guidelines for Aircraft Accident Investigators*. The circular discusses the experience and employment background required for training as an aircraft accident investigator. It also outlines the progressive training 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 need to be updated periodically.

During the second meeting of the Accident Investigation Panel (AIGP/2) held in Montréal in June 2016, it was concluded that, although basic investigator training at formal institutions was well structured, it was not comprehensive enough to prepare investigators to perform adequately in the field. Training programmes would need to be designed to address areas of deficiency, and Final Reports could be used to identify investigators' deficiencies.

At the AIGP/2, it was agreed that competency-based training (CBT) would be a training methodology defining the competencies of aircraft accident and incident investigators, and that such training should not be prescriptive so as to allow States to implement CBT as appropriate.

During further discussions held at the sixth meeting of the Accident Investigation Panel (AIGP/6), held in Montréal from 10 to 21 May 2021, it was acknowledged that applying a full range of competency-based training and assessment methodologies would not be suitable for the function of an aircraft accident investigator, and that high-level guidance for an adapted CBT model would be more appropriate and useful for States' accident investigation authorities, which, based on their size and resources, could then determine how to apply the methodology.

This manual supersedes Cir 298 in its entirety. It includes updated and expanded guidance as well as an adapted CBT model for accident and incident investigators.

The following ICAO documents provide additional information and guidance on related subjects:

- Annex 13 – *Aircraft Accident and Incident Investigation*
- *Manual of Aircraft Accident and Incident Investigation* (Doc 9756)

Part I – *Organization and Planning*

Part II – *Procedures and Checklists*

Part III – *Investigation*

Part IV – *Reporting*

- *Manual on Accident and Incident Investigation Policies and Procedures* (Doc 9962)
- *Manual on Regional Accident and Incident Investigation Organization* (Doc 9946)

ICAO is grateful for the considerable assistance provided by the Accident Investigation Panel in the preparation of this manual.

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GLOSSARY

When the following terms are used in this manual, they have the following meaning:

Accident investigation authority. The authority designated by a State as responsible for aircraft accident and incident investigations within the context of Annex 13.

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. The accredited representative would normally be from the State's accident investigation authority.

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.

Competency. A dimension of human performance that is used to reliably predict successful performance on the job. A competency is manifested and observed through behaviours that mobilize the relevant knowledge, skills, and attitudes to carry out activities or tasks under specified conditions.

Competency-based training and assessment. Training and assessment that are characterized by a performance orientation, emphasis on standards of performance and their measurement, and the development of training to the specified performance standards.

Competency standard. A level of performance that is defined as acceptable when assessing whether or not competency has been achieved.

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

Global positioning system (GPS). The satellite navigation system operated by the United States.

ICAO competency framework. A competency framework, developed by ICAO, is a selected group of competencies for a given aviation discipline. Each competency has an associated description and observable behaviours.

Investigation. A process conducted for the purpose of accident prevention which includes the gathering and analysis of information, the drawing of conclusions, including the determination of causes and/or contributing factors and, when appropriate, the making of safety recommendations.

Investigation management system. A systematic approach to managing an investigation, based on a comprehensive plan, checklists, and method and flow charts to track the progress of the investigation.

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.

Note.— Nothing in the above definition is intended to preclude the functions of an investigator-in-charge being assigned to a commission or other body.

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

On-the-job training. Training carried out under working conditions and with guidance from a supervisor or a highly-experienced operator during which the trainee can reinforce skills achieved during formal training and/or acquire new skills while actually practising them in real time.

State of Design. The State having jurisdiction over the organization responsible for the type design.

State of Manufacture. The State having jurisdiction over the organization responsible for the final assembly of the aircraft, engine or propeller.

ABBREVIATIONS AND ACRONYMS

AIGP	Accident Investigation Panel
CAA	Civil Aviation Authority
CBT	Competency-based training
EGPWS	Enhanced ground proximity warning system
GPS	Global positioning system
OJT	On-the-job training
RPA	Remotely piloted aircraft
RPAS	Remotely piloted aircraft system
RPS	Remote pilot station
SARPs	Standards and Recommended Practices
SMS	Safety management system
