



ICAO

Doc 9962

# Manual on Accident and Incident Investigation Policies and Procedures

Second edition, 2019



Approved by and published under the authority of the Secretary General

INTERNATIONAL CIVIL AVIATION ORGANIZATION





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Published in separate English, Arabic, Chinese, French, Russian  
and Spanish editions by the  
INTERNATIONAL CIVIL AVIATION ORGANIZATION  
999 Robert-Bourassa Boulevard, Montréal, Quebec, Canada H3C 5H7

For ordering information and for a complete listing of sales agents  
and booksellers, please go to the ICAO website at [www.icao.int](http://www.icao.int)

*First edition, 2011*  
*Second edition, 2019*

**Doc 9962, *Manual on Accident and  
Incident Investigation Policies and Procedures***  
Order Number:  
ISBN 978-92-9258-788-8

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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](http://www.icao.int). The space below is provided to keep a record of such amendments.

### RECORD OF AMENDMENTS AND CORRIGENDA

AMENDMENTS		
No.	Date	Entered by

CORRIGENDA		
No.	Date	Entered by



## FOREWORD

As a result of the ICAO Universal Safety Oversight Audit Programme (USOAP) audits and audit follow-ups, it was found that a number of States had developed and documented accident and incident investigation policies and procedures, often in the form of a manual on policies and procedures. In those cases, the manuals generally implemented the provisions of ICAO Annex 13 — *Aircraft Accident and Incident Investigation* as well as industry best practices and checklists for carrying out investigations. However, the USOAP audits also established that many States lacked this type of Annex 13 implementation tool and detailed guidance for carrying out investigations. The States that lacked such documented policies and procedures were found to have more audit findings than States that had a manual on policies and procedures in place.

During the Accident Investigation and Prevention (AIG) Divisional Meeting (2008) (AIG/08) held in Montréal from 13 to 18 October 2008, Recommendation 5/1 — *Amendment to Chapter 5* (Annex 13) was developed by the meeting that urged amendment of Annex 13, Chapter 5, to include a new Recommended Practice as part of the responsibility of the State conducting the investigation as follows:

*“5.4.2 Recommendation.— The accident investigation authority should develop documented policies and procedures detailing its accident investigation duties. These should include: organization and planning; investigation; and reporting”.*

Moreover, the AIG/08 meeting developed Recommendation 5/2 — *Accident Investigation Policies and Procedures Document*, which urged, *“That ICAO develop guidance in the form of a framework of documented policies and procedures for carrying out investigations, to be made available to States in an appropriate ICAO document”.* This manual is in response to that recommendation.

The guidance provided in this manual is intended for use by those States that do not have in place policies and procedures to meet the requirements of Article 26 of the Chicago Convention and the Standards and Recommended Practices (SARPs) of Annex 13. The content of this manual is consistent with, and is organized in accordance with, guidance materials contained in the:

*Manual of Aircraft Accident and Incident Investigation* (Doc 9756)

Part I — *Organization and Planning*

Part II — *Procedures and Checklists*

Part III — *Investigation* (in preparation)

Part IV — *Reporting*

The material contained herein is presented for the benefit of States to use as an implementation tool for the development of a State’s policies and procedures manual for accident and incident investigation; it is consistent with best international practices, including policies and procedures examined during ICAO USOAP audits. The contents of the manual provide a template for States to modify, as necessary, their accident investigation documentation, to be in line with Annex 13 provisions and to standardize and harmonize accident investigation processes among ICAO Member States.



The vision of ICAO in developing this manual was to provide a document that States could use as a template to insert their State-specific material into a core document containing the essence of the most accepted and appropriate policies and procedures available, therefore ensuring compliance with Annex 13 during investigations carried out by all States.

*Note 1.— Because this manual deals with accident, serious incident and incident investigations, for reasons of brevity, the terms “accidents” and “accident investigation”, as used herein, apply equally to “incidents” and “incident investigation”.*

*Note 2.— This manual is constructed in such a manner that, for a State that wishes to develop its own policies and procedures manual, it may “fill in the blanks” by inserting State-specific materials, such as legislation, regulations and names of organizations. In certain portions of the manual, where State-specific text would be required, such as the title of the accident investigation authority, the text is noted in italics enclosed in single brackets, such as [Name of State] or the [Investigation Authority].*

*Note 3.— In certain portions of this manual, comments and explanations are added in italics as “Notes” enclosed in double brackets ([[...]]) in order to provide better understanding of the suggested content. These notes are for information and clarification only and would not necessarily become part of the final manual; rather, they are intended to provide explanations or reasons for certain information to be included in a particular section of the manual.*

In order to keep this guidance material relevant and accurate, suggestions for improving it in terms of format, content or presentation are welcome. Any such recommendation or suggestion will be examined, and, if found suitable, included in the next edition of the guidance upon approval by the Secretary General.

Regular revision will ensure that the guidance remains both pertinent and accurate.

Comments concerning this manual should be addressed to:

The Secretary General  
International Civil Aviation Organization  
999 Robert-Bourassa Boulevard  
Montréal, Quebec H3C 5H7  
Canada

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## GLOSSARY

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

**Accident.** An occurrence associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down, in which:

- a) a person is fatally or seriously injured as a result of:
  - being in the aircraft, or
  - direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or
  - direct exposure to jet blast,

*except* when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or

- b) the aircraft sustains damage or structural failure which:
  - adversely affects the structural strength, performance or flight characteristics of the aircraft, and
  - would normally require major repair or replacement of the affected component,

*except* for engine failure or damage, when the damage is limited to a single engine, (including its cowlings or accessories), to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windcreens, the aircraft skin (such as small dents or puncture holes), or for minor damages to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike (including holes in the radome); or

- c) the aircraft is missing or is completely inaccessible.

*Note 1.— For statistical uniformity only, an injury resulting in death within thirty days of the date of the accident is classified, by ICAO, as a fatal injury.*

*Note 2.— An aircraft is considered to be missing when the official search has been terminated and the wreckage has not been located.*

*Note 3.— The type of unmanned aircraft system to be investigated is addressed in ICAO Annex 13, paragraph 5.1.*

*Note 4.— Guidance for the determination of aircraft damage can be found in ICAO Annex 13, Attachment E.*

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

**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. Where the State has established an accident investigation authority, the designated accredited representative would normally be from that 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.

**Aircraft.** Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.

**Audit.** A USOAP CMA on-site activity during which ICAO assesses the effective implementation of the critical elements (CEs) of a safety oversight system and conducts a systematic and objective review of a State's safety oversight system to verify the status of a State's compliance with the provisions of the Convention or national regulations and its implementation of ICAO Standards and Recommended Practices (SARPs), procedures and aviation safety best practices.

**Balancing test.** The determination whereby the competent authority(ies) assesses competing public interests and decides which interest should prevail leading to the determination referred to in Standard 5.12 of Annex 13.

**Causes.** Actions, omissions, events, conditions, or a combination thereof, which led to the accident or incident. The identification of causes does not imply the assignment of fault or the determination of administrative, civil or criminal liability.

**Competent authority.** The governmental entity(ies) that has the power and authority to administer the balancing test.

**Contributing factors.** Actions, omissions, events, conditions, factors or a combination thereof, which, if eliminated, avoided or absent, would have prevented or reduced the probability of the accident or incident occurring, or would have mitigated the severity of the adverse consequences of the accident or incident. The identification of contributing factors does not imply the assignment of fault or the determination of administrative, civil or criminal liability.

**Civil aviation authority.** The governmental entity or entities, however titled, that are directly responsible for the regulation of all aspects of civil air transport, including technical (i.e. air navigation and aviation safety) and economic (i.e. the commercial aspects of air transport).

**Flight recorder.** Any type of recorder installed in the aircraft for the purpose of complementing accident/incident investigation.

*Note.— See Annex 6 — Operation of Aircraft, Parts I, II and III, for specifications relating to flight recorders.*

**General aviation operation.** An aircraft operation other than a commercial air transport operation or an aerial work operation.

**Incident.** An occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation.

*Note.— The types of incidents which are of main interest to the International Civil Aviation Organization for accident prevention studies are listed in ICAO Annex 13, Attachment C.*

**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.

**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.*

**Maximum mass.** Maximum certificated take-off mass.

**Operator.** The person, organization or enterprise engaged in or offering to engage in an aircraft operation.

**Preliminary Report.** The communication used for the prompt dissemination of data obtained during the early stages of the investigation.

**Safety recommendation.** A proposal of an accident investigation authority based on information derived from an investigation, made with the intention of preventing accidents or incidents and which in no case has the purpose of creating a presumption of blame or liability for an accident or incident. In addition to safety recommendations arising from accident and incident investigations, safety recommendations may result from diverse sources, including safety studies.

**Serious incident.** An incident involving circumstances indicating that there was a high probability of an accident and associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down.

*Note 1.— The difference between an accident and a serious incident lies only in the result.*

*Note 2.— Examples of serious incidents can be found in ICAO Annex 13, Attachment C.*

**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.

**State of Occurrence.** The State in the territory of which an accident or incident occurs.

**State of the Operator.** The State in which the operator's principal place of business is located or, if there is no such place of business, the operator's permanent residence.

**State of Registry.** The State on whose register the aircraft is entered.

*Note.— In the case of the registration of aircraft of an international operating agency on other than a national basis, the States constituting the agency are jointly and severally bound to assume the obligations which, under the Chicago Convention, attach to a State of Registry. See, in this regard, the Council Resolution of 14 December 1967 on Nationality and Registration of Aircraft Operated by International Operating Agencies which can be found in Policy and Guidance Material on the Economic Regulation of International Air Transport (Doc 9587).*

**State safety programme (SSP).** An integrated set of regulations and activities aimed at improving safety.

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## LIST OF ACRONYMS

ADREP	Accident/incident data reporting system
AIG/08	Accident Investigation and Prevention (AIG) Divisional Meeting (2008)
ATC	Air traffic control
ATS	Air traffic services
CAA	Civil aviation authority
ECCAIRS	European Coordination Centre for Accident and Incident Reporting Systems
ICAO	International Civil Aviation Organization
IDP	Individual development plan
IIC	Investigator-in-charge
ISASI	International Society of Air Safety Investigators
MoU	Memorandum of Understanding
OJT	On-the-job training
RAIO	Regional accident and incident investigation organization
SARPs	Standards and Recommended Practices
SDCPS	Safety data collection and processing systems
SSP	State safety programme
TCB	Technical Co-operation Bureau
USOAP	Universal Safety Oversight Audit Programme



## **ORGANIZATION**



# Chapter 1

## INTRODUCTION

### 1.1 GENERAL

1.1.1 This manual contains the *[Accident Investigation Authority]* policies and procedures for the investigation of civil aircraft accidents and incidents that occur in the *[Name of State]* territory. This manual also contains policies and procedures for the *[Accident Investigation Authority]* and other *[Name of State]* organizations' participation in investigations of accidents and incidents that occur outside of *[Name of State]* territory, but involve *[Name of State]* interests, including *[Name of State]*-operated, -registered, -designed and -manufactured aircraft. An organizational chart of the *[Accident Investigation Authority]* is contained in Chapter 3 of this manual.

1.1.2 The policies and procedures contained herein are in conformity with international standards and best practices.

*[[Note.— The contents of this model manual are written based on the assumption that [Name of State] has in place legislation, regulations, policies, and procedures that are in full compliance with ICAO Standards and Recommended Practices (SARPs). If [Name of State] has “differences” between ICAO requirements, in accordance with Article 38 of the Convention, it must notify ICAO of such differences. Moreover, the policies and procedures manual developed by use of this model manual should clearly illustrate those provisions in the manual which differ from ICAO requirements, as well as any plans to bring [Name of State] provisions in line with ICAO requirements.]]*

1.1.3 This manual was developed using the SARPs and guidance material promulgated by ICAO, as well as materials and best practices of some States.

1.1.4 The provisions of this manual are binding on the actions of the *[Accident Investigation Authority]*, including its investigators and management personnel. The provisions of this manual are also binding on any other *[Name of State]* government and aviation industry organizations and personnel, and other personnel and organizations from outside of *[Name of State]* that participate in the *[Accident Investigation Authority]*-led investigations.

*Note 1.— Since investigations vary in complexity, a document of this kind cannot cover all eventualities. The more common techniques and processes, however, have been included. Although this manual may be of use for experienced and inexperienced investigators alike, it is not a substitute for investigation training and experience, as well as common sense.*

*Note 2.— Because this manual deals with investigations of accidents, serious incidents and incidents, for reasons of brevity, the terms “accidents,” “investigations” and “accident investigations”, as used herein, should apply equally to the investigation of accidents, serious incidents, and incidents.*

## 1.2 STATE SAFETY PROGRAMME

1.2.1 In compliance with provisions of *Annex 19 — Safety Management*, ICAO Member States are required to establish and maintain a State safety programme (SSP) that is commensurate with the size and complexity of the State's civil aviation system. The implementation of an SSP requires coordination among multiple authorities responsible for the aviation functions in the State.

1.2.2 The SSP framework contemplates four components. The second component is "State safety risk management" and its third element is "accident and incident investigation". The investigation process has a pivotal role in the SSP, enabling the State to identify causes and/or contributing factors and to generate the necessary countermeasures to prevent recurrence.

1.2.3 A State, or a regional grouping of States, must 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. The sole objective of the investigation of an accident or incident shall be the prevention of accidents and incidents, and not the apportioning of blame or liability. Such investigations are in support of the management of safety in the State. In the operation of the SSP, the State maintains the independence of the accident investigation authority from other State aviation authorities.

1.2.4 The [*Accident Investigation Authority*] has developed this manual as part of its efforts in support of [*Name of State*] to implement and maintain its SSP.

## 1.3 BACKGROUND DOCUMENTS

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

- *Annex 13 — Aircraft Accident and Incident Investigation*, Eleventh Edition, July 2016, incorporating Amendment 16
- *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 Regional Accident and Incident Investigation Organization* (Doc 9946)
- *Model Accident Investigation Authority Act* (Appendix A)
- *Model Aircraft Accident and Incident Investigation (AIG) Regulations* (Appendix B)
- *Human Factors Training Manual* (Doc 9683)
- *Manual of Civil Aviation Medicine* (Doc 8984)
- *Safety Management Manual (SMM)* (Doc 9859)

- *Airport Services Manual (Doc 9137), Part 5 — Removal of Disabled Aircraft*
- *Manual on Assistance to Aircraft Accident Victims and their Families (Doc 9973)*
- *ICAO Policy on Assistance to Aircraft Accident Victims and their Families (Doc 9998)*
- *Training Guidelines for Aircraft Accident Investigators (Circ 298)*
- *Hazards at Aircraft Accident Sites (Circ 315)*

#### **1.4 DEFINITIONS AND ABBREVIATIONS**

The definitions and abbreviations used in this manual are contained in the glossary and list of acronyms.

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## Chapter 2

### LEGISLATIVE REQUIREMENTS

#### 2.1 ICAO REQUIREMENTS

Article 26 of the *Convention on International Civil Aviation* specifies that it is incumbent on a State in which an aircraft accident occurs to institute an inquiry into the circumstances of the accident. This obligation can only be met when appropriate legislation is in place. Such legislation must establish an accident investigation authority (or commission, board or other body) for the investigation of aircraft accidents. ICAO Annex 13 — *Aircraft Accident and Incident Investigation*, contains SARPs for the investigation of accidents and incidents in ICAO Member States. Legislation and regulations are in place in *[Name of State]* to address these international requirements.

#### 2.2 THE REQUIREMENTS IN *[NAME OF STATE]*

##### 2.2.1 General

*[Name of State]* has adopted legislation, regulations, policies and procedures that meet the requirements of ICAO for accident and incident investigation. *[Name of State]* has no need to forward “differences” to ICAO, in accordance with Article 38 of the Convention.

*[[Note.— If the State has had to file differences with any of the provisions of Annex 13, the above paragraph and any subsequent text in the manual would need to be modified to reflect those differences.]]*

##### 2.2.2 Legislation in *[Name of State]*

*[[Note.— This portion of the manual should include a summary of relevant State legislation, which provides the legislative basis for the policies and procedures contained in the manual, and which illustrates the State’s commitment to comply with the Chicago Convention, particularly Article 26 of the Convention, and the SARPs contained in ICAO Annex 13. It also should include, but is not limited to, a summary of the legislation, which:*

- a) *created the accident investigation authority;*
- b) *demonstrates the independence of the accident investigation authority from State aviation authorities and other entities that could interfere with the conduct or objectivity of an investigation;*
- c) *provided it with the responsibilities and authorities (including funding) regarding civil aviation accident and incident investigation on behalf of the State; and*
- d) *authorizes the publication of government operating regulations regarding investigations of accidents and incidents.*

*The full legislation should be contained in an Appendix to the manual. An example of possible text is presented below, and an example of Model Accident Investigation Authority Act is contained in Appendix A.]]*

The legislative basis for the policies and procedures contained in this manual are codified in *[Aviation Act, or other name of the relevant legislation, including the date the legislation was enacted]*. A copy of the *[Act, or other name]* is contained in Appendix A. The *[Act, or other name]* establishes the *[Accident Investigation Authority]* and provides its responsibilities and authorities for the investigation of aircraft accidents and incidents to be conducted in accordance with Article 26 of the Chicago Convention and ICAO Annex 13. The *[Act, or other name]* specifies that provisions regarding investigations will be further regulated by government regulations.

### 2.2.3 Regulations in *[Name of State]*

*[[Note.— This portion of the manual should include a summary of relevant regulations, sometimes referred to as “operating regulations”, published by the government regarding accident and incident investigations. The regulations should address, at a minimum, the national requirements emanating from the legislation pertaining to accident and incident investigation and should provide for standardized investigation processes in conformance with the SARPs contained in ICAO Annex 13, as well as guidance contained in the ICAO Manual of Aircraft Accident and Incident Investigation (Doc 9756), Parts I, II, III and IV. Some States promulgate regulations regarding accident and incident investigation virtually verbatim to the SARPs contained in ICAO Annex 13 and Doc 9756. Promulgation of regulations may take on different forms, depending on the preferences of various States. In some cases, regulations are promulgated and published by Presidential Decree, or similar government action. In other cases, the regulations may be promulgated by the independent accident investigation authority, after appropriate approval within the government. Regardless of the means of promulgation, the regulations need to ensure satisfactory compliance with ICAO Annex 13 and other ICAO guidance materials.*

*The full operating regulations should be contained in an Appendix to the manual. An example of possible text is presented below; and an example of Model Regulations is contained in Appendix B.]]*

The regulatory basis for the policies and procedures contained in this manual are codified in *[Name or title of regulations pertaining to accident and incident investigation, as well as the date of enactment]*. The regulations are consistent with the provisions of ICAO Annex 13 and other ICAO documents regarding accident and incident investigation, including the *ICAO Manual of Aircraft Accident and Incident Investigation (Doc 9756)*, Parts I, II, III and IV. A copy of the operating regulations is contained in Appendix B.

*[[Note.— If the State has filed differences with any provisions of Annex 13, the above paragraph and subsequent text in the manual would need to be modified accordingly.]]*

## 2.3 POLICY MATTERS AND MANUAL AMENDMENTS

2.3.1 It is the policy of the *[Accident Investigation Authority]* to conduct its business in accordance with ICAO SARPs, particularly those contained in ICAO Annex 13 and the *ICAO Manual of Aircraft Accident and Incident Investigation (Doc 9756)*, Parts I, II, III and IV. It is also the policy of the *[Accident Investigation Authority]* to conduct its business in accordance with the relevant laws and regulations of *[Name of State]*.

2.3.2 The laws and regulations are supplemented by this manual, which contains the policies and procedures of the *[Accident Investigation Authority]* for the conduct of an investigation in *[name of State]* or outside of *[Name of State]*, when *[Name of State]* interests or responsibilities apply.

2.3.3 The *[Head/Chief]* of the *[Accident Investigation Authority]* should appoint a staff member to monitor any amendments to ICAO SARPs or other ICAO documents to ensure that relevant *[Name of State]* laws, regulations, policies and procedures are amended as necessary. If for some reason, *[Name of State]* laws, regulations, policies and procedures do not meet the intent of ICAO SARPs, the *[Head/Chief]* of the *[Accident Investigation Authority]* should ensure that ICAO is notified in a timely manner of such differences, in accordance with Article 38 of the Chicago Convention.

2.3.4 The *[Head/Chief]* of the *[Accident Investigation Authority]* should also appoint an appropriate staff member to review this manual on a periodic basis and to prepare amendments, as necessary, to ensure its currency and consistency with the standards and best practices of the international aviation community. That staff member should also ensure that any differences between *[Name of State]* and ICAO SARPs are notified to ICAO, pending possible amendment of *[Name of State]* laws, regulations, policies and procedures, to resolve such differences.

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## Chapter 3

# INVESTIGATION OBJECTIVE AND INDEPENDENCE

### 3.1 ICAO REQUIREMENTS

An accident investigation authority must be strictly objective and totally impartial and must also be perceived to be so. It must also be able to conduct investigations in an independent manner that precludes interference from outside pressures. The following references are relevant:

- ICAO Annex 13, Chapter 3, paragraph 3.1:

“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”.

- ICAO Annex 13, Chapter 3, paragraph 3.2:

“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 Annex 13, Chapter 5, paragraph 5.4:

“The accident investigation authority shall have independence in the conduct of the investigation and have unrestricted authority over its conduct...”.

- ICAO Annex 13, Chapter 5, paragraph 5.4.1:

“Any investigation conducted in accordance with the provisions of this Annex shall be separate from any judicial or administrative proceedings to apportion blame or liability.

*Note.— Separation can be achieved by the investigation being conducted by State accident investigation authority experts, and any judicial or administrative proceedings being conducted by other appropriate experts. Coordination, as per 5.10, between the two processes would likely be required at the accident site and in the gathering of factual information, with due consideration to the provisions in 5.12”.*

- ICAO Annex 13, paragraph 5.4.3:

“A State shall ensure that any investigations conducted under the provisions of this Annex have unrestricted access to all evidential material without delay”.

- ICAO Annex 13, paragraph 5.4.4:

“A State should ensure cooperation between its accident investigation authority and judicial authorities so that an investigation is not impeded by administrative or judicial investigations or proceedings”.

*Note.— Cooperation may be achieved by legislation, protocols, agreements or other arrangements, and may cover the following subjects: access to the site of the accident; preservation of and access to evidence; initial and ongoing debriefings of the status of each process; exchange of information; appropriate use of safety information; and resolution of conflicts.*

- ICAO *Manual of Aircraft Accident and Incident Investigation* (Doc 9756), Part I — *Organization and Planning*, paragraph 2.1.7, which states, in part, the following:

“The accident investigation authority must be strictly objective and totally impartial and must also be perceived to be so. It should be established legislatively in such a manner that it can withstand political or other interference or pressure from other government organizations, as well as from industry. Many States have achieved this objective by setting up their accident investigation authority as an independent statutory body or by establishing an accident investigation organization that is separate from the civil aviation administration. In these States, the accident investigation authority reports direct to Congress, Parliament or a ministerial level of government that is different than the Ministry, which also oversees State aviation authorities”.

This is the ideal arrangement for demonstrating independence, in accordance with Annex 13, paragraph 3.2.

*[[Note.— If the State meets the above ideal arrangements, the manual contents should highlight the legislative, regulatory and organizational structure of the accident investigation authority that demonstrates its independence. However, if the ideal arrangements are not possible because of political or other reasons and the accident investigation authority is directly or indirectly connected to the Ministry that is also responsible for the State civil aviation authority, the manual contents will need to highlight the legislative, regulatory and operational basis, which demonstrates “functional” independence in accordance with Annex 13, paragraph 3.2, as outlined below in the note following paragraph 3.2.2.*

*Moreover, when States’ resources for aircraft accident and incident investigations are limited, ICAO encourages States to foster regional accident and incident investigation organizations (RAIOs). Regional arrangements may include aircraft accident and incident investigation matters, such as the delegation of investigations or parts thereof, or enlisting the mutual assistance and cooperation of States in an investigation. The ICAO Manual on Regional Accident and Incident Investigation Organization (Doc 9946) provides guidance on the establishment and management of a regional accident and incident investigation organization. The manual also outlines the duties and responsibilities of ICAO Contracting States, individually and/or collectively, with respect to the establishment and management of a regional accident and incident investigation system.*

*However, when a State delegates the conduct of all investigations under their responsibility to another State or an RAIO, that State would still need to have an accident investigation authority established, in accordance with Standard 3.2 of Annex 13. In this case, the accident investigation authority could be composed of a skeleton staff (e.g. one to three persons) necessary to run the function and services of the authority. Some of the roles of the delegating State’s accident investigation authority would be to institute the investigation, as per Standard 5.1 of Annex 13, and to ensure that the wreckage is properly protected awaiting the arrival of the investigation team, as required in Standard 3.3 which reads:*

*“The State of Occurrence shall take all reasonable measures to protect the evidence and to maintain safe custody of the aircraft and its contents for such a period as may be necessary for the purposes of an investigation. Protection of evidence shall include the preservation, by photographic or other means, of any evidence which might be removed, effaced, lost or destroyed. Safe custody shall include protection against further damage, access by unauthorized persons, pilfering and deterioration”.*

*Should the accident investigation authority be required to undertake concurrently another function, due to limited resources in the State, there must be no organizational and/or operational connection with other entities that could interfere with the conduct and objectivity of investigations, including judicial authorities and civil aviation authorities. If this is the arrangement in the State, the manual contents would need to contain the legislative, regulatory and operational structure that demonstrates compliance with Standard 3.2 of Annex 13.*

*Lastly, some States appoint a separate ad hoc accident investigation commission for each accident to be investigated. Such States would also need to have an accident investigation authority established, in accordance with Standard 3.2 of Annex 13. There also must be provisions in place to alleviate any retribution of seconded personnel to an ad hoc commission, when they return to their normal duties. If this is the arrangement in the State, the manual contents will need to describe the legislative, regulatory and operational structure for the ad hoc accident investigation commission that demonstrates compliance with Standard 3.2, Annex 13. The Manual of Aircraft Accident and Incident Investigation (Doc 9756), Part I, Chapter 2, contains detailed guidance material regarding this subject.]]*

## 3.2 INDEPENDENCE

3.2.1 Maintaining independence in the conduct of investigations will result in enhancing the credibility of the *[Accident Investigation Authority]* and its ability to avoid situations that have the potential to create conflicts of interest. Maintaining independence of the investigation function is equally important for accident and incident investigations.

3.2.2 The intent of “independence” is that the *[Accident Investigation Authority]* shall be functionally independent, in particular from the State civil aviation authorities responsible for airworthiness, certification, flight operation, maintenance, licensing, air traffic control or airport operation and, in general, of any other party whose interests could conflict with its ability to conduct its work, without interference or influence from other organizations.

*[[Note.— The Manual of Aircraft Accident and Incident Investigation, Part I — Organization and Planning (Doc 9756), Chapter 2, outlines the criteria that must be demonstrated by all States, regardless of the legislative and organization arrangements in the States, in order for the accident investigation authority to be considered “functionally independent”. Those criteria are repeated here to enable States to tailor the contents for this section of the manual to its particular arrangements:*

### 1. Functional independence

*It must be demonstrated that there are no real or perceived examples of influence by the ministry concerned on the conduct of the accident investigation authority’s investigations, the issuance of findings, safety recommendations, interim report(s) and the Final Report. In other words, the ministry must not have the organizational means to influence the conduct of the investigation and its results, nor can it demand access, or give judgement about the investigation’s source materials.*

### 2. Autonomous investigation

*It must be demonstrated that the accident investigation authority, during the conduct of its investigations, neither seeks nor takes instructions from other authorities and has unrestricted authority over the conduct of investigations.*



3. *Unrestricted authority to publish information*

*It must be demonstrated that the accident investigation authority can issue interim statements or report(s), findings, safety recommendations and the Final Report under its signature, without having to obtain approval from any outside authority. Of course, this does not affect the accident investigation authority's routine consultation during the course of the investigation with team members as part of the investigation party system, nor the consultation on the draft Final Report with participating States in accordance with Annex 13.*

4. *Independent funding and staffing*

*It must be demonstrated that funding and staffing of the accident investigation authority cannot be influenced by the ministry concerned or any other organizations. This includes the alleviation of any retribution of seconded personnel when they return to their regular duties.*

5. *Critical elements embedded in legislation*

*The criteria listed above need to be outlined in legislation and need to be apparent in the operation of the accident investigation authority in order for it to be considered functionally independent.]]*

3.2.3 "Independence" does not mean that the [Accident Investigation Authority] would not be administratively supervised and accountable to a governmental minister or ministry (or Parliament or Congress) for its finances, administration, policies and working methods (which should be transparent).

3.2.4 The [Accident Investigation Authority] has legislative support to ensure funding for its routine investigation activities and has contingency plans in place for emergency funding of costly investigations.

### 3.3 THE REQUIREMENTS IN [NAME OF STATE]

*[[Note.— This section of the manual should be tailored to the specifics of the language contained in the State legislation and regulations. Suggested text is offered below. The legislation and operating regulations should be placed in appendices to the manual. Model legislation and operating regulations are contained in Appendices A and B to provide guidance to States in developing their specific legislation and operating regulations.]]*

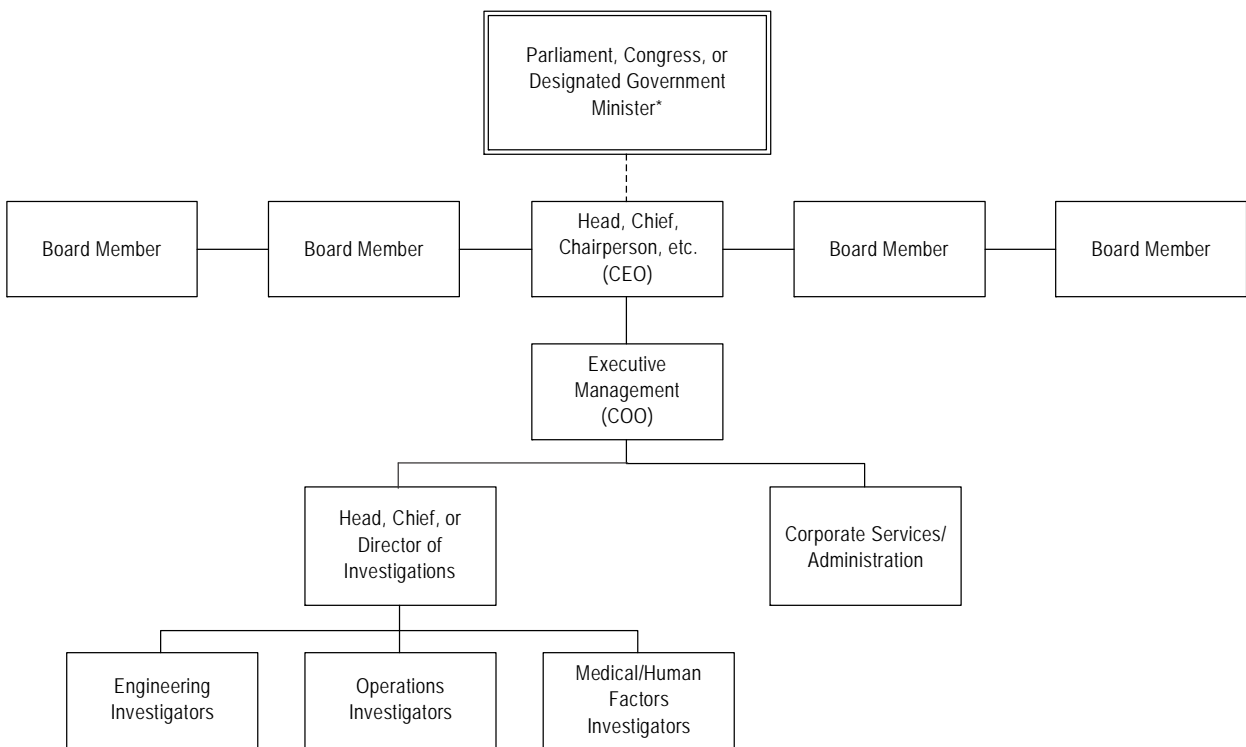
3.3.1 The [Name of State] legislation, regulations, policies, and procedures are consistent with and reinforce the provisions of ICAO Annex 13 regarding the objective and independence of the investigation.

3.3.2 The requirements of the [Accident Investigation Authority] are contained in [Legislation, regulations — Appendices A and B] for the independence and objectivity of investigations, as follows:

- a) ensure the establishment of an adequately funded, professionally trained, independent and impartial accident investigation authority in [Name of State];
- b) ensure the independence of all investigations into aircraft accidents and incidents that are carried out in [Name of State] from political or other interference or pressure; and
- c) promote the use of a common set of regulations compliant with the provisions of ICAO Annex 13 — *Aircraft Accident and Incident Investigation*, including regulations for the protection of accident and incident investigation records with the purpose of accident prevention and not the assignment of blame.

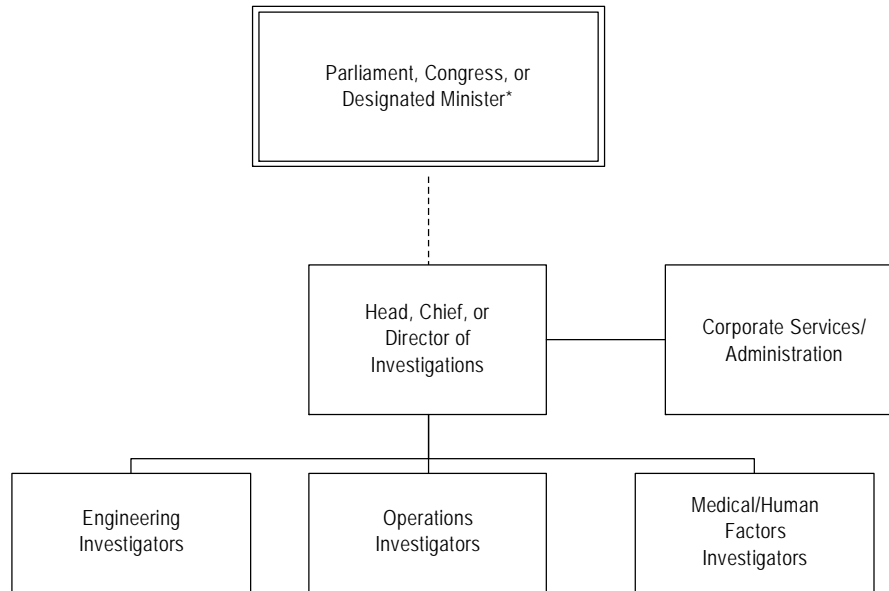
### 3.4 ORGANIZATIONAL CHART OF THE [ACCIDENT INVESTIGATION AUTHORITY]

[[Note.— In this part of the manual, it is appropriate to insert the organizational chart for the accident investigation authority, along with any narrative necessary to explain the organizational structure. The chart should reflect the independence of the authority and the details of the management and reporting functions. Figures 3-1 and 3-2 below illustrate how many States organize their accident investigation authorities to meet the “independence” requirements of ICAO Annex 13. Figure 3-1 shows a complex organization with a politically appointed chairman and board members, who normally are not investigators. Figure 3-2 shows a more streamlined organization that does not have a board. Such an organization is most often led by an experienced investigator, such as a senior official. It should be noted that the reporting requirements in both cases are administrative only to Parliament, Congress, or a designated minister and the organizations are fully separate from any State civil aviation authorities and from judicial authorities.]]



\* The accident investigation authority must not report to the same minister responsible for the regulation and safety oversight of civil aviation in the State.

**Figure 3-1. Complex organizational structure of an accident investigation authority**



- \* *The accident investigation authority must not report to the same minister responsible for the regulation and safety oversight of civil aviation in the State.*

**Figure 3-2. Streamlined organizational structure of an accident investigation authority**

### 3.5 SUMMARY

It is the policy of the *[Accident Investigation Authority]* and its investigation teams to meet the requirements specific to this chapter to ensure that the sole purpose of investigations is to prevent future accidents. Any judicial or administrative proceedings to apportion blame or liability shall be separate from the *[Accident Investigation Authority]* investigations. The *[Accident Investigation Authority]* and its investigation teams shall have functional independence in the conduct of an investigation and unrestricted authority over its conduct, with the intent that any appointed investigation team can withstand interference or pressure from any source.

## **PLANNING**



## Chapter 4

# PLANNING AND PREPARATION FOR INVESTIGATION

### 4.1 GENERAL

4.1.1 In order to conduct proper investigations, the managers and investigators of the *[Accident Investigation Authority]* must be fully prepared and must have a plan of action before an accident or incident occurs. Pre-investigation planning and preparedness involves several elements, including a plan for staffing key positions on an investigation team. Other considerations include Memoranda of Understanding (MoU) with other *[Name of State]* government and aviation industry organizations, as well as aircraft accident investigation authorities in other States, as a means to obtain assistance in the form of qualified investigators and facilities when required. It is important to have temporary arrangements in place for the secondment of additional staff from other *[Name of State]* government and industry organizations under some circumstances. It is also important to provide adequate training of personnel and to provide the appointed investigators with the necessary tools, investigation equipment and personal protective equipment in order to meet health and safety requirements.

4.1.2 Proper planning and preparedness are essential in facilitating the prompt arrival of investigators at an accident site and have considerable bearing on the efficiency of the investigation.

### 4.2 THE SELECTION AND APPOINTMENT OF INVESTIGATORS

4.2.1 Attention is drawn to ICAO Circular 298, *Training Guidelines for Aircraft Accident Investigators*, Chapter 2, *Background Experience for Investigators*, paragraphs 2.1 and 2.2, which state, in part:

*Aircraft accident investigation is a specialized task which should only be undertaken by qualified investigators.... Potential accident investigators must have considerable practical experience in aviation as a foundation on which to build their investigation skills.*

It is the policy of the *[Accident Investigation Authority]* to follow the guidance contained in ICAO Circular 298 regarding the selection and appointment of investigators.

4.2.2 The investigation personnel of the *[Accident Investigation Authority]* are issued government credentials, which specify the legislative and regulatory basis for their authorities and responsibilities. The credentials contain the investigators' photographs and provide the legal basis for their work during investigations of accidents and incidents.

4.2.3 *The [Accident Investigation Authority]* has agreements with the accident investigation authorities in other States to call upon other experts for assistance on very short notice and without having to establish formal agreements and arrangements at the time of the need of such assistance. Appendix C contains an example of an MoU in respect of accident and serious incident investigation and a sample MoU with a State accident investigation authority.

4.2.4 As part of its management plan, the *[Accident Investigation Authority]* maintains a list of qualified investigators who are appointed to key positions. Also, the *[Accident Investigation Authority]* should ensure that suitable arrangements can be made on short notice to enlist the necessary support staff from other organizations within *[Name of State]*.

4.2.5 The use of outside expertise is accomplished by written contracts and/or MoUs which include provisions to ensure that the seconded individuals are relieved of their regular duties during the course of the investigation. Their independence and objectivity in the investigation work is essential, and it is important to ensure there are no real or perceived conflicts of interest on the parts of seconded individuals. Seconded investigators should be given proper credentials and should sign written agreements to comply with *[Name of State]* laws, regulations, policies and procedures, and to demonstrate their independence and objectivity and that there are no conflicts of interest during the period of the secondment.

4.2.6 Each investigator, as well as outside personnel used on a temporary basis, must be fully aware of their duties and responsibilities.

### 4.3 INVESTIGATOR TRAINING

4.3.1 It is the policy of the *[Accident Investigation Authority]* to provide appropriate training to investigators consistent with international standards and best practices. In particular, the *[Accident Investigation Authority]* should follow guidance provided in ICAO Circular 298, Chapters 3 and 4, which contain detailed information regarding the training of investigators in four phases:

- 1) Initial training
- 2) On-the-job training
- 3) Basic accident investigation courses
- 4) Advanced accident investigation courses and additional training

4.3.2 One means to determine and manage training needs, as well as to monitor and evaluate the training needs and training outcomes of the *[Accident Investigation Authority]* staff, is through the use of an individual development plan (IDP). A template for an IDP is provided in Appendix E, containing the required elements of an investigator's or manager's training programme. Based on an individual's job description and his or her background, experience, and training gained in the past, the need for additional training can be determined and monitored with the IDP, which would be completed for each staff member.

*Note.— The items listed in the template IDP are for reference only. Individual items may be added, deleted, or amended to make the IDP directly applicable to any particular staff member.*

4.3.3 Each newly hired person possesses some knowledge, skills, and abilities applicable to the assigned tasks; however, the level from one person to another varies. For example, two highly qualified operations investigators could possess extensive flight operations background, but one may only have limited incident investigation experience, while the other may have considerable major accident investigation experience. Further, investigators require different levels of knowledge, skills, and abilities, depending on the investigation roles to which they may be assigned. The IDP is an excellent tool for identifying and managing these variables.

4.3.4 The IDP contains the basic requirements of knowledge, skills and abilities that each person either must possess when hired, or must gain through a structured training programme. The IDP also provides a tool to manage and plan each person's training, including a means to project an annual training budget. Further, the IDP can be used to document the necessary steps to be taken for a person to be promoted to higher levels of responsibility, such as from the position of Operations Investigator to Investigator-in-charge. The completed IDP for each person becomes his or her training record, and it is filed along with supporting materials such as certificates and other records of training and experience.

#### 4.4 INVESTIGATOR EQUIPMENT

4.4.1 As part of its management plan, it is the policy of the *[Accident Investigation Authority]* to properly equip its managers and investigators in accordance with ICAO guidance material and international best practices.

4.4.2 Attention is drawn to the ICAO *Manual of Aircraft Accident and Incident Investigation* (Doc 9756), Part I, Chapter 2, paragraph 2.6.1, which states, in part, the following:

*Accident investigators should have their investigation field kits and essential personal items packed and ready so they can proceed without delay to the accident site....”*

Appendix 1 to Chapter 2 of Doc 9756, Part I contains guidance for preparing an investigation field kit.

4.4.3 Attention is also drawn to the ICAO *Manual of Aircraft Accident and Incident Investigation* (Doc 9756), Part I, Chapter 5, paragraphs 5.4 and 5.5, and Appendix 1 to Chapter 5 — *Personal Protective Equipment against Biological Hazards*, regarding safety at the accident site and environmental and natural hazards.

4.4.4 The *[Accident Investigation Authority]* should ensure that there is a periodic review of the technical investigation equipment to be used by the investigators at an accident site. The equipment could include cameras, notebook computers, mobile telephones, tools, etc. Specialized equipment may need to be stored at the office or may have to be purchased as needed.

4.4.5 Advance consideration should be given to details such as accident investigators’ inoculations, passport requirements and travel facilities.

#### 4.5 HEALTH AND SAFETY AT AN ACCIDENT SITE

4.5.1 ICAO Circular 315, *Hazards at Aircraft Accident Sites*, contains detailed guidance on managing occupational health risks in aircraft accident investigation, including the various categories of hazards associated with accident and incident investigation. The *[Accident Investigation Authority]* should use the generic operational safety planning guide contained in Chapter 4 of Circular 315, as well as the operational safety plan/site assessment tool contained in Appendix A to Chapter 4 of Circular 315, and the personal protective equipment guide contained in Appendix B to Chapter 4 of Circular 315.

4.5.2 Investigators should be aware of the potential hazards at an accident site and what precautions to take. For this reason, the *[Accident Investigation Authority]* should designate a staff member (or an appropriate person or persons from another organization) as the “accident site safety and security coordinator” responsible for accident site safety and security matters and overseeing the personal protective equipment and its use. The investigator-in-charge (IIC) or the designated accident site safety and security coordinator should brief the investigation team on all known and potential hazards and should establish appropriate safety practices. The accident site safety and security coordinator should also ensure compliance with the provisions of this manual and other ICAO guidance material regarding the health and safety of investigators during the course of investigations.

*Note.— If a specific accident site safety and security coordinator is not designated, another investigator, such as the IIC, chairperson of the structures group or another responsible person should assume the duties of ensuring proper site safety and security.*

4.5.3 The support of fire department and dangerous goods specialists should be enlisted, as necessary, to evaluate known and/or potential hazards, and to brief the investigation team, as appropriate.



4.5.4 Investigators who work among wreckage should be given a valid anti-tetanus serum inoculation and hepatitis immunization, as well as the necessary personal protective equipment against biological hazards, such as blood-borne pathogens. Records of inoculations should be maintained for each investigator.

4.5.5 It is the policy of the *[Accident Investigation Authority]* to provide all investigators with initial and recurrent training on biological hazard protective equipment and procedures. Records of such training should be maintained for each investigator.

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# **INVESTIGATION**



## Chapter 5

# INITIAL NOTIFICATION AND RESPONSE

### 5.1 GENERAL

This chapter contains policies and procedures pertaining to:

- a) reporting requirements;
- b) initial notification and reporting of aircraft accidents and incidents to civil aircraft that occur in *[Name of State]*;
- c) responses to initial notifications from other States regarding accidents and incidents that occur outside the *[Name of State]* but involving interests of *[Name of State]*; and
- d) delegation in whole or in part of investigations.

*Note.— It is the policy of [Name of State] and the [Accident Investigation Authority] to comply with the provisions of ICAO Annex 13, Chapter 4 — Notification, regarding accidents and incidents occurring in [Name of State]. Therefore, not all of the details contained in ICAO Annex 13, Chapter 4, are repeated herein.*

### 5.2 REPORTING REQUIREMENTS

5.2.1 The following checklist is from ICAO Annex 13, Attachment B. It specifies the various reporting requirements for different types of accidents and serious incidents. It is the responsibility of the *[Accident Investigation Authority]* on behalf of *[Name of State]* to comply with the notification and reporting requirements of ICAO Annex 13 (Chapters 4, 6 and 7). All notifications and reports should be forwarded in one of the official ICAO working languages. If possible, notifications and reports should also be in English when another working language was used.

5.2.2 A list of addresses of accident investigation authorities can be found in the ICAO *Manual of Aircraft Accident and Incident Investigation* (Doc 9756), Part I — *Organization and Planning* and on the ICAO public website. (Chapters 10 and 11 of this manual contain additional reporting requirements.)

5.2.3 A list of “serious incidents” requiring notification is contained in Appendix D of this manual (reference ICAO Annex 13, Attachment C).

<i>REPORTING CHECKLIST</i>			
<i>Notification — accidents and incidents</i>			
<i>From</i>	<i>For</i>	<i>Send to</i>	<i>ICAO Annex 13 reference</i>
State of Occurrence	International occurrences: All aircraft	State of Registry State of the Operator State of Design State of Manufacture ICAO (when aircraft is over 2 250 kg or is a turbojet-powered aeroplane)	4.1
State of Registry	Domestic and other occurrences: All aircraft	State of the Operator State of Design State of Manufacture ICAO (when aircraft is over 2 250 kg or is a turbojet-powered aeroplane)	4.8

### 5.3 NOTIFICATION PROCEDURES

5.3.1 The [Accident Investigation Authority] should maintain a 24-hour-a-day duty officer to receive notifications of accidents and incidents. The duty officer should use modern communications equipment for notifications from within [Name of State] and to/from other States. There should be a backup system in case the duty officer cannot be contacted for notifications.

5.3.2 The [Accident Investigation Authority] will ensure that up-to-date contact and address information for reporting of accidents and incidents to the [Accident Investigation Authority] is available to the relevant aviation organizations and personnel within [Name of State] and to other States through ICAO by use of the ICAO website (*list of addresses for accident investigation authorities*), as well as listed in the ICAO *Manual of Aircraft Accident and Incident Investigation* (Doc 9756), Part I, Chapter 4, Appendix 2. The 24-hour contact information for the [Accident Investigation Authority] should also be published on the [Accident Investigation Authority] website for the benefit of the international aviation community.

5.3.3 Upon receiving a notification of an accident or incident in [Name of State], the duty officer should alert the [Accident Investigation Authority] management and appropriate investigation team members. The team members must prepare for immediate departure to the accident site. The duty officer should coordinate the notification of other [Name of State] government agencies and relevant organizations, such as search and rescue, police and other involved States, such as the State of Registry, Operator, Design, and/or Manufacturer, in accordance with ICAO Annex 13, Chapter 4 — *Notification*. Notification and reporting to ICAO are also addressed in Chapter 11 of this manual.

5.3.4 The initial (and the amended initial) notification to other States and ICAO shall contain the following general information, if available, as per ICAO Annex 13, paragraph 4.2:

- a) for accidents the identifying abbreviation ACCID; for serious incidents SINCID; for incidents INCID
- b) manufacturer, model, nationality and registration marks, and serial number of the aircraft;
- c) name of owner, operator and hirer, if any, of the aircraft;
- d) qualification of the pilot-in-command, and nationality of crew and passengers;
- e) date and time (local time or UTC) of the accident or incident;
- f) last point of departure and point of intended landing of the aircraft;
- g) position of the aircraft with reference to some easily defined geographical point, and latitude and longitude;
- h) number of crew and passengers; aboard, killed and seriously injured; others, killed and seriously injured;
- i) description of the accident or incident and the extent of damage to the aircraft, so far as is known;
- j) an indication to what extent the investigation will be conducted or is proposed to be delegated by the State of Occurrence;
- k) physical characteristics of the accident or incident area, as well as an indication of access difficulties or special requirements to reach the site;
- l) identification of the originating authority and means to contact the investigator-in-charge and the accident investigation authority of the State of Occurrence at any time; and
- m) presence and description of dangerous goods carried on board the aircraft.

5.3.5 The following is an example of an accident notification:

#### EXAMPLE OF A NOTIFICATION

<i>Information required (see ICAO Annex 13, paragraph 4.2)</i>	<i>Example</i>
a) for accidents the identifying abbreviation ACCID; for serious incidents SINCID; for incidents INCID	a) ACCID
b) manufacturer, model, nationality and registration marks, and serial number of the aircraft	b) Boeing 737-200, United Kingdom, GAMSU, serial no. 20280
c) name of owner, operator and hirer, if any, of the aircraft	c) Derby Aviation

<i>Information required</i> (see ICAO Annex 13, paragraph 4.2)	<i>Example</i>
d) qualification of the pilot-in-command, and nationality of crew and passengers	d) Captain; crew: Anytown City; passengers: unknown
e) date and time (local time or UTC) of the accident or incident	e) 7 October 1983 at 1314 hours local time
f) last point of departure and point of intended landing of the aircraft	f) London/Heathrow-Perpignan/Rivesaltes
g) position of the aircraft with reference to some easily defined geographical point, and latitude and longitude <sup>1</sup>	g) 12 km south of Prades, 42 <sup>0</sup> 33' N, 02 <sup>0</sup> 26' W, elevation 2 200 m
h) number of crew and passengers; aboard, killed and seriously injured; others; killed and seriously injured <sup>2</sup>	h) 6 crew and 57 passengers aboard: all fatally injured; others: none
i) description of the accident or incident and the extent of damage to the aircraft, so far as is known	i) aircraft collided with mountainside in the Canigou Massif. Aircraft destroyed by fire
j) an indication to what extent the investigation will be conducted or is proposed to be delegated by the State of Occurrence	j) full investigation by the French accident investigation authority
k) physical characteristics of the accident or incident area, as well as an indication of access difficulties or special requirements to reach the site	k) mountainous area, difficult access, perpetual snow
l) identification of the originating authority and means to contact the investigator-in-charge and the accident investigation authority of the State of Occurrence at any time	l) Bureau Enquêtes-Accidents, Paris, France. For additional information, contact Mr. X at (telephone and facsimile numbers, and email address)
m) presence and description of dangerous goods carried on board the aircraft	m) none

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1. It may be helpful to provide the elevation of the accident site, if it is known.

2. It is useful to first provide the number of persons aboard (crew, passengers) and then the injuries they sustained.

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## 5.4 RESPONSE TO NOTIFICATIONS

5.4.1 Upon receipt of an initial notification from another State about an accident or incident that occurred outside of [Name of State] involving [Name of State] interests ([Name of State]-Registered, -Operated, -Designed, or -Manufactured), the [Accident Investigation Authority] should respond indicating its intentions to participate in the investigation and the expected travel arrangements of its accredited representative and advisers. If travel to the accident site in the other State is not expected, the other State should be so advised.

5.4.2 Regardless of whether the [Accident Investigation Authority] intends to travel to an investigation in another State, the [Accident Investigation Authority] should appoint an accredited representative who will gather relevant materials and records related to the flight, crew, or aircraft, or any other material that may be of use to the accident investigation authority in the other State. Such materials should be forwarded to the IIC of the other State in a secure and expeditious manner.

*Note.— The accredited representative for [Name of State] appointed to assist other States with their investigations should preferably be a qualified senior investigator from the accident investigation authority, who understands international accident and incident investigation practices, particularly ICAO Annex 13, and who should represent the interests of [Name of State] during investigations led by other States. All advisors from [Name of State], from the [Accident Investigation Authority], [CAA], airlines, universities, military, etc., should be responsive to the leadership of the accredited representative.*

5.4.3 The following specific requirements of ICAO Annex 13, Chapter 4, are policy provisions of the [Accident Investigation Authority]:

- As soon as possible after an accident or incident in [Name of State], the [Accident Investigation Authority] should forward an accident/incident notification to the other States involved and, when applicable, to ICAO. The [Accident Investigation Authority] should also subsequently dispatch details omitted from the initial notification as well as other known relevant information.
- The [Accident Investigation Authority] should forward notifications in a timely manner with all available information in clear concise language prepared in one of the official ICAO working languages — most often English.
- The [Accident Investigation Authority] should acknowledge receipt of notifications of accidents and incidents from other States.
- The [Accident Investigation Authority] should provide the State conducting the investigation with, as applicable, any relevant information regarding the flight, crew and aircraft involved in an accident or incident as soon as possible.
- The [Accident Investigation Authority] should notify the State conducting the investigation whether it intends to appoint an accredited representative and, if so, provide details about travel and other arrangements.
- If the [Accident Investigation Authority] is aware of dangerous goods on board an aircraft that has an accident or incident, the [Accident Investigation Authority] should ensure that it notifies the State conducting the investigation with the details about the dangerous goods on board the aircraft by the most suitable and quickest means available.

5.4.4 The [Accident Investigation Authority] should maintain a record of all transmissions of notifications sent, responses received, and any follow-up correspondence in a tracking file system linked to each accident/incident file for future reference and follow-up actions.



*Note.*— The [Name of State] should take into account the provisions of the ICAO Manual on Assistance to Aircraft Accident Victims and their Families (Doc 9973) regarding notifications and other matters pertaining to assisting aircraft accident victims and their families.

## 5.5 DELEGATION OF THE INVESTIGATION (IN WHOLE OR IN PART)

5.5.1 ICAO Annex 13, paragraphs 5.1, 5.1.1 and 5.1.2 contain provisions that the whole or any part of an investigation of an accident or incident may be delegated by the State of Occurrence to another State or to a regional accident and incident investigation organization (RAIO), based on mutual arrangement and consent.

*Note.*— Guidance related to the establishment and management of an RAIO is contained in the Manual on Regional Accident and Incident Organization (Doc 9946).

5.5.2 For occurrences in which [Name of State] is the State of Occurrence, and involving aircraft operated, registered, designed and/or manufactured by other State(s), the [Accident Investigation Authority] may consider delegating the whole or parts of the investigation to an accident investigation authority in another State or to an RAIO, in order to facilitate a timely investigation. For example, for aircraft component examinations that must be conducted at facilities outside of [Name of State], the [Accident Investigation Authority] may delegate the oversight of the examinations to the accident investigation authority in another State. Whenever possible, the facility should not be the manufacturer, in order to avoid a real or perceived conflict of interest. However, there may be times when the only appropriate expertise or tooling will be at the manufacturer's facility, so it will be necessary to ensure investigator supervision of the work. Until the [Accident Investigation Authority] establishes its own flight recorder laboratory, replay and analysis for recorders should be conducted in the facilities of other States with recorder read-out capabilities, in accordance with guidance provided in ICAO Annex 13, Attachment D, *Guidelines for Flight Recorder Read-out and Analysis*.

*Note.*— ICAO Annex 13, paragraph 5.1, Note 2, states that, "When the whole investigation is delegated to another State or a regional accident and incident investigation organization, such a State is expected to be responsible for the conduct of the investigation, including the issuance of the Final Report and the ADREP reporting. When a part of the investigation is delegated, the State of Occurrence usually retains the responsibility for the conduct of the investigation".

5.5.3 For occurrences over international waters involving in-flight damage or in-flight injuries to occupants of [Name of State]-registered aircraft that lands in another State, the [Accident Investigation Authority] may delegate the whole or part of the investigation to the other State, or to an RAIO, upon mutual arrangement and consent.

5.5.4 The general spirit of ICAO Annex 13 is cooperation between States during investigations. Hence, timely communications, sharing of information, and sharing of investigative tasks between States using the authority to delegate the whole or part of any investigation foster such cooperation. It is the policy of the [Accident Investigation Authority] to comply with this spirit of cooperation.

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## Chapter 6

# INVESTIGATION POLICIES AND PROCEDURES

### 6.1 GENERAL

6.1.1 This chapter of the manual contains general policies and procedures of the *[Accident Investigation Authority]* that are consistent with the requirements and guidance provided by ICAO, as well as the best practices of the accident investigation authorities in some other States. *[Name of State]* laws and regulations pertinent to the *[Accident Investigation Authority]* and aircraft accident investigation in *[Name of State]* provide the legislative and regulatory basis for the policies and procedures contained herein. Many of the following policy and procedural matters are taken directly from ICAO documents and have been accepted by the *[Accident Investigation Authority]* as its own.

6.1.2 It is the policy of the *[Accident Investigation Authority]* to institute an investigation into the circumstances of all aircraft accidents and incidents falling under the authority and responsibilities entrusted to the *[Accident Investigation Authority]* by the government. Such investigations should be conducted in accordance with the provisions of ICAO Annex 13 and *[Name of State]* laws and regulations.

6.1.3 It is the policy of the *[Accident Investigation Authority]* to determine the extent of the investigation and the procedures to be followed in carrying out such an investigation, depending on the lessons it expects to draw from the investigation for the improvement of safety. The scope and complexity of the investigation and the size and composition of the investigation team should be influenced by the following factors, among others:

- a) injuries, deaths and damage to equipment, third parties and the environment;
- b) identified and potential safety issues underlying the occurrence;
- c) the likelihood of recurrence, the probability of adverse consequences, and the severity of adverse consequences;
- d) accident and incident history related to the type of operation, size and type of aircraft, the operator, manufacturer, regulator, etc.; and
- e) actual and potential deviations from industry safety and operational regulations, standards, procedures, and practices.

6.1.4 It is the policy of the *[Accident Investigation Authority]* to conduct investigations and complete reports for all accidents and incidents, including the type of serious incidents listed in ICAO Annex 13, Attachment C. It should also conduct selected investigations of other incidents not listed in ICAO Annex 13.

*Note.— The [Accident Investigation Authority] has an arrangement (MoU) with [the CAA] to be notified of all occurrences (accidents and incidents), including air traffic and mechanical failure incidents, so that the [Accident Investigation Authority] can determine if it should conduct an independent investigation. Most of the incident notifications should be generated by the [CAA] mandatory safety reporting system. See Appendix C.*

6.1.5 Upon notification of an occurrence that falls under the jurisdiction of the *[Accident Investigation Authority]*, the *[Accident Investigation Authority]* should immediately institute an investigation, appointing an IIC and additional

experts as required. The *[Accident Investigation Authority]* should assure that the appointed experts are comprised of aircraft accident investigation specialists who have adequate expertise, training, and experience to ensure a thorough investigation.

6.1.6 The *[Accident Investigation Authority]* should consider calling upon an aircraft accident investigation agency of another State for assistance on the basis of mutual agreements. The *[Accident Investigation Authority]* may further consider proposing the delegation of the whole investigation or parts thereof to an accident investigation authority in another State, or an RAIO, should the circumstances of an occurrence so warrant this action.

6.1.7 If, during the course of an investigation, the *[Accident Investigation Authority]* becomes aware of, or suspects, unlawful interference (sabotage or other crime), it should immediately notify the appropriate aviation security and police authorities. The *[Accident Investigation Authority]* should continue the safety investigation, parallel with any judicial investigation, and should complete a Final Report of the occurrence, in accordance with ICAO Annex 13, keeping in mind continued cooperation with the judicial authorities.

6.1.8 If an accident or incident being investigated by *[Name of State]* has a flight data recorder (FDR) or cockpit voice recorder (CVR), or both, the *[Accident Investigation Authority]* should make immediate arrangements to recover and protect the flight recorders. The *[Accident Investigation Authority]* should arrange read-out of the recorders as soon as it is practical to do so at an appropriate flight recorder read-out facility. As per Attachment D to ICAO Annex 13, it is essential that flight recorders be read out as early as possible after an accident. Early identification of problem areas can affect the investigation at the accident site, where evidence is sometimes transient. Early identification of problem areas may also result in urgent safety recommendations, which may be necessary to prevent a similar occurrence.

6.1.9 Should the recorders sustain damage in such a way that they cannot readily be read out at the chosen facility, or are of a type that requires additional expertise or equipment (such as Russian-built flight recorders), the *[Accident Investigation Authority]* should seek expert assistance consistent with the provisions of ICAO Annex 13. In some cases, the recorder may need to be taken to its manufacturer for read-out. In such cases, the work should normally be supervised by a *[Accident Investigation Authority]* investigator, or an investigator from another State to ensure that there is no real or perceived conflict of interest.

6.1.10 The *[Accident Investigation Authority]* should also consider electronic equipment other than flight recorders, which may contain valuable information related to the accident. Such equipment includes satellite navigation units (e.g., global positioning system (GPS), Global Navigation Satellite System (GLONASS), ground proximity warning system (GPWS), terrain awareness and warning system (TAWS), flight management system (FMS)). Analyses of these units can significantly help the investigation, especially in the absence of information from the flight recorders. In addition, the *[Accident Investigation Authority]* should consider seeking expert assistance from the relevant States of Manufacture.

6.1.11 The *[Accident Investigation Authority]* should complete, publish and publicly release a Final Report of the investigation in accordance with ICAO Annex 13 requirements, consistent with the complexity and safety issues involved in the occurrence. When safety deficiencies are identified during the course of an investigation, the *[Accident Investigation Authority]* should encourage relevant organizations (airlines, airports, manufacturers, regulators, ICAO, when ICAO documents are involved, etc.) to take safety action to prevent recurrence. If necessary, the *[Accident Investigation Authority]* should issue safety recommendations to the organization(s) in a position to take safety action. Chapter 10 of this manual contains further details about the report writing and safety recommendations.

## 6.2 RIGHTS, AUTHORITY AND OBLIGATIONS OF INVESTIGATORS

The *[Accident Investigation Authority]* investigators have the following rights and authority, which are consistent with *[Name of State]* obligations under ICAO Annex 13:

- a) Unhampered access and control over an aircraft accident site and any wreckage thereon.
- b) Unhampered access and control over all relevant accident/incident investigation materials, evidence, documents, etc., including air traffic service (ATS) recordings and recorders.
- c) The right to conduct detailed examination and testing of relevant material/evidence without delay or interference.
- d) The right and obligation not to disclose certain accident and incident investigation records for purposes other than accident and incident investigation, unless the competent authority designated by that State determines that in accordance with national laws and subject to Annex 13, Appendix 2 and paragraph 5.12.5, that their disclosure or use outweighs the likely adverse domestic and international impact such action may have on that or any future investigation. Such records include:
  - cockpit voice recordings and airborne image recordings and any transcripts from such recordings; and
  - records in the custody or control of the accident investigation authority, being:
    - all statements taken from persons by the accident investigation authority in the course of the investigation;
    - all communications between persons having been involved in the operation of the aircraft;
    - medical or private information regarding persons involved in the accident or incident;
    - recordings and transcriptions of recordings of air traffic control units;
    - analysis of and opinions about information, including flight recorder information, made by the accident investigation authority and accredited representatives in relation to the accident or incident; and
    - the draft Final Report of an accident or incident investigation.

### 6.3 INVESTIGATION OPERATIONS

The *[Accident Investigation Authority]* personnel and the investigators have the following rights, authority, and obligations:

- a) Call on the services of local police or other authorized persons to ensure protection of the aircraft accident site, including the aircraft and its contents, until such time as the *[Accident Investigation Authority]* and the appointed investigators are able to directly take over custody and security of the aircraft and its contents.
- b) Ensure that the aircraft, its contents, and other relevant evidence remain undisturbed, to the extent possible, until arrival and inspection by an accredited representative, if requested to do so.

*Note.— Nothing in this provision precludes the [Accident Investigation Authority] from instituting an investigation, and if for unforeseen reasons, the aircraft, etc. must be moved or otherwise disturbed pending the arrival of an accredited representative, the activities involved should be documented by photographs and other appropriate means.*

- c) Ensure, in the event of an occurrence to be investigated, that all ATS communications recordings, radar data, and documents associated with the flight are secured for safekeeping.
  - d) Permit accredited representatives of the following States to participate in any investigation:
    - the State of Registry;
    - the State of the Operator;
    - the State of Design;
    - the State of Manufacture; and
    - any other State that on request provides information, facilities or experts.
  - e) Permit advisers assisting accredited representatives to participate in an investigation to the extent necessary in order to make the participation by the accredited representatives effective.
  - f) Permit participation of experts (within the provisions of ICAO Annex 13, paragraph 5.27) from States having suffered fatalities or serious injuries to their citizens. Such experts should be permitted to:
    - 1) visit the scene of the accident;
    - 2) have access to the relevant factual information, which is approved for public release by the State conducting the investigation, and information on the progress of the investigation; and
    - 3) receive a copy of the Final Report.
- Note.— Experts appointed under the provisions of ICAO Annex 13, paragraph 5.27, are not necessarily permitted to participate in the actual investigation; rather, they are provided limited access (cited above) related to the circumstances pertaining to the death or injury of citizens from their State(s). Likewise, experts should be permitted to assist in the identification of victims and in meetings with survivors from their respective States.*
- g) Entitle accredited representatives under the control of the IIC to participate in all aspects of the investigation, in particular:
    - to visit the scene of the accident;
    - to examine the wreckage;
    - to obtain witness information and suggest areas of questioning;
    - to have full access to all relevant evidence as soon as possible;
    - to receive copies of all pertinent documents;
    - to participate in read-outs of recorded media;
    - to participate in off-scene investigative activities, such as component examinations, technical briefings, tests and simulations;

- to participate in investigation progress meetings including deliberations related to analysis, findings, causes, contributing factors and safety recommendations; and
  - to make submissions in respect of the various elements of the investigation.
- h) Invite participation of the operator in the investigation, when neither the State of Registry nor State of the Operator appoints an accredited representative.
- i) Invite participation of the manufacturer(s) (type design and/or final assembly of the aircraft) in the investigation, when neither the State of Design nor the State of Manufacture appoints an accredited Representative.
- j) Call on the best technical expertise available from any source to supplement its investigative staff, should the need arise.
- k) Protect evidence and maintain safe custody of the aircraft and its contents for a period of time necessary to conduct the investigation, including protection from further damage, access by unauthorized persons, pilfering or deterioration. See Appendix F for detailed procedures.
- l) Photograph and document evidence of a transitory nature by appropriate means to preclude loss of evidence.
- m) Test and examine aircraft components, which could possibly cause damage to the components during these tests and examinations.
- n) Coordinate between the [*Accident Investigation Authority*] and judicial authorities to ensure that the sole purpose of the investigation is for accident prevention purposes, and to ensure that any judicial or administrative proceedings to apportion blame or liability are separate from the ICAO Annex 13 investigation.
- o) Ensure that autopsy examinations, as well as toxicological tests, are carried out for crew members and passengers for medical investigation purposes. Medical examinations also should be carried out on surviving flight crew, passengers and aviation personnel involved in the occurrence, such as air traffic controllers, if deemed necessary by the IIC.
- p) For investigations being conducted by other States, provide the State conducting the investigation with:
- (in all cases) all relevant information requested by that State; and
  - (in all cases) information about an aircraft that prior to the occurrence of an accident or incident has used or normally would use the facilities or services of [Name of State]. For example, flight crew and aircraft maintenance records, ATS recordings, meteorological information, etc. related to the occurrence should be provided to the State conducting the investigation.
- q) Appoint an accredited representative from the [Investigation Authority] in the case of an accident involving an aircraft of a maximum mass of over 2 250 kg, when specifically requested to do so by the State conducting the investigation.

*Note.— Such an appointment does not necessarily require that the [Accident Investigation Authority]-accredited representative travel to the accident site; however, the accredited representative is required to fulfil the obligations contained in ICAO Annex 13 by providing whatever assistance is required.*

- r) Prevent disclosure of information by the accredited representative appointed by the [Accident Investigation Authority] and by [Name of State] advisers on the progress and findings of an investigation, without the express consent of the State conducting the investigation.

*Note 1.— Because the responsibility for release of information on the progress and findings of the investigation rests with the State conducting the investigation, the [Accident Investigation Authority] should ensure that its staff and any advisers from [Name of State] abide by this requirement.*

*Note 2.— Nothing in this requirement precludes, or should delay, the release of information for the purpose of accident prevention (issuance of safety recommendations); however, such release should be coordinated with the State conducting the investigation.*

- s) For accidents involving death or serious injury to [Name of State] citizens that occur in other States, the [Name of State] should appoint an expert, possibly from the [Accident Investigation Authority], in accordance with the provisions of ICAO Annex 13, paragraph 5.27, to:
- 1) visit the scene of the accident;
  - 2) have access to the relevant factual information, which is approved for public release by the State conducting the investigation, and information on the progress of the investigation; and
  - 3) receive a copy of the Final Report.
- t) Reopen an investigation if new and significant evidence becomes available.
- u) Make public the facts, conditions, and circumstances during the course of an investigation with the view toward informing the travelling public and preventing future occurrences.
- v) Identify safety deficiencies during the course of investigations and in the Final Report of the investigation with the view toward promoting safety actions by addressing the recommendations to appropriate authorities, agencies, and organizations charged with aviation safety.
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## Chapter 7

### ACTIONS AT THE ACCIDENT SITE

#### 7.1 GENERAL

##### 7.1.1 Liaison with other authorities

7.1.1.1 The *[Accident Investigation Authority]* has agreements (MoUs) with other agencies and authorities in *[Name of State]* to prepare for the eventuality of an aircraft accident (see Appendix C). Detailed information concerning the role and responsibility of each agency, for each type of emergency, is contained in the ICAO *Airport Services Manual* (Doc 9137), Part 7 — *Airport Emergency Planning*. Although that manual deals primarily with accidents at or near an airport, the role and responsibility of each agency outlined therein may also apply to accidents elsewhere.

7.1.1.2 Victim identification is the responsibility of the coroner and medical officials, the police department and the victim identification team. Medical personnel, such as pathologists and forensic dentists, should be aware of what is expected of them in the event of an aircraft accident, including autopsies and toxicology examinations. The *[Accident Investigation Authority]* has coordinated its needs in advance with the medical specialists in order to facilitate these arrangements.

7.1.1.3 Notification of next of kin is a sensitive task that must be planned and undertaken with great care in order to avoid anomalies, such as multiple or erroneous notifications. In *[Name of State]*, the notification of next of kin is a *[police or medical examiner or air operator]* task. The *ICAO Policy on Assistance to Aircraft Accident Victims and their Families* (Doc 9998) and the *Manual on Assistance to Aircraft Accident Victims and their Families* (Doc 9973) provide further guidance in this regard.

7.1.1.4 Although it is recognized that the circumstances surrounding each accident are different, the importance of proper planning and establishing good liaison with other authorities, particularly the police, the fire department and the search and rescue services, cannot be overemphasized.

7.1.1.5 The *[Accident Investigation Authority]* should likely have to rely on assistance from other civil and military organizations to provide facilities, equipment and additional personnel, i.e. helicopters, heavy lifting and moving gear, metal detectors, communication equipment, and divers. It is important that heavy salvage equipment, such as cranes, bulldozers or lifting helicopters, are readily available. In some cases, a full-scale expedition may have to be organized, requiring additional transportation, food, lodging, etc.

##### 7.1.2 Initial actions at the accident site

7.1.2.1 The local fire department and the police will probably be the first authorities to arrive at an aircraft accident site. It is therefore important to enlist the cooperation of these authorities in order to ensure security and control of accident sites and cooperation during investigations. It is essential that vital evidence is not lost through interference with the aircraft wreckage in the early phases of an investigation. The fire department and the police should be aware of what is expected of them in the event of an aircraft accident. The *[Accident Investigation Authority]* is responsible for coordinating its needs in advance with relevant search and rescue organizations. Plans and arrangements for the following essential tasks should be in place so that they can be accomplished without delay:



- a) notification to the rescue coordination centre (ICAO Annex 12 — *Search and Rescue* refers);
- b) notification to the [*Accident Investigation Authority*] and other authorities, as necessary;
- c) securing the aircraft wreckage from fire hazards and further damage;
- d) checking for the presence of dangerous goods, such as radioactive consignments or poisons being carried as freight, and taking appropriate protective action;
- e) placing guards to ensure that the aircraft wreckage is not tampered with or disturbed;
- f) taking steps to preserve, through photography or other appropriate means, any evidence of a transitory nature, such as ice, snow or soot deposits; and
- g) obtaining the names and addresses of all witnesses whose testimony may assist in the investigation of the accident.

7.1.2.2 Apart from these arrangements, the wreckage should be left undisturbed, to the extent possible, until the arrival of the investigation team. It has been emphasized to the police and the rescue services that the bodies of persons killed in an accident involving a large aircraft should, where practicable, be left *in situ* for examination and recording by the police victim identification team. There may also be times when, for crashworthiness/survival investigation purposes, it may be appropriate for the deceased to be left *in situ* until viewed and documented by the [*Accident Investigation Authority*] investigation team. Similarly, personal belongings should remain untouched, as their location may assist in the identification of the victims. In general, disturbance of the wreckage should be limited to that necessary to rescue survivors, extinguish fires and protect the public.

## 7.2 RESCUE OPERATIONS

7.2.1 The primary concern of the first persons to arrive at the site of an aircraft accident is to rescue and aid survivors and protect property within the means available. Persons who are involved with the extrication of victims from aircraft wreckage should, at the earliest opportunity, record their observations regarding the location in the aircraft where the survivors were found and what portions of the wreckage had to be moved during the rescue.

7.2.2 If circumstances permit, the bodies of persons killed in the accident should be left as found until their location and condition are recorded, photographs are taken and a chart is made indicating their location in the wreckage. If bodies are located outside the wreckage, their location should be marked by a stake with an identifying number. A corresponding label should be attached to each body stating where it was found. The careful recording of these data is essential to the identification of bodies and also provides information which may assist in the accident investigation.

7.2.3 In the event that bodies have been removed from the aircraft wreckage before the arrival of the aircraft accident investigators, it is important to establish whether or not a record, as set out above, has been maintained. If not, the rescue personnel should be interviewed in order to establish such a record.

7.2.4 The [*Accident Investigation Authority*] investigators should determine if there has been any disturbance of the wreckage during the rescue operations and should record any such disturbance.

7.2.5 Upon completion of the initial rescue operation, rescue personnel should exercise as much care as possible to ensure that their movements do not destroy evidence which may be of value to the investigation. For example, once the survivors have been rescued and the fire risk has been eliminated as much as possible, movement of ambulances and fire vehicles should not be permitted along the wreckage trail.

### 7.3 SECURITY AT THE ACCIDENT SITE

7.3.1 When notified of an accident, the IIC or the designated accident site safety and security coordinator should immediately verify that arrangements have been made to ensure the security of the wreckage. This is usually arranged in coordination with the police, but in some cases, military personnel or specially recruited civilians may be employed.

7.3.2 Before investigation work commences at the accident site, the cargo manifest must be checked to ensure there are no hazardous materials in the consigned cargo.

7.3.3 When it is suspected that the aircraft may have carried dangerous cargo such as radioactive consignments, explosives, ammunition, corrosive liquids, liquid or solid poisons or bacterial cultures, special precautions should be taken to station the guards at a safe distance from the wreckage. This is particularly important if a fire has occurred because it tends to disperse the contaminants. Signs indicating a potentially dangerous area should be posted until experts, in consultation with the designated *[Accident Investigation Authority]* site safety and security coordinator have thoroughly evaluated the danger involved.

7.3.4 Upon arrival at the accident site, one of the first tasks of the investigators is to review the security arrangements. The guards should be thoroughly conversant with their duties, which are to:

- a) protect the public from hazards in the wreckage;
- b) prevent disturbance of the wreckage (including bodies and contents of the aircraft);
- c) protect property;
- d) admit to the accident site only persons authorized by the *[Accident Investigation Authority]*; and
- e) protect and preserve, where possible, any ground marks made by the aircraft.

7.3.5 Clear and specific instructions should be given by the *[Accident Investigation Authority]* IIC or accident site safety and security coordinator to those guarding the wreckage site of the need for authorized persons to have proper identification. In the case of major investigations, this should be accomplished through the issuance of photographic identification badges or some form of security pass to all authorized persons. The use of armbands or jackets that show affiliation and duty has also proven to be effective.

7.3.6 If the wreckage has not been scattered, effective security can be achieved by roping off the area. However, if there is a long wreckage trail, the task of securing the site may be formidable, and many guards would be required in a wide perimeter.

7.3.7 The police can be of considerable assistance in liaising with the local population, particularly with regard to locating outlying pieces of wreckage. While persons living in the neighbourhood should be encouraged to report the discovery of pieces of aircraft wreckage, the importance of leaving these pieces undisturbed should also be impressed upon them. Collecting outlying pieces of aircraft wreckage and arranging them into neat piles alongside the main wreckage are sometimes done with good, but misguided, intentions. With no record of where such pieces were found, their value to the investigation is diminished. Similarly, the removal of pieces of aircraft wreckage by souvenir hunters must be prevented.

7.3.8 The aircraft wreckage should be guarded until the IIC is satisfied that all evidence at the site has been gathered. The IIC should review the situation periodically and arrange for the progressive release of guards as appropriate.

*Note.*— With regard to paragraphs 4.4 and 4.5 of this manual, consideration should be made at all times by the IIC for the protection of investigators at the accident site (reference to ICAO Circular 315 — Hazards at Aircraft Accident Sites).

## 7.4 WRECKAGE IN THE WATER

### 7.4.1 Initial actions

7.4.1.1 As soon as it has been determined that the wreckage is in water, efforts must be made to obtain the best technical expertise available. The [Accident Investigation Authority] should call upon the services of the military and other agencies and resources with specialized expertise from outside of [Name of State] to ensure that the aircraft wreckage under water is found and recovered as necessary in a timely manner. As part of its contingency planning for an accident in the water, the [Accident Investigation Authority] has pre-arranged agreements (MoUs) with relevant organizations and States to obtain the necessary specialized assistance. (See Appendix C.)

*Note.*— Experience has shown that the search for and the recovery of the aircraft wreckage underwater is a specialized task requiring experienced personnel and specialized equipment. Specialized agencies should be consulted early to avoid unnecessary delays in locating and recovering the flight recorders and the aircraft wreckage from under water.

7.4.1.2 If the water is shallow (less than 60 m (196 ft) in depth), divers can be effective for search and recovery of the wreckage; however, mapping of the wreckage using side-scanning sonar may need to be used to ensure the safety of the divers. If the wreckage is located in deep water, or conditions make it difficult to use divers, use of the following equipment may be considered:

- underwater equipment used to locate the underwater locating beacons (ULB) on the flight recorders;
- underwater videos and cameras;
- side-scan sonar equipment; and
- manned or unmanned submersibles (remotely operated vehicles (ROVs)).

### 7.4.2 Decision to recover the aircraft wreckage

7.4.2.1 The circumstances and location of an accident should determine whether salvage of the aircraft wreckage is practicable and necessary. In most cases, the aircraft wreckage should be recovered, if it is considered that the evidence it might provide would justify the expense and effort of a salvage operation. If the aircraft wreckage is likely to contain evidence significant to air safety, the [Accident Investigation Authority] should provide the impetus needed to ensure that action is promptly taken to recover the aircraft wreckage. Such action includes obtaining the necessary funding and specialized equipment and personnel for the tasks.

*Note.*—The [Accident Investigation Authority] has established contingency plans with the government to obtain immediate supplemental funding to begin a search and recovery operation for wreckage underwater.

7.4.2.2 There have been several instances where aircraft wreckage has been successfully recovered from deep water. Such recoveries necessitated expensive salvage operations lasting several months, but the results exceeded expectations, and the evidence obtained from the aircraft wreckage established the causes and contributing factors of the accidents and led to accident prevention measures.

### 7.4.3 Aircraft wreckage distribution

Once the aircraft wreckage has been located, a chart plotting the wreckage distribution should be prepared. In shallow waters, divers can achieve this. In deep waters, side-scan sonar and underwater video cameras from remotely operated submersibles may be used. The state of the various pieces of aircraft wreckage, their connection by cables or tubes, the cutting of these connections for salvage operations, etc., should be recorded before lifting the various pieces of aircraft wreckage from the bottom. Usually, the divers are not experienced in aircraft accident investigation and, therefore, detailed briefings will be necessary.

### 7.4.4 Preservation of the aircraft wreckage

7.4.4.1 The rates at which various metals react with salt water vary considerably. Magnesium components react quite violently and, unless recovered within the first few days, may be completely dissolved. Aluminium and most other metals are less affected by immersion in salt water. However, corrosion will rapidly accelerate once the component is removed from the water, unless steps are taken to prevent this from occurring.

7.4.4.2 Once the aircraft wreckage has been recovered, the components should be thoroughly rinsed with fresh water. It may be convenient to hose the aircraft wreckage as it is raised out of the sea prior to it being lowered onto the salvage vessel. Freshwater rinsing does not stop all corrosive action. When large aircraft are involved, it may not be practicable to take further anti-corrosion action on large structural parts. However, all components that require metallurgical examination will require further preservation. The application of a water-displacing fluid should provide additional corrosion protection; fracture surfaces should then be given a coat of corrosion preventive substances such as oil or inhibited lanolin.

7.4.4.3 When organic deposits such as soot deposits or stains require analysis, organic protective substances should not be used. Freshwater rinsing should be employed followed by air drying. When the component is completely dry, it should be sealed in a plastic bag with an inert desiccant such as silica gel.

7.4.4.4 Flight recorders should not be dried, but should be kept immersed in fresh water until the assigned flight recorder specialist assumes responsibility for them. The [Accident Investigation Authority] should never permit flight recorders that have been submerged in water to dry out before reaching the recorder laboratory in order to prevent damage to the recording media.

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## Chapter 8

# ORGANIZATION AND MANAGEMENT OF THE INVESTIGATION

### 8.1 GENERAL

8.1.1 To achieve its purpose, an investigation must be properly planned and managed. The main parts of an investigation must be planned so that the members of an investigation team are aware of their various tasks and have the appropriate qualifications to perform them. The plan must also recognize that these tasks should be coordinated by the IIC, who is the leader of the team.

8.1.2 When a large aircraft is involved, a sizeable team of investigators, set up in specialized groups, is necessary to properly cover all aspects of the investigation. In some investigations, the areas on which the investigation should focus will become evident at an early stage, and the main investigation effort can then be effectively channelled into these relatively specialized areas. Nevertheless, it is still essential that investigators progress systematically through all aspects of the accident. Whether or not the causes of an accident are apparent, the investigation will determine any underlying systemic factors that may have contributed to the accident or its aftermath as well as any non-causal deficiencies that could contribute to future accidents or their aftermath.

8.1.3 In the case of accidents involving small aircraft, the investigation effort is proportionately smaller. The functions are still the same, but the work is undertaken by one or two investigators or, alternatively, by an investigator and a specialist qualified in a particular aspect that requires expert examination. Again, it is stressed that even when small aircraft are involved, pre-investigation planning and use of investigation checklists are essential.

### 8.2 THE INVESTIGATION MANAGEMENT SYSTEM

8.2.1 An accident investigation involving a large or complex aircraft should require a large team of investigators in order to conduct the investigation in the most effective and expeditious way. The effective utilization of the available investigators in a major investigation can be achieved by using an "investigation management system" (reference to ICAO *Manual of Aircraft Accident and Incident Investigation* (Doc 9756, Part II, Chapter 4)). The investigation management system divides the investigation activities into functional areas, each of which can be assigned to a group within the investigation team. Each investigation group should have as many members as are necessary to examine the particular circumstances of the accident.

8.2.2 After the initial visit and walk-through of the accident site, the first management action to be taken by the IIC is to convene an "organizational meeting". At the organizational meeting, the IIC should identify all participants who should be assigned to the team and he or she should excuse others, such as news media, lawyers, insurers, who should not be permitted to be part of the team.

8.2.3 The primary purpose of the organizational meeting is to describe the rules, policies and procedures of the investigation and to organize the team into the specific groups responsible for various aspects of the investigation.

*Note 1.— Attention must be paid to the need to facilitate entry of accredited representatives and advisers from other States involved in the investigation. To this end, the State of Occurrence of the accident must not require any other travel document than a passport of qualified personnel designated or appointed by other States to participate in the investigation. In this connection, reference is to be made to ICAO Annex 9 — Facilitation, Chapter 8, Section B.*

*Note 2.— Organizational meetings should be convened by the [Accident Investigation Authority] IIC for both large and small investigations as part of the investigation management system.*

*Note 3.— If properly planned and organized, the organizational meeting should take less than one hour so that the investigation groups can then begin their important work.*

8.2.4 At the organizational meeting, the IIC should discuss the rights, obligations, and responsibilities of the investigators. The IIC should also discuss the policies and procedures contained in this manual and should make available a copy of this manual for review by all participants to ensure they understand their roles, tasks and duties. Then the IIC should organize the investigators into groups led by senior investigators.

8.2.5 An attendance roster should be circulated for all participants to sign. Signing the attendance roster confirms that the person signing has read, understood, and will comply with the [Accident Investigation Authority] legislation, regulations, policies and procedures during the course of the investigation. Administrative personnel should be assigned to ensure all participants sign the attendance roster for each team meeting.

*Note.— Use of interpreters is important during team meetings, even if all participants appear to fully understand the language being used (most often English) during the meetings. Those persons for whom English is not their first language may have difficulty understanding complex issues discussed at the meetings.*

8.2.6 Depending on the magnitude and circumstances of the accident, several groups may be formed for various technical investigation areas (see Figures 8-1, 8-2 and 8-3).

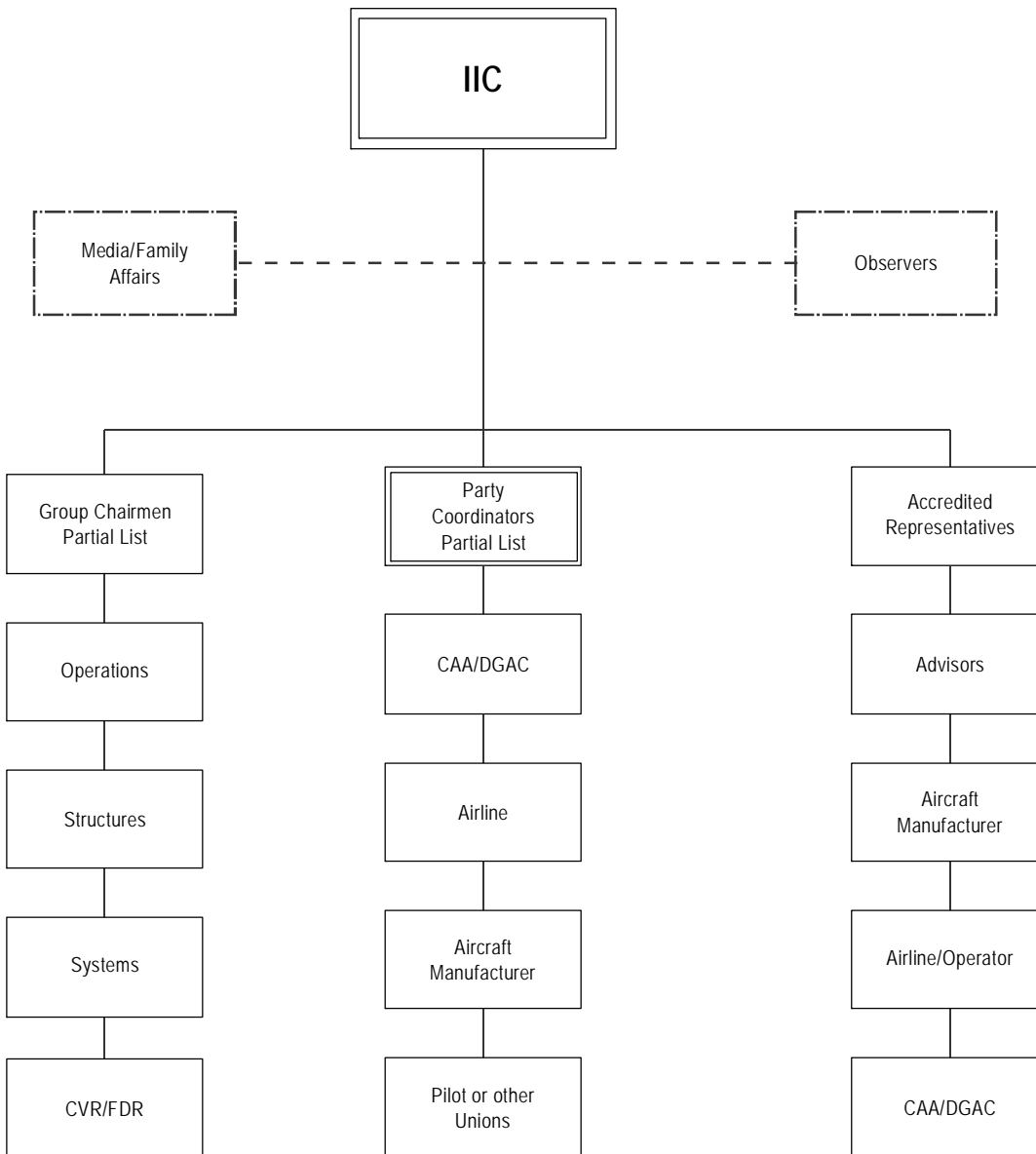
8.2.7 The investigation group chairpersons are senior investigators, each responsible for a specific group. The members of the investigation groups should include specialists from the [Accident Investigation Authority], the airline, the [CAA], the aircraft and engine manufacturers, the airport and employee unions, as appropriate. The groups also may include advisers assigned by the accredited representatives from other States. All members of the group should normally have access to all information uncovered in the course of the investigation and are required to participate in the investigation until the group report is completed.

8.2.8 The investigation groups that might be formed during a major investigation might include: Witnesses, Meteorology/Weather, Air Traffic Services, Aircraft Structures, Aircraft Systems, Powerplants, Maintenance Records, Survival Factors, Human Performance, Aircraft Performance, and Flight Recorders. Other special groups may be formed as the need arises, such as Fire and Explosion, Underwater Recovery, Mock-up, etc. The circumstances and complexity of the accident should determine the number and types of groups required (see Figure 8-3).

*Note 1.— The ICAO Manual of Aircraft Accident and Incident Investigation (Doc 9756), Part II, Chapter 3 — Investigation Responsibilities, provides an overview of the typical responsibilities of investigation team members of a major investigation. In addition, Chapter 4 — Major Accident Investigations, includes information on the Major Accident Investigation Guide (MAIG), which provides the IIC, group chairpersons and other investigation team members with basic major investigation guidelines.*

*Note 2.— The ICAO Manual of Aircraft Accident and Incident Investigation (Doc 9756), Part III, contains detailed guidance on how to conduct specific areas of investigation.*

*Note 3.— Each of the [Accident Investigation Authority] group chairpersons should provide a copy of the relevant guidance materials to his or her group members to review before beginning the investigation.*



**Figure 8-1. Example of how the investigation team may be organized, depending on the nature of the investigation**



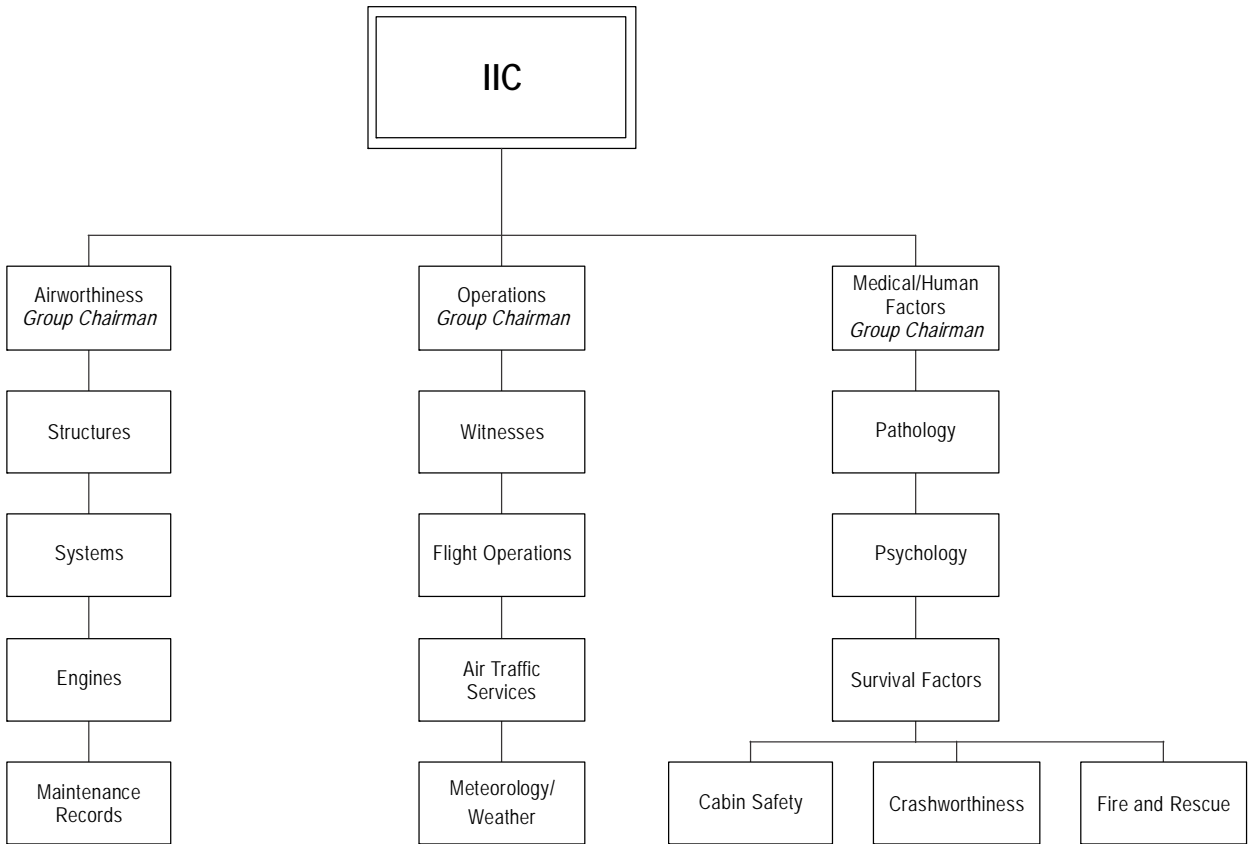
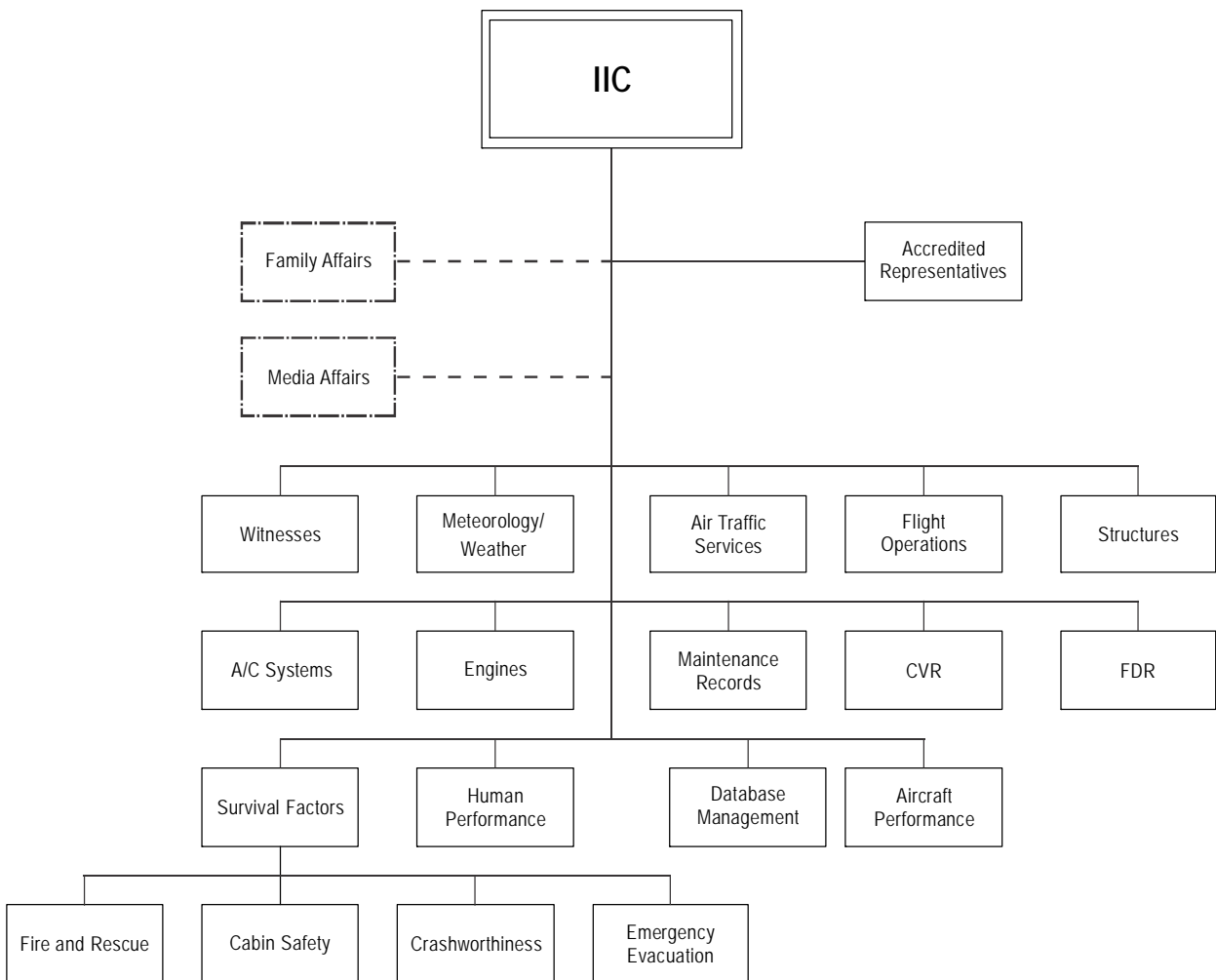


Figure 8-2. Investigation team — Example A



**Figure 8-3. Investigation team — Example B**

8.2.9 In all investigations, a coordinator (spokesperson/team leader) from each of the organizations involved (airline, regulator, manufacturer, etc.) is appointed for liaison duties with the IIC, and to oversee the work of the specialists from their organization. The IIC is the person responsible for communications with the accredited representatives (and their advisors) from other States participating in the investigation in accordance with ICAO Annex 13.

8.2.10 Accident investigation management can be greatly facilitated if the IIC uses a flow chart with a number of events. Each event has a corresponding descriptive phrase. The flow chart allows the investigators to ensure that the essential sequence of events is followed. The ICAO *Manual of Aircraft Accident and Incident Investigation* (Doc 9756), Part II, contains an “Event Checklist” specifically intended to aid accident investigation management by documenting the various stages of the investigation. This checklist should be used as a tool to manage the various investigation steps to be taken to complete the investigation. It is a tool only and must be supplemented by other materials.

8.2.11 Each event checklist should be used in conjunction with the Major Accident Investigation Guide contained in the ICAO *Manual of Aircraft Accident and Incident Investigation* (Doc 9756), Part II; and the specific investigation task materials (checklists) contained in Doc 9756, Part III, and tailored to the particular accident circumstances. Since the investigation tasks may differ due to the circumstances of the accident, the checklists should be reviewed to ensure that the tasks are appropriate to the organization and conduct of the accident investigation. Arranging the activities and tasks into checklists allows the IIC to clearly indicate what has been accomplished and what is to be accomplished by the investigators and the various groups during the investigation. It also makes it easier for the IIC to provide direction and guidance to those persons who are participating in an investigation for the first time and who may require specific advice. The checklists, aside from being part of the investigation management system, establish some order in what is often a confusing situation.

8.2.12 The group chairpersons are responsible for completing the investigation tasks using the relevant checklists to fulfil their various tasks. Therefore, the group chairpersons must be knowledgeable about the investigation management system and the tasks their groups are required to carry out. They should be well aware that the outlined tasks are not necessarily exhaustive and that particular circumstances may warrant revision of tasks. When using the checklists, it is desirable that the investigators take note of the completion date of each task, any further action required or anything of significance associated with a particular task. Regardless of how much planning goes into the preparation of the checklists, there will inevitably be cases in which the outlined tasks will have to be adapted to the particular circumstances of the investigation.

8.2.13 The checklists help the group chairpersons organize the work of their groups, and provide the IIC with a tool to monitor progress. At the daily progress meetings, the investigators should report which tasks on their checklists have been completed since their last report, and the IIC should record that progress on the flow chart. The advantage of this system is the ease with which the progress of the investigation can be reported to headquarters from the accident site and the fact that the flow chart at headquarters can be updated to reflect the current status of the investigation.

8.2.14 The investigation management system is one of the fundamental tools to be used in a major investigation, and an investigator who is likely to be appointed IIC or group chairperson of a major investigation should be familiar with this system prior to attempting to use it in the field. The effectiveness of the system is directly related to how well each investigator adheres to the flow chart and the checklists.

8.2.15 It is the policy of the [Accident Investigation Authority] to use the investigation management system during the conduct of its investigations.

### 8.3 PROGRESS MEETINGS

8.3.1 The investigation management system incorporates the use of a daily progress meeting of the investigation team. The primary purpose of progress meetings is for all team members to participate in the daily reports of the various groups and for all team members to be aware of findings of other groups and to plan future activities. It also builds the "team concept", which is essential for a major accident investigation to be successful. Further, the progress meetings provide the IIC the opportunity to oversee the progress and findings of the investigation and to provide leadership and guidance as necessary.

*Note.— Progress meetings should be held even if the number of investigation team members is small (3 to 5 persons) and may be held in an informal setting, such as in a vehicle at the accident site or similar location. Large progress meetings (10 to 100 persons) should be held in a more formal setting, such as a large room at a hotel or similar location. Holding such meetings is part of the investigation management system.*

8.3.2 The typical format for a progress meeting would be for the IIC to make a general opening statement and to bring the team up to date on developments outside of the team, such as review of maintenance records, reports from

flight recorder read-outs, and other investigation activities being conducted away from the accident site. If new investigators join the team, they will be given the rules, policies, and procedures and assigned to the appropriate group.

8.3.3 Next, the IIC should request that each group chairperson give a brief report. The format of group chairperson reports should be:

- What we did today
- What we found today
- What we plan to do tomorrow
- Any questions, comments, or suggestions

8.3.4 Group reports should be short and concise. Relevant documents, such as weather reports or similar data, should be distributed to other participants and do not have to be read at the progress meeting. Reports and questions should be restricted to factual information. This is not the place to begin to speculate or analyse the causes of the accident. If the progress meeting is organized and managed properly, it should not take more than one hour.

*Note.— When participants have different first languages, the use of interpreters is essential for all persons to gain the full benefit of the progress meeting reports, so they can understand the information to pass on to their superiors and to develop accident prevention measures. In some cases, it would be appropriate for the group chairpersons to provide advance hard copies of their briefing notes for participants to follow during those oral briefings.*

8.3.5 Following the progress meeting, the IIC should report findings and progress to his or her superiors and should prepare for possible media and family briefings.

## 8.4 COOPERATION WITH THE MEDIA

8.4.1 All major aircraft accidents and most small accidents generate a high degree of interest from the public and the media. A good rapport with the media is usually an asset to the investigation. It may be necessary to enlist the cooperation of the local media to withhold precise details of the location of an aircraft accident until adequate crowd control measures can be implemented. It may also be necessary to enlist the aid of the media in obtaining further information about the local area, the names of possible witnesses or when seeking the public's assistance in recovering missing pieces of the aircraft wreckage.

8.4.2 To promote dissemination of factual information and to minimize speculation and rumours about the accident, the [Accident Investigation Authority] should provide the media, on a regular basis, with details of the progress of the investigation and facts that can be released without prejudice to the investigation. For this reason, the IIC and the [Accident Investigation Authority] should establish a single point of contact for media inquiries. This contact is usually the IIC or a person designated by the [Accident Investigation Authority Head/Chief] or the IIC. The IIC, in consultation with the accredited representatives, should provide unprejudicial facts and circumstances to the media. Nevertheless, it is necessary to ensure that the needs of the media do not interfere with the proper conduct of the investigation. The media should be informed that a preliminary (factual) report will be released about 30 days after the accident.

8.4.3 Other agencies and organizations involved or affected by the accident (such as airlines, airport authorities, emergency services, and aircraft manufacturers) may also need to release information to the media about their involvement, and such efforts should be coordinated, to the extent possible, among the agencies and organizations involved. Nonetheless, the [Accident Investigation Authority] is the primary point of contact and the only organization permitted to release information on the progress and findings of the investigation.

8.4.4 For accident investigations outside *[Name of State]* and conducted by other States, the *[Accident Investigation Authority]*-appointed accredited representative and the advisers participating in the investigation shall not give the media or the public access to any information or documents obtained during the investigation without the express consent of the State conducting the investigation. The release of such information by the *[Accident Investigation Authority]* or other *[Name of State]* officials, without the consent of the State conducting the investigation, would undermine the mutual confidence and cooperation among the States involved and must therefore be avoided.

## 8.5 DEALING WITH FAMILIES OF ACCIDENT VICTIMS

8.5.1 The *ICAO Policy on Assistance to Aircraft Accident Victims and their Families* (Doc 9998) and the *Manual on Assistance to Aircraft Accident Victims and their Families* (Doc 9973) contain internationally accepted guidance and practices for States to follow when dealing with aircraft accident victims and their families.

8.5.2 Victims and their families are not permitted to participate in the investigation; however, ICAO Annex 13, paragraph 5.27, "States having suffered fatalities or serious injuries to their citizens", provides certain rights and entitlements to States having a special interest in an accident by virtue of fatalities or serious injuries to their citizens. Specifically, such States are permitted to appoint an "expert", who shall be entitled to:

- a) visit the scene of an accident;
- b) have access to the relevant factual information, which is approved for public release by the State conducting the investigation, and information on the progress of the investigation; and
- c) receive a copy of the Final Report.

8.5.3 This should not preclude the State from also assisting in the identification of victims and in meeting with survivors from that State.

8.5.4 These provisions do not permit the appointed expert to actively participate in the investigation.

*Note.— For accidents that occur outside [Name of State] that involve [Name of State] citizens, it may be necessary for [Name of State] to send experts to assist the other State with the identification of victims. This task is not directly related to accident investigation and does not fall under the mandate of the [Accident Investigation Authority]. Although the [Accident Investigation Authority] may not be required to provide an expert(s) for this task, the [Accident Investigation Authority] should encourage the relevant [Name of State] foreign affairs authorities and personnel to provide such assistance, normally through the [Name of State] Embassy in the other State.*

8.5.5 ICAO Annex 9 — *Facilitation*, Chapter 8, Section I — *Assistance to aircraft accident victims and their families*, contains SARPs related to States' obligations to facilitate entry into their territory, on a temporary basis, of family members of victims of aircraft accidents. *[Name of State]* should extend all necessary assistance, such as issuing emergency travel documents, arranging transport, and clearing customs for families of aircraft accident victims.

*[[Note.— Some States have legislation specifically dealing with the handling of families and aircraft accident victims. This section of the manual should be tailored to be consistent with such requirements. If there are no formal requirements in the State, the manual should address, in general, how the families and victims should be dealt with, in order to comply with ICAO requirements in this regard. Suggested text is provided below.]]*

8.5.6 The general responsibilities for dealing with the families and aircraft accident victims lie with the airline, which should have in place a plan for dealing with families and victims of aircraft accidents. However, the State of Occurrence should provide oversight of such activities. Therefore, the *[Accident Investigation Authority]* should establish

liaison with relevant family members or their representatives, to facilitate the provision of briefings on the progress of the investigation, and to facilitate the necessary access for other States' experts, in accordance with the provisions of ICAO Annex 13, paragraph 5.27, and the ICAO *Manual on Assistance to Aircraft Accident Victims and their Families* (Doc 9973).

## 8.6 SECURING THE RECORDS, SAMPLES AND RECORDINGS

The *[Accident Investigation Authority]* procedures require that, in the event of an accident, all air traffic services communication recordings and documents deemed to be associated with the flight, and aviation meteorology data, be secured and placed in protective custody. The *[Accident Investigation Authority]* has agreements (MoUs) with the relevant organizations to fulfil this requirement (see Appendix C). Further instructions are in place, which require that the aircraft operator's documentation associated with the aircraft, the flight crew and the flight operation is placed in safekeeping.

## 8.7 REMOVAL OF THE AIRCRAFT WRECKAGE

Detailed information concerning planning, equipment and procedures for the removal of disabled aircraft at airports is contained in the *Airport Services Manual* (Doc 9137), Part 5 — *Removal of Disabled Aircraft*.

## 8.8 RELEASE OF THE AIRCRAFT WRECKAGE

8.8.1 The aircraft wreckage should remain under the custody of the *[Accident Investigation Authority]* until such time as it should be released back to the owner of the aircraft, or the owner's representative (insurance company). In many cases, the aircraft wreckage should be released in increments, depending on the needs of the investigators for testing of selected components.

8.8.2 For accidents in *[Name of State]* involving aircraft registered and operated by other States, the *[Accident Investigation Authority]* should facilitate the release from custody of the aircraft, its contents, or parts thereof, as soon as they are not required for the investigation, to person(s) duly designated by the State of Registry or State of the Operator. This provision is particularly important when occurrences involve minimal damage to an aircraft that needs to be repaired and returned to service.

8.8.3 Portions of the aircraft wreckage may be released, or the entire aircraft wreckage may be released, using the aircraft wreckage and parts release form (see Appendix F) that includes the name and organizational information of the IIC and the owner of the aircraft or the owner's authorized representative. The release form should include the identifying information on the accident and the aircraft.

8.8.4 If the entire aircraft wreckage is to be released, the IIC should sign the aircraft wreckage and parts release form and he or she should obtain a signature from the owner of the aircraft, or the owner's representative, who accepts the aircraft wreckage. If only portions of the aircraft wreckage are being released, the aircraft wreckage and parts release form should list the components being released and any components being retained for further examination, along with the appropriate signatures verifying the release and retention of parts. Each time a portion of the aircraft wreckage is released, an additional aircraft wreckage and parts release form should be completed to document the transfer.

*Note.— The [Accident Investigation Authority] IIC should obtain full concurrence with all parties, including police involved in the investigation, about the decision to release aircraft wreckage before it is turned over to the owner of the aircraft or the owner's representative. The IIC should also coordinate his or her decision with the [Accident Investigation Authority] management personnel.*

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## Chapter 9

# TESTS AND COMPONENT EXAMINATIONS

### 9.1 LABORATORY TESTING OF AIRCRAFT SYSTEMS AND COMPONENTS

9.1.1 In many cases, specialist examinations or testing of specific components will be required. The *[Accident Investigation Authority]* should follow the same policies and procedures for tests and component examinations as used for the accident site phase of the investigation. The ICAO *Manual of Aircraft Accident and Incident Investigation* (Doc 9756), Part I, paragraph 5.7, contains guidance on planning specialists' off-site examinations of components.

9.1.2 Specialist examinations may range from a scanning electron microscope (SEM) examination of a failed part to chemical analysis, and/or aircraft systems testing or flight testing. Laboratory examination and testing generally entail the use of specialized equipment not available at the accident site and are often beyond the capability of an aircraft maintenance facility. Consideration should be given to using the component manufacturer's facilities where specialized equipment and trained personnel are readily available. However, this should require close supervision by the *[Accident Investigation Authority]* investigators, or by investigators designated by the *[Accident Investigation Authority]* to ensure that there is no real or perceived conflict of interest. All activities, particularly disassembly and testing phases, should be documented and photographed for evidence purposes.

9.1.3 Specialist examinations may also be needed to conduct the read-out and decoding of information from other electronic devices, such as satellite navigation equipment (e.g. GPS, GLONASS, GPWS, TAWS, FMS).

9.1.4 Laboratory testing should not be limited to standard tests. In addition to testing for compliance with appropriate specifications, it may sometimes be necessary to determine the actual properties of the specimen (such as metal, material, fuel and oil). Occasionally, it is necessary to devise special tests that fully exploit components' capabilities. A wide range of specialized testing equipment permit simulation of a variety of malfunctions.

9.1.5 When investigators send failed parts or components for laboratory testing, they should provide as much information as possible relative to the circumstances contributing to the failure of such parts or components, including their own hypotheses and suspicions. The information provided by the investigator is intended only as a guideline to the specialist who should, nevertheless, explore all relevant aspects. It is not sufficient for an investigator to send parts for specialist examination with the limited instructions "for testing". The investigator should provide a detailed history of the part or component, covering such items as:

- the date it was installed on the aircraft;
- the total number of service hours;
- the total number of hours since the last overhaul or inspection;
- previous difficulties reported; and
- any other pertinent data that might shed light on how and why the part or component failed.



*Note.— If not accompanied by a [Accident Investigation Authority] investigator, arrangements should be made for supervision by an investigator from the State where the testing is to take place, or an investigator from another State, or a properly designated independent person.*

9.1.6 In order to preserve evidence, it is essential that failed parts and components requiring specialist examination be extracted from the wreckage with care. Consultations with experts from the aircraft manufacturers and airlines should be held to ensure proper decisions. Aircraft systems, whether mechanical, electrical, hydraulic or pneumatic, will be removed in sections as large as is practicable. Relevant sections should preferably be dismantled rather than cut off. Paint smears, which are often extremely important in collision accidents and inflight failures, require protection. This also applies to smoke or soot smears.

## 9.2 PRACTICAL ARRANGEMENTS

9.2.1 The nature of the specialist examinations and the type of components and systems to be tested should determine the facility to be chosen. The investigator must be confident that the facility chosen is capable of providing the required examination and testing. Prior arrangements should be made with the facility as far in advance as practicable so that the management of the facility can plan the tests and assign personnel and equipment.

9.2.2 When choosing a system and components for specialist examination and testing, it is desirable to include as many components of the system as practicable, e.g. wiring harnesses, relays, control valves and regulators. Tests conducted on a single component should reveal information about the operation of that particular unit only, whereas the problem may actually have been in one of the related components. The most valid test results should be obtained by using as many of the original system components as possible.

9.2.3 Each component should be tagged with its name, part number, serial number and the accident identifier. The investigator should maintain a listing, descriptive notes and photographs of all components, which are to be tested; the components themselves should be kept in protective storage until ready for shipping.

9.2.4 Components should be packed to minimize damage during transport. Particular care should be taken to ensure that fracture surfaces are protected by appropriate packing material so that surfaces coming into contact with each other or with other parts do not suffer any damage.

9.2.5 Whenever possible, power plants should be shipped in their special stands and containers. Other heavy components, such as flight control power units, stabilizer screw jack assemblies and actuators, should be packed in protective wrapping and placed in separate wooden containers. Blocks or bracing should be installed inside the containers to prevent any movement of the component during transport. Smaller and lighter components should be shipped in the same manner with more than one to a box, but in a way which prevents them from coming into contact with one another. Very light units should be packed in heavy corrugated pasteboard cartons with packing material sufficient to prevent damage from mishandling during transport. The investigators should label all boxes and cartons appropriately and should make an inventory list for each container.

9.2.6 Occasionally, it may be necessary to send a part, or parts, of a damaged aircraft to another State for technical examination or testing. In accordance with ICAO Annex 9 — *Facilitation*, Chapter 8, Section B, each State concerned shall ensure that the movement of such part, or parts, is effected without delay. The States concerned shall likewise facilitate the return of such part, or parts, to the State conducting the investigation.

### 9.3 NOTES AND TEST RESULTS

9.3.1 Prior to conducting the examinations and tests, the investigator(s) and the facility personnel involved should be briefed on the type and extent of the tests to be carried out and should review the test procedures to ensure their adequacy. Basically, a written test plan should be prepared and agreed to by all participants before proceeding with any testing. The test plan becomes a written record of the planning and conduct of the component investigation.

*Note.— A good technique for developing a test plan is to ask the manufacturer of the component to prepare a draft test plan protocol, which should then be reviewed and agreed upon by all participants in the examination. However, the final decision on the test plan rests with the [Accident Investigation Authority].*

9.3.2 Any discrepancies found during testing should be photographed and documented with an explanation as to their bearing on the operation of the system or component. It should be kept in mind that the tolerances called for in the test procedures may only apply to new or overhauled components and that components which have been in service for some time may have acceptable limits outside these tolerances. If the nature of the discrepancy so warrants, a component should be disassembled following completion of the tests to ascertain the cause of failure. Photographs should be taken of the parts prior to and during disassembly, and the findings should be documented in writing.

9.3.3 Consideration should be given to X-raying components before disassembly if the position of springs, contacts, etc., could be lost during the disassembly.

9.3.4 Off-scene tests and examinations should be completed under the same rules and procedures for the on-scene phase, which excludes non-technical personnel. However, in some cases, other personnel, not part of the investigation team, may be ordered to participate or observe by a judicial authority. In such cases, investigators must ensure that they do not discuss their opinions, or make comments on any findings or analyses in the presence of these non-technical third parties.

9.3.5 If insurance loss assessors or other parties who are not part of the investigation team have been approved to attend and observe the disassembly, the investigator and test facility personnel must take extreme care. Findings and analyses should not be discussed in the presence of non-investigation personnel, because they may use such information inappropriately.

9.3.6 Following completion of the testing, the investigator(s) and facility personnel should review and discuss the results. When there is agreement that the data gathered present a true and factual picture of the condition and capabilities of the components, the notes and test results should be reproduced into field notes to serve as a record of the examination and testing of the system or component.

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## **REPORTING**



## Chapter 10

# WRITING THE FINAL REPORT AND MAKING SAFETY RECOMMENDATIONS

### 10.1 GENERAL

10.1.1 The *[Accident Investigation Authority]* should issue a Final Report for all investigations. The format and content of the Final Report should be in accordance with guidance contained in Appendix 1 to ICAO Annex 13 and in the *ICAO Manual of Aircraft Accident and Incident Investigation (Doc 9756)*, Part IV — *Reporting*. The circumstances of an occurrence and the safety issues involved should determine the size and scope of the Final Report. For all occurrences involving aircraft registered, operated, designed, or manufactured outside *[Name of State]*, full adherence to the ICAO format should be maintained. In accordance with ICAO Annex 13, the report should be clear and concise.

10.1.2 It is the policy of the *[Accident Investigation Authority]* to complete and to make the Final Report publicly available as soon as possible. The Final Report may be made public by posting it on the *[Accident Investigation Authority]* website, as well as by sending a hard copy to all States involved and ICAO, as per Annex 13 provisions.

10.1.3 After the completion of the field phase of the investigation, the *[Accident Investigation Authority]* should ensure that the IIC develops a report completion schedule that includes target dates for completion of the Final Report. Target dates should be consistent with the complexity of the safety issues involved in the occurrence.

10.1.4 The general target date for completion of “small” occurrence investigations with minimal safety issues is not more than six months from the date of the occurrence. The target date for completion of major occurrences with complex safety issues is usually twelve months, or as soon as possible.

10.1.5 If for some reason the Final Report cannot be made publicly available within twelve months, the *[Accident Investigation Authority]* should make an interim statement publicly available on each anniversary of the occurrence, detailing the progress of the investigation and any safety issues raised. The *[Accident Investigation Authority]* should also issue interim reports and/or safety recommendations at any time deemed necessary to highlight any safety issues that may be of interest to other States and/or organizations.

### 10.2 GROUP REPORTS

#### 10.2.1 Field notes

Each investigation group completes “field notes” during the field phase of the investigation and for all component examinations and test work. Field notes should be completed in the same format as factual reports (see 10.2.2 below). Upon completion of the field notes, each member of the group should sign them, signifying their agreement with the content, accuracy and completeness of the notes. If any of the group members did not take part in some portion of the fact-finding, this aspect should be noted under his or her signature. Similarly, if differences cannot be resolved between a group member and the group chairperson, the substance of the disagreement should be stated in the field notes under the signature.

## 10.2.2 Factual reports

10.2.2.1 Factual reports are derived from the field notes and enhanced with follow-up investigation work.

10.2.2.2 In consultation with the group members, the *[Accident Investigation Authority]* group chairperson is responsible for scrutinizing the evidence gathered in relation to the tasks assigned to the group, and for drafting a group report, which presents all the facts relevant to the activities of the group. The group factual report may also include attachments to the report (e.g. maps, charts, or other documents) that support the written record of the investigation. Referred to as the “group factual report”, the draft should be shared with other specialists who participated in this phase of the investigation, as well as accredited representatives and their advisers participating in the investigation. This consultation is for the purpose of ensuring completeness and accuracy, hereafter referred to as the “technical review” (see 10.3 below). After consultation and revision of the group factual reports, copies should be provided to all organizations and specialists that participated in the investigation.

10.2.2.3 A group factual report should be presented in the following format:

<i>Flight Operations Group Factual Report (or field notes) / (date)</i>	
A.	<p><i>Accident:</i> XXXX (<i>identifying code number assigned by [Name of accident investigation authority]</i>)</p> <p><i>Location:</i> XXXX [<i>city, State, country</i>]</p> <p><i>Date/Time:</i> XXXX</p> <p><i>Aircraft:</i> XXXX [<i>make, model, registration</i>]</p>
B.	<p><i>Group members</i></p> <p>XXXX <i>Group chairperson</i></p> <p>XXXX <i>Airline specialist</i></p> <p>XXXX <i>[CAA] specialist</i></p> <p>XXXX <i>Manufacturer specialist</i></p>
C.	<p><i>Summary</i></p> <p><i>This section should provide a synopsis of the occurrence, such as flight number, take-off time, accident time (if known), number of persons on board, injuries, etc. This section should also contain a brief synopsis of the scope of the group’s work. The terms of reference for the group and subgroups and brief details of the time and location of investigation activities should also be recorded in this section. For example, “the Flight Operations Group interviewed the pilots, reviewed records, and conducted simulator work” and, “the Aircraft Systems Group documented the aircraft components on-scene, removed some parts, and conducted component examinations at the facilities of the manufacturer”.</i></p>
D.	<p><i>Details of Investigation</i></p> <p><i>The facts, conditions and circumstances established by the group and investigation findings (factual) should be presented under appropriate headings describing the areas investigated. For example, in the case of the Flight Operations Group, headings would include crew histories, flight planning, dispatch and aircraft mass and balance. All the relevant facts, whether or not considered significant to the findings of the group, should be included. Relevant documentation should be attached to the group report.</i></p>

10.2.2.4 In some cases, after completion of the group factual report, new investigative activities may require addenda to document unforeseen or other follow-up investigative activities. The addenda should follow the same format as the group factual report.

### 10.3 TECHNICAL REVIEW

10.3.1 Once the investigation is complete and all group reports and other factual data are available, the *[Accident Investigation Authority]* should convene a technical review meeting at which all of the factual materials collected during the investigation should be reviewed one last time before the writing of the Final Report is initiated. Accredited representatives and their advisers, and other parties that participated in the investigation, have one more opportunity to ensure that the factual record of the investigation is complete, objective and accurate. The IIC should attempt to achieve full concurrence with all of the factual material before moving to the Final Report writing phase.

10.3.2 In some smaller accident cases, the technical review meetings could be held by conference call or by email and correspondence. However, for major airline accidents with complex safety issues, a full technical review meeting should be convened.

10.3.3 At the completion of the technical review, if full concurrence about the factual data collected cannot be reached, the investigation may need to be reopened to resolve disagreements. Any unresolved differences should be noted in the factual record of the investigation.

### 10.4 FORMAT OF THE FINAL REPORT

#### 10.4.1 General

10.4.1.1 All *[Accident Investigation Authority]* accident and incident reports should contain the following reference to the objective of the investigation in the Introduction or Foreword:

*In accordance with ICAO Annex 13, it is not the purpose of an aircraft accident or incident investigation to apportion blame or liability. The sole objective of the investigation is the prevention of accidents and incidents. (Reference: ICAO Annex 13, Chapter 3, paragraph 3.1.)*

10.4.1.2 Appendix 1 of ICAO Annex 13 contains the general format for the Final Report. Furthermore, detailed guidance regarding the format and content of the Final Report is contained in the ICAO *Manual of Aircraft Accident and Incident Investigation* (Doc 9756), Part IV — *Reporting*, Appendix 1 to Chapter 1. The ICAO format and guidance should be followed for most *[Accident Investigation Authority]* Final Reports. For some incidents and non-major accidents, the format of the report may differ, as all of the ICAO Annex 13 headings may not be applicable. These reference materials are not repeated herein.

#### 10.4.2 Chapters 1 and 2 of the Final Report

The *[Accident Investigation Authority]* should follow the ICAO format for Chapters 1 and 2 of the Final Report. Chapter 1 — *Factual Information*, should contain a comprehensive record of the facts, conditions, and circumstances established in the investigation. Chapter 2 — *Analysis*, should contain the significance of the relevant facts and circumstances that contributed to the accident or incident. This portion of the report should also contain the identification of safety deficiencies uncovered during the investigation, regardless of whether those deficiencies contributed to the accident. Supporting documents that are required to support the facts, analysis, conclusions, and recommendations should be included in appendices to the Final Report.



### 10.4.3 Chapter 3 of the Final Report — Conclusions

*[[Note.— The format for Chapter 3 varies somewhat for different States, depending on their specific laws, policies, and procedures. ICAO Annex 13, paragraph 6.1 acknowledges that the format may be adapted to the circumstances of the accident or incident. For example, States may use “causes” or “contributing factors”, or both, in Chapter 3 of the Final Report. Some States specify “probable causes”, while a few other States merely list findings, linking them as causal or contributory to the accident. All of these formats are consistent with the guidance contained in ICAO Annex 13 and the ICAO Manual of Aircraft Accident and Incident Investigation (Doc 9756), Part IV — Reporting. Consequently, the following suggested language may require modification by States to bring the language in the policies and procedures manual in line with their specific requirements.]]*

The *[Accident Investigation Authority]* should include in Chapter 3 of the Final Report a list of findings *[causes and/or contributing factors]*. The *[Accident Investigation Authority]* should include both the immediate and the deeper systemic causes in the Final Report. The *[Accident Investigation Authority]* should use the guidance provided in the ICAO *Manual of Aircraft Accident and Incident Investigation* (Doc 9756), Part IV — Reporting, Appendix 1 to Chapter 1, Table 1-3 — Example of causal statements, and Appendix 2 to Chapter 1 — Report Writing Conventions, in the formation of its findings, causes and contributing factors. The *[Accident Investigation Authority]* should also include the following statement at the appropriate location in Chapter 3: *The identification of causes and/or contributing factors does not imply assignment of fault or the determination of administrative, civil or criminal liability.*

### 10.4.4 Chapter 4 of the Final Report — Safety Recommendations

*[[Note.— The format for Chapter 4 varies somewhat for different States, depending on their internal policies and procedures. Some States divide Chapter 4 into two parts: “Safety Actions Taken” and “Safety Recommendations”. Safety actions taken may result from formal safety recommendations issued during the course of the investigation or as the result of corrective actions taken by the airline, manufacturer, [CAA], etc., without the issuance of formal safety recommendations. Both actions should be recorded in Chapter 4 as suggested in the following text.]]*

The *[Accident Investigation Authority]* should include in Chapter 4 of the Final Report both safety recommendations made for the purpose of accident prevention, as well as any safety (corrective) actions taken during the course of the investigation. The *[Accident Investigation Authority]* should use the guidance provided in the ICAO *Manual of Aircraft Accident and Incident Investigation* (Doc 9756), Part IV — Reporting, Chapter 1, when issuing safety recommendations during the course of the investigation and in its Final Reports. (See 10.8 for further details on safety recommendations.)

## 10.5 CONSULTATION

10.5.1 The *[Accident Investigation Authority]* should follow the consultation provisions of ICAO Annex 13, Chapter 6. A confidential draft Final Report should be forwarded to all States that participated in the investigation requesting their substantive and relevant comments. The States include:

- a) the State that instituted the investigation;
- b) the State of Registry;
- c) the State of the Operator;
- d) the State of Design;

- e) the State of Manufacture; and
- f) any State that participated in the investigation as per Annex 13, Chapter 5.

10.5.2 In order to obtain substantive technical consultation on the draft Final Report, the *[Accident Investigation Authority]* should send, through the State of the Operator, a copy of the draft Final Report to the operator to enable the operator to submit comments. Similarly, the *[Accident Investigation Authority]* should send, through the State of Design and the State of Manufacture, a copy of the draft Final Report to the organizations responsible for the type design and the final assembly of the aircraft to enable them to submit comments.

10.5.3 The letter of transmittal for the draft Final Report should also request each recipient to notify the *[Accident Investigation Authority]* of any interim safety actions taken, or safety actions under way, that can be included in the Final Report. Comments should be received within sixty days, unless a mutually agreed delay is granted. If the comments from another State are accepted, the draft Final Report should be amended. If the *[Accident Investigation Authority]* does not agree with the comments, in part or in whole, then the comments from that State should be appended to the Final Report, unless that State elects not to have their comments appended.

10.5.4 The draft Final Report should also be forwarded to the key parties in *[Name of State]* (airline, *[CAA]*, aircraft manufacturer, etc.) that participated in the investigation in order to obtain their substantive and relevant comments. The same procedures for timing of receipt of comments and handling of the comments as specified in ICAO Annex 13, Chapter 6 should be followed for the parties from *[Name of State]*.

*Note.— The [Accident Investigator Authority] should include intended safety recommendations in the draft Final Report, inviting comments from recipients.*

## 10.6 RECIPIENTS OF THE FINAL REPORT

The *[Investigation Authority]* should forward with minimum delay a copy of the Final Report to:

- a) the State that instituted the investigation;
- b) the State of Registry;
- c) the State of the Operator;
- d) the State of Design;
- e) the State of Manufacture;
- f) any State that participated in the investigation;
- g) any State having suffered fatalities or serious injuries to its citizens; and
- h) any State that provided relevant information, significant facilities or experts.

## 10.7 DISTRIBUTION AND PUBLICATION OF FINAL REPORTS

10.7.1 Lessons learned during the investigation contained in the Final Report are important for improving aviation safety. Wide distribution of the Final Report is essential for the prevention of future occurrences and to inform the general public. Accordingly, the *[Accident Investigation Authority]* should adhere to the requirements of ICAO Annex 13, paragraph 6.5 and should make Final Reports publicly available as soon as possible and, if possible, within twelve months.

10.7.2 The *[Accident Investigation Authority]* should distribute copies of the Final Report to all States and parties that participated in the investigation, as well as to the families of the victims of the accident when requested. The *[Accident Investigation Authority]* should also forward copies of the Final Report to ICAO, when the aircraft involved has a maximum mass of over 5 700 kg.

10.7.3 Transparent distribution to the general public assists in maintaining public confidence in the aviation system. The *[Accident Investigation Authority]* should make the Final Report available to the general public on its website.

10.7.4 If the Final Report cannot be made publicly available within twelve months, the *[Accident Investigation Authority]* should make an interim statement publicly available on each anniversary of the occurrence, detailing the progress of the investigation and any safety issues raised.

## 10.8 SAFETY RECOMMENDATIONS

### 10.8.1 General

10.8.1.1 Because the sole objective of accident and incident investigations are conducted in accordance with ICAO Annex 13, at any stage of the investigation the *[Accident Investigation Authority]* should recommend in a dated transmittal correspondence to the appropriate authorities in *[Name of State]*, as well as authorities in other States, any prevention action that it considers necessary to be taken promptly to enhance aviation safety. The *[Accident Investigation Authority]* should address, when appropriate, any safety recommendations arising from its investigations in a dated transmittal correspondence to the accident investigation authorities of other States concerned and, when ICAO documents are involved, to ICAO.

10.8.1.2 Furthermore, the *[Accident Investigation Authority]* should encourage that all participants in an investigation take appropriate and immediate safety actions to correct identified safety deficiencies, without the need for the issuance of formal safety recommendations.

10.8.1.3 The *[Accident Investigation Authority]* investigators should provide information on any safety issues identified, safety actions already taken, and proposals for safety recommendations to be considered for inclusion in the Final Report. The *ICAO Manual of Aircraft Accident and Incident Investigation (Doc 9756)*, Part IV — *Reporting*, contains detailed guidance on formulating safety recommendations and language for writing safety recommendations.

### 10.8.2 Follow-up of safety recommendations

10.8.2.1 The *[Accident Investigation Authority]* has a safety recommendation “tracking system” to ensure follow-up on safety recommendations issued to organizations in *[Name of State]* and to other States to determine if safety actions have been taken to satisfy the recommendations, if actions are planned, or the reasons why the recipients are not taking

actions. For safety recommendations received from another State, the *[Accident Investigation Authority]* should inform the proposing State, within ninety days of the transmittal correspondence, of safety actions taken or under consideration, or the reasons why no actions should be taken.

10.8.2.2 Records of outgoing and incoming safety recommendation follow-up correspondence with *[Name of State]* organizations and with other States are maintained as part of the accident investigation files at the *[Accident Investigation Authority]*.

10.8.2.3 The *[Accident investigation Authority]* has procedures in place to monitor the progress of actions taken in response to safety recommendations received.

## 10.9 REOPENING OF AN INVESTIGATION

If, after the investigation has been closed, even after the Final Report has been released, new and significant evidence becomes available, or if the original analyses were determined to have been made in error, the *[Accident Investigation Authority]* will reopen the investigation to examine any new evidence or erroneous analyses. Depending on the results of the reopened investigation, the *[Accident Investigation Authority]* should correct the factual record of the investigation and publish a revised Final Report as appropriate.

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## Chapter 11

# REPORTING TO THE ICAO ACCIDENT/INCIDENT DATA (ADREP) REPORTING SYSTEM

### 11.1 ADREP PRELIMINARY REPORTS

11.1.1 When the aircraft involved in an accident is of a maximum mass of over 2 250 kg, the *[Accident Investigation Authority]* will send the Preliminary Report (reference to ICAO Annex 13, Chapter 7, paragraph 7.1) to:

- a) the State of Registry or the State of Occurrence, as appropriate;
- b) the State of the Operator;
- c) the State of Design;
- d) the State of Manufacture;
- e) any State that provided relevant information, significant facilities or experts; and
- f) ICAO.

11.1.2 When an aircraft involved in an accident has a mass of 2 250 kg or less, and when airworthiness or matters considered being of interest to other States are involved, the *[Accident Investigation Authority]* should forward the Preliminary Report (reference to ICAO Annex 13, Chapter 7, paragraph 7.2) to:

- a) the State of Registry or the State of Occurrence, as appropriate;
- b) the State of the Operator;
- c) the State of Design;
- d) the State of Manufacture; and
- e) any State that provided relevant information, significant facilities or experts.

11.1.3 The Preliminary Report will be sent within 30 days of the date of the accident. When matters directly affecting safety are involved, the Preliminary Report will be sent as soon as the information is available and by the most suitable and quickest means available (reference to ICAO Annex 13, Chapter 7, paragraph 7.4).

11.1.4 The *[Accident Investigation Authority]* will dispatch the Preliminary Report to the States involved and ICAO, in accordance with ICAO Annex 13, Chapter 7, paragraphs 7.1 to 7.4.

## 11.2 ADREP ACCIDENT/INCIDENT DATA REPORTS

11.2.1 When the aircraft involved in an accident is of a maximum mass of over 2 250 kg, the *[Accident Investigation Authority]* will send, as soon as practicable after the investigation, the Accident/Incident Data Report to ICAO. Further, the *[Accident Investigation Authority]* should, upon request, provide other States with pertinent information in addition to that made available in the Accident/Incident Data Report (reference to ICAO Annex 13, Chapter 7, paragraphs 7.5 and 7.6).

11.2.2 When the *[Accident Investigation Authority]* conducts an investigation into an incident to an aircraft of a maximum mass of over 5 700 kg, the *[Accident Investigation Authority]* will send, as soon as is practicable after the investigation, the Incident Data Report to ICAO (reference to ICAO Annex 13, Chapter 7, paragraph 7.7).

11.2.3 The *[Accident Investigation Authority]* will dispatch the Accident/Incident Data Report to the States involved and ICAO, in accordance with ICAO Annex 13, Chapter 7, paragraphs 7.5 to 7.7.

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## Chapter 12

### ACCIDENT PREVENTION MEASURES

*[[Note.— Annex 13, Chapter 8 and Annex 19 — Safety Management, Chapter 5, contain requirements on accident prevention-related measures, including safety data and safety information collection, analysis, protection, sharing and exchange of information. This chapter should include the details of the State's accident prevention measures in place, as well as its policies and procedures for analyses and sharing of data from such systems. Suggested text follows.]]*

#### 12.1 ACCIDENT AND INCIDENT DATABASE

12.1.1 In accordance with ICAO Annex 13, Chapter 8, *[Name of State]* has established and maintains an accident and incident database to facilitate the effective analysis of information on actual or potential safety deficiencies and to determine any preventive actions required. State authorities responsible for the implementation of the State safety programme (SSP) have access to this database to support their safety responsibilities and fulfil their duties.

12.1.2 The *[Accident Investigation Authority]* has adopted an ICAO ADREP-compatible system for collection, sharing and exchange of safety information from its accident and incident database.

*Note 1.— In accordance with Annex 19, Chapter 5, States are required to establish safety data collection and processing systems (SDCPS) to capture, store, aggregate and enable the analysis of safety data and safety information. State authorities responsible for the implementation of the SSP, which include accident investigation authorities, have access to the SDCPS to support their safety responsibilities.*

*Note 2.— SDCPS refers to processing and reporting systems, safety databases, schemes for exchange of information, and recorded information including but not limited to:*

- a) data and information pertaining to accident and incident investigations;*
- b) data and information related to safety investigations by State authorities or aviation service providers;*
- c) mandatory safety reporting systems;*
- d) voluntary safety reporting systems; and*
- e) self-disclosure reporting systems, including automatic data capture systems.*

12.1.3 The information contained in accident and incident investigation reports should be analysed to determine any preventive actions required. If the analyses of data identify safety matters of interest to other States, *[Name of State]* should forward such safety information to other States as soon as possible.

12.1.4 Regardless of the source of safety recommendations (accident/incident reports, database analyses, or safety studies), if they should be sent to another State, they should also be transmitted to that State's accident investigation authority.



*Note.— In accordance with Annex 19, Chapter 5, if a State, in the analysis of the information contained in its SDCPS, identifies safety matters considered to be of interest to other States, that State is required to forward such safety information to them as soon as possible. Prior to sharing such information, States will agree on the level of protection and conditions on which safety information will be shared.*

*[[Note.— Information on the sharing of safety information can be found in the ICAO “Code of conduct on the sharing and use of safety information” in the Global Aviation Safety Plan (Doc 10004)].*

## **12.2 EUROPEAN COORDINATION CENTRE FOR ACCIDENT AND INCIDENT REPORTING SYSTEMS (ECCAIRS) DATABASE, ANALYSES AND SHARING OF DATA**

*[[If the State has an accident and incident database and data analysis system compatible with the ICAO ADREP system, that system should be described in this paragraph. If the State does not have an accident and incident database and analysis system compatible with the ICAO ADREP system, it may consider adopting the European Co-ordination Centre for Accident and Incident Reporting Systems (ECCAIRS) programme to facilitate the exchange of safety information from its accident and incident database, as suggested in the text below.]]*

12.2.1 ICAO Annex 13 contains requirements for States to establish and maintain an accident and incident database to facilitate the effective analysis of information on actual and potential safety deficiencies and to determine any preventive actions required.

12.2.2 The *[Accident Investigation Authority]* has established an ICAO ADREP-compatible system for their accident/incident reporting, as well as for collecting, storing, sharing and exchanging relevant safety information.

12.2.3 It is noted that the European Union (EU) has established an accident and incident database based on ECCAIRS software, which is fully compatible with the ICAO ADREP system. States are encouraged to implement their accident and incident database based on ECCAIRS, which is made available at no charge.

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## **APPENDICES**



## **Appendix A**

### ***[Name of State]* Legislation on Aircraft Accident and Incident Investigation**

*[[Note.— The relevant State legislation that created the independent accident investigation authority and provided its rights and responsibilities should be inserted in this appendix. Legislation regarding the funding of the authority should also be included in this appendix. A model accident investigation authority act follows.]]*

## **Model Accident Investigation Authority Act**

# [STATE] ACCIDENT INVESTIGATION AUTHORITY ACT

## PURPOSE

1. The purpose of this Act is to establish:
  - a) the accident investigation authority of [STATE]; and
  - b) the laws and regulations related to the conduct of investigations into aircraft accidents and incidents.

## TITLE

2. This Act may be cited as the Accident Investigation Authority Act of [STATE].

## DEFINITIONS

3. For the purpose of implementing the provisions of this Act, the following terms shall have the following meanings:

**Accident:** An occurrence associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down, in which:

- a) a person is fatally or seriously injured as a result of:

- being in the aircraft, or

- direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or

- direct exposure to jet blast,

*except* when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or

- b) the aircraft sustains damage or structural failure which:

- adversely affects the structural strength, performance or flight characteristics of the aircraft, and

- would normally require major repair or replacement of the affected component,

*except* for engine failure or damage, when the damage is limited to a single engine, (including its cowlings or accessories), to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aircraft skin (such as small dents or puncture holes), or for minor damages to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike (including holes in the radome); or

c) the aircraft is missing or is completely inaccessible.

**Accident investigation authority (Authority):** The authority designated by [State] as responsible for aircraft accident and incident investigations within the context of Annex 13 — *Aircraft Accident and Incident Investigation*.

**Aircraft:** Any machine that can derive support in the atmosphere from the reactions of the air, other than the reactions of the air against the earth's surface.

**Annex 13:** The Annex to the Convention on International Civil Aviation that contains the International Standards and Recommended Practices related to Aircraft Accident and Incident Investigation.

**Appointed Head:** A commissioner, or other competent government official who is appointed by [STATE] to be responsible for the accident and incident investigations within the meaning of the Act.

**Balancing test:** The determination whereby the competent authority(ies) assesses competing public interests and decides which interest should prevail leading to the determination referred to in Standard 5.12 of Annex 13.

**Causes:** Actions, omissions, events, conditions, or a combination thereof, which led to the accident or incident. The identification of causes does not imply the assignment of fault or the determination of administrative, civil or criminal liability.

**Competent authority:** The governmental entity(ies) that has the power and authority to administer the balancing test.

**Contributing factors:** Actions, omissions, events, conditions, or a combination thereof, which, if eliminated, avoided or absent, would have reduced the probability of the accident or incident occurring, or mitigated the severity of the consequences of the accident or incident. The identification of contributing factors does not imply the assignment of fault or the determination of administrative, civil or criminal liability.

**Crew member:** A person assigned by an operator to duty on an aircraft during a flight duty period.

**Department:** Any ministry, authority, organization or other concerned body of the Government of [STATE] that has a direct interest in aircraft accidents or incidents.

**Document:** Includes any correspondence, memorandum, book, plan, map, drawing, diagram, pictorial or graphic, film, sound recording, video tape, electronic files and data, and any copy thereof.

**Draft Final Report:** Draft investigation report that is sent in confidence to departments in [STATE], States, and organizations involved in the investigation, inviting their significant and substantiated comments on the report.

**Final Report:** A State's conclusive report on its investigation into an aircraft accident or incident. **The Final Report is issued by the Authority and includes** the pertinent factual information, analysis, conclusions and, when appropriate, associated safety recommendations. This report is made with the intention of preventing accidents or incidents and in no case has the purpose of creating a presumption of blame or liability.

**Flight recorder:** Any type of recorder installed in the aircraft for the purpose of complementing accident/incident investigation.

**Incident:** An occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation.

**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.

**Investigator:** A person delegated by the Authority to conduct its investigations.

**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.

**Material fact in question:** A legal term used to refer to a fact that is significant or essential to the matter at hand, that one party alleges and that the other controverts, and is to be determined by the competent authority administering the balancing test.

**Observer:** A representative of a concerned department of [STATE] who is authorized by the Authority to attend an investigation as an observer, or an Authority investigator authorized to attend an investigation being conducted by a concerned department.

**Occurrence:** Any accident or incident associated with the operation of an aircraft.

**Operator:** The person, organization or enterprise engaged in or offering to engage in an aircraft operation.

**Participant:** A person authorized by the Authority to participate in an investigation being conducted by the Authority because in the opinion of the Authority that person has the expertise to contribute to achieving the Authority's mandate.

**Regulations:** The Aircraft Accident and Incident Investigation Regulations of [STATE] enabled by the Accident Investigation Authority Act of [STATE].

**Safety recommendation:** A proposal of an accident investigation authority based on information derived from an investigation, made with the intention of preventing accidents or incidents and which in no case has the purpose of creating a presumption of blame or liability for an accident or incident. In addition to safety recommendations arising from accident and incident investigations, safety recommendations may result from diverse sources, including safety studies.

**Serious incident:** An incident involving circumstances indicating that there was a high probability of an accident and associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down. (Schedule 2 of the Regulations provides a list of examples of serious incidents.)

**State:** A Member State of the International Civil Aviation Organization (ICAO).

**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.

**State of Occurrence:** The State in the territory of which an accident or incident occurs.

**State of the Operator:** The State in which the operator's principal place of business is located or, if there is no such place of business, the operator's permanent residence.

**State of Registry:** The State on whose register the aircraft is entered.

**Statement:** The whole or any part of an oral, written or recorded statement relating to an aircraft accident or incident given by the author of the statement to the Authority.

#### APPLICATION

4. This Act applies in respect of aircraft accidents and incidents:
  - a) in or over [STATE];
  - b) when [STATE] is the State of Registry and:
    - 1) the location of the accident or the serious incident cannot definitely be established as being in the territory of any other State; or
    - 2) the accident or the serious incident has occurred in the territory of a non-Contracting State which does not intend to conduct an investigation in accordance with Annex 13.
5. The Accident investigation authority (hereinafter referred to as the Authority) shall take all reasonable measures to ensure that the investigation procedures and practices that it follows in relation to accidents and incidents are compatible with the [STATE's] obligations under the Convention on International Civil Aviation, and the International Civil Aviation Organization (ICAO) Standards and Recommended Practices contained in Annex 13.

#### OBJECTIVE

6. The sole objective of the investigation of an aircraft accident or incident conducted under this Act shall be the prevention of accidents and incidents. It is not the purpose of this activity to apportion blame or liability.
7. Investigations by the Authority shall be conducted separate from investigations conducted for the purposes of establishing blame or civil or criminal liability.
8. The Authority shall have independence in the conduct of the investigation and have unrestricted authority over its conduct, consistent with the provisions of Annex 13.
9. Any investigations conducted under the provisions of this Act shall have unrestricted access to all evidential material without delay and shall not be impeded by administrative or judicial investigations or proceedings.
10. The Authority shall be functionally independent from other State aviation authorities and other entities that could interfere with the conduct or objectivity of an investigation.
11. The mandate of the Authority is to conduct independent investigations, including:
  - a) the gathering, recording and analysis of all relevant information of an accident or incident;
  - b) the protection of certain accident and incident investigation records in accordance with Section 31;
  - c) if appropriate, the issuance of safety recommendations;
  - d) if possible, the determination of the causes and/or contributing factors; and



- e) as appropriate, the completion of the Final Report.
12. No one shall circulate, publish or give access to a draft investigation report or any part thereof, or any documents obtained during an investigation of an accident or incident, without the express consent of the Authority, unless such reports or documents have already been published or released by the Authority.
  13. Final reports shall not be used as evidence in any court proceeding or in other proceedings related to apportioning blame or liability.
  14. No finding, cause or contributing factor determined under this Act shall be construed as assigning fault or determining civil or criminal liability.
  15. No safety recommendation made under this Act shall be construed as assigning fault or determining civil or criminal liability.
  16. The State shall make and promulgate regulations for carrying out the purposes and provisions of this Act.

#### **APPOINTMENTS**

17. [STATE] shall:
  - a) designate an Appointed Head of the Authority who shall be responsible for aircraft accident and incident investigations within the meaning of this Act; and
  - b) ensure that sufficient funds are available to enable the Authority to properly investigate accidents and incidents that fall within the Authority's area of responsibility.

#### **DUTIES OF THE APPOINTED HEAD**

18. The Appointed Head of the Authority has the authority to:
  - a) establish policies and procedures to be followed in the conduct of investigations;
  - b) institute investigations into the circumstances of accidents and incidents;
  - c) delegate the investigation, in whole or in part, to another State or a regional accident and incident investigation organization, when deemed to be appropriate;
  - d) designate an Investigator-in-charge for each investigation;
  - e) delegate the powers of investigation to the members of the investigation team, and provide each member with a certificate of appointment; and
  - f) release a Final Report on its investigations.

#### **DUTIES OF THE INVESTIGATOR-IN-CHARGE**

19. The Investigator-in-charge has exclusive authority to direct the conduct of an investigation under this Act on behalf of the Appointed Head.

20. The Investigator-in-charge shall:

- a) report to the Appointed Head on the investigation, including proposing findings as to causes and contributing factors, and safety recommendations related to investigations conducted by the Authority; and
- b) be responsible for appointing observers and participants required for the investigation.

### CONFLICTS OF INTEREST

21. To achieve functional independence of the Authority, and to ensure the credibility of its investigations, members of the Authority shall avoid actual and potential conflicts of interest.

### INVESTIGATION — JURISDICTIONS

22. Notwithstanding any other Act, no department may commence an investigation under this Act if the accident or incident has been investigated, is being investigated, or is going to be investigated by the Authority.

23. Nothing in Section 22 of the Act prevents a department of [STATE] from commencing an investigation into or continuing to investigate an aircraft accident or incident for any purpose other than that of the Act.

24. Nothing in Section 22 of the Act prevents any law enforcement department in the [STATE] from investigating an aircraft accident or incident for any purpose for which it is empowered to conduct investigations.

25. For any investigation conducted under the provisions of this Act, and in consideration of Section 24, the Authority shall:

- a) have unhampered access to and unrestricted control over the scene of the accident or incident, including the wreckage and any material relevant to the investigation;
- b) have unhampered access to and control of the wreckage and all relevant material, including flight recorders and air traffic services recordings and records;
- c) have unrestricted control over wreckage and parts to ensure that detailed examinations can be made without delay;
- d) take all reasonable measures to protect the evidence and to maintain safe custody of the aircraft and its contents for such a period as may be necessary for the purposes of the investigation; and
- e) relinquish control of the accident or incident site(s) and release custody of the aircraft, its contents or any parts thereof as soon as they are no longer required by the investigation.

### NOTIFICATION OF ACCIDENTS AND INCIDENTS

26. Subject to the provisions of the Accident investigation authority Regulations of [STATE], the owner, operator, pilot-in-command, crew members, operator of an airport, air traffic controller, or any other person having knowledge of an accident or incident shall notify the Authority and provide as much information as soon as possible and by the quickest means available.

### DECISION AS TO THE EXTENT OF INVESTIGATION

27. Where the Authority is notified of an aircraft accident or incident, the Authority will decide as to the extent of the investigation required and the procedures to be followed in carrying out the investigation, based on the lessons it expects to draw from the investigation for the improvement of safety.

### PRESERVATION OF EVIDENCE

28. Where an aircraft accident or incident takes place, the owner, operator, and crew members shall, to the extent possible, and until otherwise instructed by the Authority or except as otherwise required by this Act, take all reasonable measures to protect the evidence, including documents defined in this Act, and to maintain safe custody of the aircraft and its contents for such a period as may be necessary for the purposes of an investigation.
29. Section 28 shall not be construed as preventing any person from taking necessary measures to ensure the safety of any person and property.
30. Where evidence relevant to an accident or incident has to be interfered with pursuant to Section 29, the person directing, supervising or arranging the interference shall, to the extent possible in the circumstances, and prior to the interference, record the evidence by the best means available.

### PROTECTION OF ACCIDENT AND INCIDENT INVESTIGATION RECORDS

31. When conducting the investigation of an accident or incident, *[State]* shall not make the following records available for purposes other than accident or incident investigation, unless the designated competent authority determines that their disclosure or use outweighs the likely adverse domestic and international impact such action may have on that or any future investigations:
- a) cockpit voice recordings and airborne image recordings and any transcripts from such recordings; and
  - b) records in the custody or control of the accident investigation authority being:
    - 1) all statements taken from persons by the Authority in the course of their investigation;
    - 2) all communications between persons having been involved in the operation of the aircraft;
    - 3) medical or private information regarding persons involved in the aircraft accident or incident;
    - 4) recordings and transcripts of recordings from air traffic control units;
    - 5) analysis of and opinions about information, including flight recorder information, made by the Authority and accredited representatives in relation to the accident or incident; and
    - 6) the draft Final Report of an accident or incident investigation.
32. Audio content of cockpit voice recordings as well as image and audio content of airborne image recordings shall not be disclosed to the public.

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### **ADMINISTRATION OF THE BALANCING TEST**

33. Where the request is for a record listed under Section 31 to be disclosed or used in a criminal, civil, administrative or disciplinary proceeding, the competent authority shall be satisfied that a material fact in question in the proceedings cannot be determined without that record, before administering the balancing test.

### **EVIDENCE OF INVESTIGATORS**

34. Authority investigators shall not be compellable to appear as a witness in any judicial, administrative or disciplinary proceedings related to apportioning blame or liability.

### **DRAFT FINAL REPORTS ON INVESTIGATIONS**

35. Before releasing the Final Report on its investigation, the Authority shall send a draft Final Report to departments, States, and other organizations that participated in the investigation, inviting their significant and substantiated comments.

### **FINAL REPORTS ON INVESTIGATIONS**

36. In the interest of accident and incident prevention, the Authority shall make a Final Report on its investigation publicly available as soon as possible and, if possible, within twelve months.

### **SAFETY RECOMMENDATIONS**

37. At any stage of the investigation of an accident or incident, the Authority shall recommend in a dated transmittal correspondence to the appropriate authorities, including those in other States, any preventive action that it considers necessary to be taken promptly to enhance aviation safety.
38. The Authority shall address, when appropriate, any safety recommendations arising out of its investigations in a dated transmittal correspondence to the accident investigation authorities of other State(s) concerned and to ICAO when ICAO documents are involved.

### **REOPENING OF INVESTIGATIONS**

39. If new and significant evidence becomes available after the investigation has been closed, the Authority shall reopen it.
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## **Appendix B**

### ***[Accident Investigation Authority]* Operating Regulations**

*[[Note.— The operating regulations of the accident investigation authority should be appended here. The regulations should address, at a minimum, the national requirements emanating from the legislation pertaining to accident and incident investigation and should provide standardized investigation processes in conformance with the SARPs contained in ICAO Annex 13, as well as guidance provided in the ICAO Manual of Aircraft Accident and Incident Investigation (Doc 9756). A model of aircraft accident and incident investigation (AIG) regulations follows.]]*

# **Model Aircraft Accident and Incident Investigation (AIG) Regulations**

## [STATE] Aircraft Accident and Incident Investigation Regulations

### PURPOSE

1. These regulations, made pursuant to Section 16 of the Accident Investigation Authority Act of [STATE], prescribe:
  - a) the manner of exercising and carrying out the Authority's powers, duties and functions under the Act, and
  - b) the standards that the aviation system needs to achieve in compliance with the provisions of the Act.

### TITLE

2. These regulations may be cited as the Aircraft Accident and Incident Investigation Regulations of [STATE].

### DEFINITIONS

3. For the purpose of implementing the provisions of these regulations, the following terms shall have the following meanings:

**Accident:** An occurrence associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down, in which:

- a) a person is fatally or seriously injured as a result of:

- being in the aircraft, or
- direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or
- direct exposure to jet blast,

*except* when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or

- b) the aircraft sustains damage or structural failure which:

- adversely affects the structural strength, performance or flight characteristics of the aircraft, and
- would normally require major repair or replacement of the affected component,

except for engine failure or damage, when the damage is limited to a single engine, (including its cowlings or accessories), to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aircraft skin (such as small dents or puncture holes), or for minor damages to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike (including holes in the radome); or

- c) the aircraft is missing or is completely inaccessible.

**Accident investigation authority (Authority):** The authority designated by [State] as responsible for aircraft accident and incident investigations within the context of Annex 13 — *Aircraft Accident and Incident Investigation*.

**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. Where the State has established an accident investigation authority, the designated accredited representative would normally be from that authority.

**Act:** The Accident Investigation Authority Act of [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.

**Aircraft:** Any machine that can derive support in the atmosphere from the reactions of the air, other than the reactions of the air against the earth's surface.

**Airport operator:** A person, organization or enterprise engaged in the operation of an airport.

**Air traffic control unit:** A generic term meaning variously, area control centre, approach control unit, or aerodrome control tower.

**Annex 13:** The Annex to the Convention on International Civil Aviation that contains the International Standards and Recommended Practices related to Aircraft Accident and Incident Investigation.

**Appointed Head:** A commissioner, or other competent government official who is appointed by [STATE] to be responsible for the accident and incident investigations within the meaning of the Act.

**Causes:** Actions, omissions, events, conditions, or a combination thereof, which led to the accident or incident. The identification of causes does not imply the assignment of fault or the determination of administrative, civil or criminal liability.

**Collision:** An impact between aircraft, or between an aircraft and another object.

**Contributing factors:** Actions, omissions, events, conditions, factors or a combination thereof, which, if eliminated, avoided or absent, would have prevented or reduced the probability of the accident or incident occurring, or would have mitigated the severity of the adverse consequences of the accident or incident. The identification of contributing factors does not imply the assignment of fault or the determination of administrative, civil or criminal liability.

**Crew member:** A person assigned by an air operator to duty on an aircraft during a flight duty period.



**Dangerous goods:** Articles or substances which are capable of posing a risk to health, safety, property or the environment. More information related to dangerous goods can be found in ICAO Annex 18 — *The Safe Transport of Dangerous Goods by Air*, and in ICAO *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284).

**Department:** Any ministry, authority, organization or other concerned body of the government of [STATE] that has a direct interest in aircraft accidents or incidents.

**Document:** Includes any correspondence, memorandum, book, plan, map, drawing, diagram, pictorial or graphic, film, sound recording, video tape, electronic files and data, and any copy thereof.

**Draft Final Report:** Draft investigation report that is sent in confidence to departments in [STATE], States, and organizations involved in the investigation, inviting their significant and substantiated comments on the report.

**Final Report:** A State's conclusive report on its investigation into an aircraft accident or incident. **The Final Report is issued by the Authority and includes the pertinent factual information, analysis, conclusions and, when appropriate, associated safety recommendations. This report is made with the intention of preventing accidents or incidents and in no case has the purpose of creating a presumption of blame or liability.**

**Flight recorder:** Any type of recorder installed in the aircraft for the purpose of complementing accident/incident investigation.

**Incident:** An occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation.

**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 Interim Statement:** The public communication used by the Authority on each anniversary of the accident or incident for informing those having a direct interest in the investigation regarding the progress of an ongoing investigation and any safety issues raised during the investigation.

**Investigator:** A person delegated by the Authority to conduct its investigations.

**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 representative of a concerned department of [STATE] who is authorized by the Authority to attend an investigation as an observer, or an Authority investigator authorized to attend an investigation being conducted by another concerned department.

**Occurrence:** Any accident or incident associated with the operation of an aircraft.

**Operator:** The person, organization or enterprise engaged in or offering to engage in an aircraft operation.

**Other reportable incident:** An occurrence, other than an accident or serious incident, which affects or could affect the safety of operations. (The [STATE] could also insert in Schedule 2 of these Regulations additional reporting requirements for other types of incidents, if any.)

**Participant:** A person authorized by the Authority to participate in an investigation being conducted by the Authority because in the opinion of the Authority that person has the expertise to contribute to achieving the Authority's mandate.

**Pilot-in-command:** The pilot designated by the operator, or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight.

**Regulations:** The Aircraft Accident and Incident Investigation Regulations of [STATE] enabled by the Accident Investigation Authority Act of [STATE].

**Safety recommendation:** A proposal of an accident investigation authority based on information derived from an investigation, made with the intention of preventing accidents or incidents and which in no case has the purpose of creating a presumption of blame or liability for an accident or incident. In addition to safety recommendations arising from accident and incident investigations, safety recommendations may result from diverse sources, including safety studies.

**Safety recommendation of global concern:** A safety recommendation made to a State civil aviation authority, to a regional certification authority, or to ICAO regarding a systemic deficiency having a probability of recurrence with potential for significant consequences, and requiring timely action to improve safety.

**Serious incident:** An incident involving circumstances indicating that there was a high probability of an accident and associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down. (Schedule 2 of the Regulations provides a list of examples of serious incidents.)

**Serious injury:** An injury which is sustained by a person in an accident and which:

- a) requires hospitalization for more than 48 hours, commencing within seven days from the date the injury was received; or
- b) results in a fracture of any bone (except simple fractures of fingers, toes or nose); or
- c) involves lacerations which cause severe haemorrhage, nerve, muscle or tendon damage; or
- d) involves injury to any internal organ; or
- e) involves second or third degree burns, or any burns affecting more than 5 per cent of the body surface; or
- f) involves verified exposure to infectious substances or injurious radiation.

**State:** A Member State of the International Civil Aviation Organization (ICAO).

**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.

**State of Occurrence:** The State in the territory of which an accident or incident occurs.

**State of the Operator:** The State in which the operator's principal place of business is located or, if there is no such place of business, the operator's permanent residence.

**State of Registry:** The State on whose register the aircraft is entered.

**Statement:** The whole or any part of an oral, written or recorded statement relating to an aircraft accident or incident given by the author of the statement to the Authority.

#### CONFLICTS OF INTEREST

4. In accordance with Section 21 of the Act, members of the Authority shall not directly or indirectly have an interest in or be an owner, shareholder, director, officer, partner, or otherwise:
  - a) be engaged in an aviation undertaking or business; or
  - b) have an interest in the manufacture or distribution of aircraft or aircraft equipment or components.
5. On appointment to the Authority, members of the Authority shall set aside conflicts of interest detailed in Section 4.
6. During their terms of office, members of the Authority shall not accept or hold any office or employment, or carry on any activity inconsistent with the performance of their duties under the Act, these Regulations and the policies of the Authority.
7. Civil aviation authority experts assigned to participate in an investigation being conducted by the Authority shall not be engaged in any duties associated with the civil aviation authority for the duration of their involvement in the investigation.

#### INVESTIGATION — COORDINATION

8. The Authority shall take all reasonable measures to ensure that the investigation procedures and practices that it follows in relation to aircraft accidents and incidents are compatible to the degree possible with investigation requirements, procedures and practices followed by other departments, regulatory authorities, police forces and coroners.
9. The Authority shall make all reasonable efforts to enter into agreements to provide for the coordination of activities between the Authority and the entities noted in Section 8, with respect to:
  - a) investigation procedures and practices;
  - b) requirements for reporting aircraft accidents and incidents;
  - c) procedures to be followed in the event that conflicting interests arise during their activities with respect to aircraft accidents or incidents.
10. The Authority may investigate aircraft accidents and incidents that involve both State and civil aircraft and facilities. For such situations, the Authority shall take all reasonable measures to ensure that its investigation activities are coordinated with those other on-going investigations, if any.

11. Where a department is notified of an aircraft accident or incident that the Authority has the power to investigate under the Act, the department shall:
- a) notify the Authority with particulars of the aircraft accident or incident; and
  - b) advise the Authority of any investigation that the department plans to conduct and of any remedial measures that the department plans to take.

#### **INVESTIGATION — POWERS OF INVESTIGATORS**

12. Investigators appointed under Subsection 18 (e) of the Act may exercise the following powers for the purpose of investigating aircraft accidents or incidents:
- a) to call before him or her and examine all persons as the investigator thinks fit, and to require such persons to answer any questions or furnish any information;
  - b) to require the protection and preservation of:
    - 1) the aircraft accident or incident site(s);
    - 2) the aircraft and any parts thereof, and;
    - 3) all records and documents associated with the occurrence;
  - c) to enter and search any place where an investigator believes on reasonable grounds that there is anything relevant to the conduct of an investigation of an accident or incident, and to seize anything that is found in the course of that search. (An investigator shall not exercise the powers in relation to a particular place without the consent of the person in charge of that place unless those powers are so exercised under the authority of a warrant, or, by reason of exigent circumstances, it would not be practical for the investigator to obtain a warrant);
  - d) to prohibit or limit access to the area immediately surrounding the place at which anything involved or likely to have been involved in an accident or incident is located for such period as is necessary for the purposes of preserving and protecting evidence. (The investigator shall have regard to the desirability of minimizing any resulting disruption to transportation services);
  - e) to cause such tests, including tests to destruction, of anything that was seized for the purposes of the investigation. (To the extent that it is practical and safe to do so, and does not unreasonably impede the progress of the investigation, the investigator shall take all reasonable measures to invite the owner and any person who appears on reasonable grounds to be entitled to the component being tested to be present at any such tests);
  - f) to require the provision and to make copies of any documents that the investigator may consider relevant to the accident or incident;
  - g) to retain any such documents until the completion of the investigation, or until it is determined that an investigation shall not be carried out;
  - h) to take statements from all such persons as the investigator thinks fit and to require any such person to make and sign a declaration of the truth of the statements made by the person;

- i) to require a person(s) who was or were directly or indirectly involved in the operation of an aircraft to submit to a medical examination, where the investigator believes on reasonable grounds that the medical condition is, or may be, relevant to the investigation:
    - the notice for medical examinations shall be made in writing and signed by the investigator; and
    - this requirement shall not be construed as a requirement that the person submit to any procedure involving surgery, perforation of the skin or any external tissue or the entry into the body of any drug or foreign substance;
  - j) to require a physician or other practitioner to provide medical information concerning a patient where the investigator believes on reasonable grounds that such information is relevant to the investigation. (The notice for medical information shall be made in writing and signed by the investigator);
  - k) to cause an autopsy or medical examination to be performed on a body of a deceased person where the investigator believes on reasonable grounds that the information derived from the autopsy and examination is, or may be, relevant to the conduct of the investigation. (The notice for medical information shall be made in writing and signed by the investigator);
  - l) to require the person having custody of the body of the deceased person or other human remains to permit the performance of that autopsy or that medical examination. (The notice for medical information shall be made in writing and signed by the investigator); and
  - m) to call on the services of local authorities or other authorised persons to ensure protection of the accident site, including the aircraft and its contents, until such time as the Authority is able to directly take over custody and security of the aircraft and its contents.
13. Before acting under Section 12, the investigator shall produce the investigator's certificate of appointment as proof of his or her identity and powers, when requested to do so by an involved person.
14. No person shall refuse or fail to produce information to an investigator, or to attend before an investigator and give a statement, or to provide information, to submit to a medical examination, or to make the body of a deceased person or other human remains available for the performance of an autopsy or medical examination imposed in Section 12.
15. Investigators appointed under Subsection 18 (e) of the Act may apply for a court order from the responsible department of the [STATE] to compel compliance with orders or directives issued under Section 12.

#### **OBSERVERS/PARTICIPANTS/ACCREDITED REPRESENTATIVES**

16. Subject to any conditions that the Authority may impose, a person may attend as an observer at an investigation by the Authority if the person is designated as an observer by a concerned department of [STATE] having a direct interest in the subject matter of the investigation.
17. Subject to any conditions that the Authority may impose, a person may attend as a participant in an investigation by the Authority, if in the opinion of the Authority that person has the expertise to contribute to achieving the Authority's mandate.
18. Subject to the Standards and Recommended Practices contained in ICAO Annex 13, accredited representatives and advisers appointed by States are entitled to participate in an investigation conducted by the Authority.

19. Subject to the Standards and Recommended Practices contained in ICAO Annex 13, a State which has a special interest in an accident by virtue of fatalities or serious injuries to its citizens is entitled to appoint an expert to participate in an investigation conducted by the Authority.
  20. The Authority may engage, on a temporary basis, the services of persons having technical or specialized knowledge to assist the Authority in its investigations.
  21. The Authority may remove or ask to have removed an observer or a participant from an investigation:
    - a) if that person contravenes a condition imposed by the Authority on the person's presence, or
    - b) if, in the Authority 's opinion, the person has a conflict of interest that impedes the conduct of the investigation.
  22. Where a person referred to in Sections 16, 17 and 20 of the Regulations attends as an observer or a participant at the investigation of an occurrence conducted by the Authority, the person may, subject to the conditions and limitations imposed by the Authority and under the supervision of an Authority investigator:
    - a) attend at the occurrence site(s);
    - b) examine the aircraft and its component parts and contents involved in the occurrence;
    - c) unless otherwise prohibited by law, examine any document as defined in Section 3 of the Regulations, and any other relevant evidence, relating to:
      - 1) the aviation activity during which the occurrence took place,
      - 2) the crew members involved in the occurrence, and
      - 3) the aircraft, its component parts and contents;
    - d) attend laboratory tests or analyses.
- Note: Attachment A is an example of a form for "Granting of Observer/Participant Status" on the investigation.
23. Where a person referred to in Sections 18 and 19 of these Regulations attends an investigation of an accident or incident conducted by the Authority, that person, unless otherwise prohibited by law, shall be granted the rights and entitlements expressed in the Standards and Recommended Practices set out in ICAO Annex 13.
  24. The rights and entitlements granted to an observer or participant shall not, unless otherwise authorized by the Appointed Head, include attendance at an interview of a witness during an investigation.
  25. Pursuant to Subsection 12 (e), where the owner of the component being tested, and any person who appears on reasonable grounds to be entitled to it are invited to observe such tests, these persons may:
    - a) record or cause to be recorded the condition of the component being tested prior to, during and after the test; and
    - b) be represented by a person having technical knowledge and expertise in the subject matter of the test.

19. Subject to the Standards and Recommended Practices contained in ICAO Annex 13, a State which has a special interest in an accident by virtue of fatalities or serious injuries to its citizens is entitled to appoint an expert to participate in an investigation conducted by the Authority.
  20. The Authority may engage, on a temporary basis, the services of persons having technical or specialized knowledge to assist the Authority in its investigations.
  21. The Authority may remove or ask to have removed an observer or a participant from an investigation:
    - a) if that person contravenes a condition imposed by the Authority on the person's presence, or
    - b) if, in the Authority 's opinion, the person has a conflict of interest that impedes the conduct of the investigation.
  22. Where a person referred to in Sections 16, 17 and 20 of the Regulations attends as an observer or a participant at the investigation of an occurrence conducted by the Authority, the person may, subject to the conditions and limitations imposed by the Authority and under the supervision of an Authority investigator:
    - a) attend at the occurrence site(s);
    - b) examine the aircraft and its component parts and contents involved in the occurrence;
    - c) unless otherwise prohibited by law, examine any document as defined in Section 3 of the Regulations, and any other relevant evidence, relating to:
      - 1) the aviation activity during which the occurrence took place,
      - 2) the crew members involved in the occurrence, and
      - 3) the aircraft, its component parts and contents;
    - d) attend laboratory tests or analyses.
- Note: Attachment A is an example of a form for "Granting of Observer/Participant Status" on the investigation.
23. Where a person referred to in Sections 18 and 19 of these Regulations attends an investigation of an accident or incident conducted by the Authority, that person, unless otherwise prohibited by law, shall be granted the rights and entitlements expressed in the Standards and Recommended Practices set out in ICAO Annex 13.
  24. The rights and entitlements granted to an observer or participant shall not, unless otherwise authorized by the Appointed Head, include attendance at an interview of a witness during an investigation.
  25. Pursuant to Subsection 12 (e), where the owner of the component being tested, and any person who appears on reasonable grounds to be entitled to it are invited to observe such tests, these persons may:
    - a) record or cause to be recorded the condition of the component being tested prior to, during and after the test; and
    - b) be represented by a person having technical knowledge and expertise in the subject matter of the test.

**MANDATORY NOTIFICATION OF ACCIDENTS AND INCIDENTS**

26. Where an aircraft accident or incident takes place, the owner, operator, pilot-in-command and any crew member of the aircraft, the operator of the airport, and any air traffic controller having knowledge of an accident or incident shall notify the Authority and provide as much information as is possible as soon as possible and by the quickest means available.
27. The notification to the Authority shall be in plain language and contain as much of the information specified in Schedule 1 to these Regulations as is readily available; however, the dispatch of the notification shall not be delayed due to the lack of complete information.

**RESPONSES TO NOTIFICATIONS**

28. Where the Authority is notified of an aircraft accident or serious incident specified in Schedule 2, the Authority with a minimum of delay shall:
- a) forward a notification to:
    - i) any concerned department;
    - ii) the States having a direct interest in the accident or incident, including the State of Registry, State of the Operator, State of Design, State of Manufacture, and when required to ICAO;
    - iii) involved air operator, operators of airports and air traffic control units, and aircraft manufacturer; and
    - iv) any other local authorities and organizations that could assist the Authority in its investigation.
  - b) provide the information as specified in Schedule 1 of the Regulations; and
  - c) advise the entities noted in Subsection (i) and (ii) of any investigation that the Authority plans to conduct, including the type and scope of the investigation.
29. If in the course of an investigation the Authority becomes aware or it suspects that an act of unlawful interference was involved, the Authority shall immediately initiate action to ensure that the security authorities of [STATE] and of the State(s) concerned are so informed.

**CREW STATEMENTS**

30. As soon as possible after the accident or serious incident, each crew member shall forward to the Authority a statement setting forth the facts, conditions and circumstances relating to the accident or serious incident as they appear to the member. (If the crew member is incapacitated, the member shall submit the statement as soon as the member is physically able to do so.)

**VOLUNTARY REPORTING**

31. Any person having knowledge of any safety-related event, other than an accident or incident, may make a voluntary report to the Authority and provide any information that the person believes is relevant.



32. Where a voluntary report is made to the Authority, no person shall release the identity of the person making the report or any information that could reasonably be expected to reveal that person's identity, unless the person making the report authorizes, in writing, its release.
33. A report made to the Authority under a voluntary reporting system shall not be used against the person who made the report in any disciplinary, civil, administrative and criminal proceedings.
34. The protection provided in Sections 32 and 33 regarding the identity of the person making the voluntary report shall not apply to situations involving unlawful acts, gross negligence or wilful infractions by that person, or unless an appropriate authority determines that, in accordance with national legislation, the value of its disclosure or use in any particular instance outweighs the adverse impact such action may have on aviation safety.

#### DECISION AS TO THE TYPES OF INVESTIGATION

35. The Appointed Head of the Authority shall establish policies respecting the types of aircraft accidents or incidents to be investigated. The following criteria shall apply when the Authority makes its decision as to the types of its investigations:
  - a) all accidents shall be investigated;
  - b) all serious incidents involving aircraft of a maximum mass of over 2 250 kg shall be investigated;
  - c) all serious incidents should be investigated; and
  - d) other types of incidents may be investigated.

#### DELEGATION OF INVESTIGATIONS

36. Where the [STATE] is responsible under the provisions of Annex 13 to institute an investigation into an aircraft accident or serious incident, in accordance with Section 18 (c) of the Act, the Authority may delegate the whole or any part of an investigation to another State, to a regional accident and incident investigation organization or to a department by mutual arrangement and consent. In any event, the Authority shall use every means to facilitate the investigation.
37. Where the Authority has delegated the investigation to another department within the [STATE]:
  - a) the delegated department is required to investigate under the provisions of the Act, and to provide its Final Report and recommendations to the Authority; and
  - b) the Authority may appoint an observer to such an investigation.

#### FOREIGN INVESTIGATIONS

38. Where the Authority has been notified of an aircraft accident or serious incident that occurred outside the territory of [STATE] involving a [STATE] aircraft, an aircraft operated by a [STATE] operator, or an aircraft designed or manufactured in the [STATE], the Authority shall:
  - a) acknowledge receipt of the notification

- b) provide the notifying State with the following information with the least possible delay:
  - i) any relevant information regarding the aircraft and flight crew involved in the accident or serious incident; and
  - ii) if [STATE] is the State of the Operator, details of any dangerous goods on board the aircraft;
- c) inform the notifying State as to:
  - i) whether the [STATE] intends to appoint or has appointed an accredited representative; and
  - ii) if such accredited representative will be or has been appointed and will be travelling to the State in which the investigation is being carried out, the contact details and the expected date of arrival of the accredited representative in such State.
- d) appoint an accredited representative, if requested to do so by the State conducting an investigation into an accident, or a serious incident involving an aircraft of a maximum mass of over 2 250 kg.

#### PROTECTION OF ACCIDENT AND INCIDENT INVESTIGATION RECORDS

- 39. The protections in Section 31 a) of the Act shall apply from the time an accident or incident occurs and continue after the publication of the Final Report.
- 40. The protections in Section 31 b) of the Act shall apply from the time they come into the custody or control of the Authority and continue after the publication of the Final Report.
- 41. The requests for records in the custody or control of the Authority shall be directed to the original source of the information, where available.
- 42. The records specified in Section 31 of the Act shall be included in the Final Report or its appendices only when pertinent to the analysis of the accident or incident. Parts of the records not relevant to the analysis shall not be disclosed.
- 43. The names of the persons involved in an accident or incident shall not be disclosed to the public by the Authority.

#### INVESTIGATION INTERIM STATEMENT

- 44. If the Final Report on an investigation cannot be made publicly available within twelve months of the accident or incident, the Authority shall issue an Investigation Interim Statement on each anniversary of the occurrence, detailing the progress of the investigation and any safety issues raised.
- 45. The Authority shall provide the Investigation Interim Statement referred to in Section 44 to the following:
  - a) any concerned department of [STATE];
  - b) the States having a direct interest in the occurrence, and if appropriate to ICAO; and
  - c) States having suffered fatalities or serious injuries to its citizens.
- 46. The Authority shall make the Investigation Interim Statement publicly available.

**DRAFT FINAL REPORTS ON INVESTIGATIONS**

47. In accordance with the provisions of Section 35 of the Act, the Authority shall send a copy of the Draft Final Report to the following, inviting their significant and substantiated comments on the report:
- a) any concerned department of [STATE];
  - b) the States having a direct interest in the occurrence in accordance with Annex 13; and
  - c) any other organizations involved in the investigation.
48. The time limit for providing comments on the Draft Final Report shall be sixty (60) days from the date of the transmittal letter sending the draft report, unless an extension of that period has been agreed to by those concerned.
49. No person shall communicate or use the Draft Final Report, or permit its communication or use, for any purpose not strictly necessary to the study of the report and the preparation of comments concerning the report.
50. The Authority shall not disclose any Draft Final Report, either issued or received, to the public.
51. If the Authority receives comments within the time limit specified in the transmittal letter, the Authority shall either amend the Final Report to include the substance of the comments received or, if desired by the State that provided comments, append the comments to the Final Report.

**FINAL REPORTS ON INVESTIGATIONS**

52. The Authority shall send the Final Report on its investigation with a minimum of delay to:
- a) any concerned department in [STATE];
  - b) States having a direct interest in the occurrence in accordance with Annex 13, and if applicable to ICAO;
  - c) States having suffered fatalities or serious injuries to its citizens; and
  - d) any other organizations or persons who, in the opinion of the Authority, have a direct interest in the investigation.

**SAFETY RECOMMENDATIONS**

53. Safety recommendations issued by the Authority should be sent to those persons or organizations of the aviation community that have a direct interest in the safety issue that was the basis for the safety recommendation, as well as to other members of the aviation community who would benefit from the information, including but not limited to the following:
- a) action addressee for the safety recommendation;
  - b) involved government departments;
  - c) involved States and accident investigation authorities;

- d) involved stakeholders, such as but not limited to the airline, maintenance organization, manufacturer, air traffic services provider, and airport operator; and
  - e) others who may benefit from lessons learned.
54. Whereas Section 37 of the Act provides for the Authority to make safety recommendations, the concerned department, State, or any other authority to which a safety recommendation has been issued, shall, within ninety (90) days after being so notified, advise the Authority in writing of:
- a) any action taken, or proposed to be taken, in response to the recommendations; or
  - b) provide written reasons as to why no action will be taken.
55. The Authority shall record and review responses to its safety recommendations and assess the degree to which the risks underlying the safety recommendation have been mitigated.
56. The Authority shall implement procedures to monitor the progress of the action taken in response to a safety recommendation that the Authority receives.
57. The Authority should inform ICAO of safety recommendations of global concern issued by the Authority, as well as the responses received to these recommendations.

#### **ACCIDENT AND INCIDENT DATABASE**

58. The Authority shall establish and maintain an accident and incident database to facilitate the effective analysis of information obtained on actual or potential safety deficiencies and to determine any preventive actions required.
-

## SCHEDULE 1

### Contents of the Initial NOTIFICATION

As specified in Annex 13, the notification shall be in plain language and contain as much of the following information as is readily available, but its dispatch shall not be delayed due to the lack of complete information:

- a) for accidents the identifying abbreviation ACCID, for serious incidents SINCID; for incidents INCID;
  - b) manufacturer, model, nationality and registration marks, and serial number of the aircraft;
  - c) names of the owner, operator and hirer, if any, of the aircraft;
  - d) qualification of the pilot-in-command, and nationality of crew and passengers;
  - e) date and time (local time or UTC) of the accident or incident;
  - f) last point of departure and point of intended landing of the aircraft, including the date and time of the departure;
  - g) position of the aircraft with reference to some easily defined geographical point and latitude and longitude;
  - h) number of crew and passengers; aboard, killed and seriously injured; others, killed and seriously injured;
  - i) description of the accident or incident and the extent of damage to the aircraft so far as is known;
  - j) an indication to what extent the investigation will be conducted or is proposed to be delegated by the State of Occurrence;
  - k) physical characteristics of the accident or incident area, as well as an indication of access difficulties or special requirements to reach the site;
  - l) identification of the originating authority and means to contact the investigator-in-charge and the accident investigation authority of the State of Occurrence at any time; and
  - m) presence and description of dangerous goods on board the aircraft.
1. It may be helpful to provide the location of the accident or incident as well as the elevation and topography of the accident site, if it is known.
  2. It is useful to first provide the number of persons aboard (crew, passengers) and then the injuries they sustained.
  3. A list of addresses of accident investigation authorities can be found on the ICAO/AIG website or in ICAO *Manual of Aircraft Accident and Incident Investigation*, Part I — *Organization and Planning* (Doc 9756), Chapter 4, Appendix 2.
-

## SCHEDULE 2

### REPORTABLE AIRCRAFT ACCIDENTS/INCIDENTS

#### Reportable accidents

- All aircraft accidents are reportable.

#### Reportable serious incidents

- Near collisions requiring an avoidance manoeuvre to avoid a collision or an unsafe situation, or when an avoidance action would have been appropriate.
- Collisions not classified as accidents.
- Controlled flight into terrain only marginally avoided.
- Aborted take-offs on a closed or engaged runway, on a taxiway<sup>1</sup> or unassigned runway.
- Take-offs from a closed or engaged runway, from a taxiway<sup>1</sup> or unassigned runway.
- Landings or attempted landings on a closed or engaged runway, on a taxiway<sup>1</sup> or unassigned runway.
- Gross failures to achieve predicted performance during take-off or initial climb.
- Fires and/or smoke in the cockpit, in the passenger compartment, in cargo compartments or engine fires, even though such fires were extinguished by the use of extinguishing agents.
- Events requiring the emergency use of oxygen by the flight crew.
- Aircraft structural failures or engine disintegrations, including uncontained turbine engine failures, not classified as an accident.
- Multiple malfunctions of one or more aircraft systems seriously affecting the operation of the aircraft.
- Flight crew incapacitation in flight.
- Fuel quantity level or distribution situations requiring the declaration of an emergency by the pilot, such as insufficient fuel, fuel exhaustion, fuel starvation, or inability to use all usable fuel on board.
- Runway incursions classified with severity A. The *Manual on the Prevention of Runway Incursions* (Doc 9870) contains information on the severity classifications.
- Take-off or landing incidents. Incidents such as under-shooting, overrunning or running off the side of runways.
- System failures, weather phenomena, operations outside the approved flight envelope or other occurrences which caused or could have caused difficulties controlling the aircraft.
- Failures of more than one system in a redundancy system mandatory for flight guidance and navigation.
- The unintentional or, as an emergency measure, the intentional release of a slung load or any other load carried external to the aircraft.

**Note:** The incidents listed above are typical examples of incidents that are likely to be serious incidents. The list is not exhaustive and only serves as guidance to the definition of serious incident.

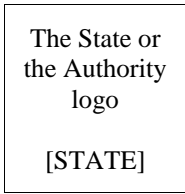
#### Other reportable incidents

*[The STATE could also insert additional reporting requirements for other types of incidents, if any.]*

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1. Excluding authorized operations by helicopters.

# ATTACHMENT A



## GRANTING OF OBSERVER/PARTICIPANT STATUS

File Reference Number

\_\_\_\_\_

\_\_\_\_\_  
Day                      Month                      Year

Dear \_\_\_\_\_

**OCCURRENCE FILE NO:** \_\_\_\_\_ **DATE:** \_\_\_\_\_ **TIME:** \_\_\_\_\_

**AIRCRAFT INVOLVED** \_\_\_\_\_

**OCCURRENCE LOCATION** \_\_\_\_\_

The accident investigation authority of [STATE] is empowered to investigate aircraft accidents and incidents in [STATE]. The sole objective of an Authority investigation is to prevent accidents and incidents. It is not the purpose of this activity to apportion blame or liability. The goal of the investigation is to advance aviation safety by identifying safety deficiencies and making safety recommendations designed to eliminate or reduce such deficiencies.

During the course of an investigation, the Authority may authorize a person to attend as an “observer” when the person is designated as such by a Minister responsible for a department having a direct interest in the investigation, or as a “participant” when, in the opinion of the Authority, the person has the expertise to contribute to achieving the Authority's objective.

**(Regulations, Sections 16 and 17)**

By this letter, you are granted the status of an [observer or participant] to this occurrence and, subject to any conditions the Authority may impose and under the supervision of an Authority investigator, you may:

- (a) attend at the occurrence site(s);
- (b) examine the aircraft, its component parts and contents involved in the occurrence;
- (c) unless otherwise prohibited by law, examine any document as defined in Section 3 of the Regulations, and any other relevant evidence relating to:
  - (i) the aviation activity during which the occurrence took place;
  - (ii) the crew members involved in the occurrence;
  - (iii) the aircraft, its component parts and contents; and
- (d) attend laboratory tests or analyses.

**(Regulations, Section 22)**

**Your attendance as an [observer/participant] is subject to the following conditions:**

- (a) You shall limit your activities at the occurrence site to those outlined by the Investigator-in-charge;
- (b) You shall ensure that your activities do not restrict, endanger, or otherwise interfere with Authority investigators in the performance of their duties;
- (c) The sole purpose of this Authority investigation is the advancement of aviation safety. Consequently, any information you gain as a result of your [observer/participant] status shall only be used for that purpose. Until the investigation report is released to the public, you shall not disclose or otherwise use this information without the express consent of the Investigator-in-charge.
- (d) To be permitted on the occurrence site, you shall have the appropriate inoculations against disease and biohazards (refer to the national immunization guide, health department directives, or equivalent publications);
- (e) To be permitted on the occurrence site, you shall have the appropriate biohazard and occupational safety and health training, and the appropriate safety clothing and equipment, for operating on biohazard, remote, and dangerous sites (refer to the national immunization guide, health department directives, or equivalent publications); and
- (f) You shall on request provide proof of compliance with the training and inoculation requirements in (d) and (e) above.

The rights and privileges granted to an observer/participant shall not include attendance at an interview of a witness during an investigation.

**(Regulations, Section 24)**

Failure to comply with any of the above responsibilities could result in the immediate revocation of your observer/participant status.

**(Regulations, Section 21)**

You should also understand that the privileges of an observer/participant will be exercised at your own risk.

Please sign and return this letter to the Investigator-in-charge, indicating your understanding and acceptance of the above-mentioned conditions and responsibilities.

Yours truly,

\_\_\_\_\_  
*Investigator-in-charge*

**ACCEPTANCE OF OBSERVER/PARTICIPANT STATUS**

I understand and accept the conditions outlined above with respect to my attendance as an observer/participant at the subject investigation.

I also understand that the privileges of an [observer/participant] will be exercised at my own risk, and I hereby agree to indemnify and save harmless the accident investigation authority of [STATE] for any damage or injuries I may suffer as a result of my attending the investigation as an [observer/participant].

	Signed:		Date:	
		(Observer/Participant)		

\_\_\_\_\_



## Appendix C

### Agreements and Memoranda of Understanding (MoUs) with other Organizations

*[[Note.— This appendix contains principles for State-to-State investigation authority MoUs and a model MoU in respect of aircraft accident and serious incident investigation an accident investigation authority may enter into with another agency or authority. Samples of other agreements regarding assistance and cooperation between the [Accident Investigation Authority] and other organizations within the State, such as judicial authorities, the CAA, emergency response agencies, ATS, etc., as well as between the [Accident Investigation Authority] and other States may be found in the Manual of Aircraft Accident and Incident Investigation, Part I — Organization and Planning (Doc 9756).]]*

#### PRINCIPLES FOR A STATE-TO-STATE INVESTIGATION AUTHORITY MEMORANDUM OF UNDERSTANDING

*Note.— A State-to-State investigation authority memorandum of understanding could contain, but not be limited to, the following information.*

##### INTRODUCTION

This section should cover the following:

- identification of the involved investigation authorities and their governing legislations;
- confirmation of commitment to the International Standards and Recommended Practices contained in ICAO Annex 13; and
- documentation of the definitions and terminology that are used in the MoU.

##### PURPOSE

This section should cover the purpose of the MoU, such as to:

- advance aviation safety through the investigation of accidents and incidents in accordance with Annex 13 (and national legislation) in order to prevent accidents and incidents;
- foster cooperation and mutual assistance;

- support each other's investigations; and
- confirm that it is not the purpose of the investigation to apportion blame or liability.

### **AREAS OF MUTUAL SUPPORT**

This section should cover the following:

- when assistance is requested, the response will be coordinated between the two authorities;
- if conditions permit, the requested assistance will be provided;
- when information on an ongoing investigation is requested, all information will be provided in accordance with Annex 13 and national legislations;
- information received will be protected as per the provisions of Annex 13 and national legislations;
- experience and training opportunities will be shared so as to enhance investigation standards, policies, guidelines and procedures of both authorities.

### **FINANCIAL CONSIDERATIONS**

The MoU should specify agreements regarding financial and resource issues on the understanding that:

- human and financial resources and workload may limit the ability to provide mutual support;
- each authority would be expected to bear its own costs, in particular when fulfilling the provisions of Annex 13; and
- the authority requesting supplemental support would be expected to bear the incremental costs.

### **COORDINATION**

This section of the MoU should include:

- the point-of-contact person in each investigation authority for day-to-day investigation operations issues;
- the point-of-contact person in each authority for legislation and policy issues; and
- the MOU should also state provisions for resolving disputes.

### **VALIDITY TIME FRAME**

The MoU should state the time-related issues:

- the date that the MoU comes into effect;

- the validity time frame — this would normally be for a medium term, such as three to five years; and
- the termination time frame could be either termination by a specific date, by written notice, by remaining in force unless otherwise notified or by remaining in force on condition of an annual review.

### **SIGNATORIES**

This section of the MoU should include:

- the signatories to the State-to-State investigation authority MoU, which would be the head officials of the involved investigation authorities.

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**ICAO MEMORANDUM OF UNDERSTANDING  
IN RESPECT OF AIRCRAFT ACCIDENT AND SERIOUS  
INCIDENT INVESTIGATION**

MEMORANDUM OF UNDERSTANDING (MOU)

BETWEEN

..... (Agency/Authority)

of

..... (State)

AND

..... (Agency/Authority)

of

..... (State)

**REGARDING**

**COOPERATION AND ASSISTANCE**

**IN THE FIELD OF**

**CIVIL AIRCRAFT ACCIDENT AND SERIOUS INCIDENT INVESTIGATION**

## 1. INTRODUCTION

1.1 This Memorandum of Understanding (MoU) expresses the understanding of the ..... (Agency/Authority) of ..... (State) and the ..... (Agency/Authority) of ..... (State), hereafter referred to as the parties to this MoU, concerning cooperation and assistance in the field of civil aircraft accident and serious incident investigations.

1.2 It is recognized that both ..... (State) and ..... (State) are parties to the Convention on International Civil Aviation (The Chicago Convention) and that they are therefore bound by the Standards contained in Annex 13 — *Aircraft Accident and Incident Investigation*.

*Note.— Both States shall advise each other of their respective existing differences that have been filed or that will be filed against the Standards of Annex 13.*

1.3 Both parties to this MoU are authorized by their respective Governments to act as the national authority representing ..... (State) and ..... (State) in respect of aircraft accident and serious incident investigation matters.

1.4 This MoU defines the procedural arrangements for cooperation and assistance between the parties pursuant to Annex 13 to the Chicago Convention.

## 2. TERMINOLOGY

2.1 The words and phrases used in this document have the same meaning as that ascribed to them in Annex 13 — *Aircraft Accident and Incident Investigation*.

## 3. THE PURPOSE OF INVESTIGATIONS

3.1 The purpose of investigating accidents or incidents in accordance with Annex 13 is the prevention of accidents and incidents. It is not the purpose of such an investigation to apportion blame or liability.

## 4. CODE OF CONDUCT

4.1 This MoU serves to foster cooperation and mutual assistance between the parties in implementing the provisions of Annex 13. Each party shall strive to overcome difficulties that may arise due to differences in languages, national cultures, legislative systems or geographic locations.

## 5. EXCHANGE OF INFORMATION

5.1 Each party shall establish a working group of specialists to plan and implement technical exchanges and cooperation between the parties in the field of aircraft accident and serious incident investigations. These technical exchanges will include discussions aimed at improving the understanding of the investigation capabilities of the respective organizations, as well as the scope and extent of any assistance that could be provided under given conditions.

5.2 The exchanges and cooperation between the parties should also cover appropriate training for investigative staff, including attendance at training courses.

**6. ASSISTANCE TO THE STATE OF OCCURRENCE**

6.1 When one party, acting as the State of Occurrence, requests the other party for technical assistance for an investigation being conducted under the provisions of Annex 13, the response to the request shall be coordinated between both parties. The two parties should work together to ensure that a competent investigation is conducted in accordance with the procedures and intent of Annex 13.

6.2 Either party may request information on the progress of an investigation being carried out by the other party. All possible efforts will be made to provide the requested information. In accordance with the relevant laws of the respective States, any such information provided should be treated with at least the same rules with respect to confidentiality as those to which the providing party is bound.

**7. COORDINATION**

7.1 The contact person in ..... (Agency/Authority) of ..... (State) for the implementation of this MoU is:

..... (Title)  
..... (Agency/Authority)  
..... (Address)

Tel.: ..... (Office) ..... (Mobile)  
Fax: .....  
Email: .....

7.2 The contact person in .....(Agency/Authority) of .....(State) for the implementation of this MoU is:

..... (Title)  
..... (Agency/Authority)  
..... (Address)

Tel.: ..... (Office) ..... (Mobile)  
Fax: .....  
Email: .....

\_\_\_\_\_

## Appendix D

### List of Examples of Serious Incidents (Reference to ICAO Annex 13, Attachment C)

*Note.— The incidents listed are typical examples of incidents that are likely to be serious incidents. The list is not exhaustive and only serves as guidance to the definition of serious incident.*

- Near collisions requiring an avoidance manoeuvre to avoid a collision or an unsafe situation or when an avoidance action would have been appropriate.
- Collisions not classified as accidents.
- Controlled flight into terrain only marginally avoided.
- Aborted take-offs on a closed or engaged runway, on a taxiway<sup>1</sup> or unassigned runway.
- Take-offs from a closed or engaged runway, from a taxiway<sup>1</sup> or unassigned runway.
- Landings or attempted landings on a closed or engaged runway, on a taxiway<sup>1</sup> or unassigned runway.
- Gross failures to achieve predicted performance during take-off or initial climb.
- Fires and/or smoke in the cockpit, in the passenger compartment, in cargo compartments or engine fires, even though such fires were extinguished by the use of extinguishing agents.
- Events requiring the emergency use of oxygen by the flight crew.
- Aircraft structural failures or engine disintegrations, including uncontained turbine engine failures, not classified as an accident.
- Multiple malfunctions of one or more aircraft systems seriously affecting the operation of the aircraft.
- Flight crew incapacitation in flight.
- Fuel quantity level or distribution situations requiring the declaration of an emergency by the pilot, such as insufficient fuel, fuel exhaustion, fuel starvation, or inability to use all usable fuel on board.
- Runway incursions classified with severity A. The *Manual on the Prevention of Runway Incursions* (Doc 9870) contains information on the severity classifications.
- Take-off or landing incidents. Incidents such as under-shooting, overrunning or running off the side of runways.

---

1. Excluding authorized operations by helicopters.

- System failures, weather phenomena, operations outside the approved flight envelope or other occurrences which caused or could have caused difficulties controlling the aircraft.
  
  - Failures of more than one system in a redundancy system mandatory for flight guidance and navigation.
  
  - The unintentional or, as an emergency measure, the intentional release of a slung load or any other load carried external to the aircraft.
-



## Appendix E

### Individual Development Plan

#### Individual Development Plan — Aircraft Accident Investigator

<b>Investigator name:</b>					
<b>Title (operations/engineering/ATC/survival factors/etc.):</b>					
<b>Grade or position:</b>					
<b>Supervisor name:</b>					
<i>Knowledge, skills and experience</i>	<i>Source /course</i>	<i>Date obtained</i>	<i>Date of practical experience</i>	<i>Date scheduled for training</i>	<i>Remarks (No. of years, grades, etc.)</i>
<b>Initial response procedures</b>					
On-call procedures					
Notification of other national authorities and organizations					
Securing of records, recordings and samples					
Accident site jurisdiction and security					
Investigator safety — biological hazard training and equipment					
Investigator safety, including psychological stress familiarization					
Recovery of human remains					
Requests for autopsies					
Family assistance					
<b>Investigation procedures</b>					
Authority and responsibilities					
Size and scope of the investigation					
Investigation management (group chairman and IIC) — on-scene domestic and overseas					
Use of specialists					

Parties to the investigation, accredited representatives, advisers and observers					
Dealing with news media					
Specialty procedures (operations, engineering, human factors, etc.)					

<b>Investigator name:</b>					
<b>Title (operations/engineering/ATC/survival factors/etc.):</b>					
<b>Grade or position:</b>					
<b>Supervisor name:</b>					
<i>Knowledge, skills and experience</i>	<i>Source /course</i>	<i>Date obtained</i>	<i>Date of practical experience</i>	<i>Date scheduled for training</i>	<i>Remarks (No. of years, grades, etc.)</i>
<b>Report writing</b>					
Internal and external correspondence					
Specialist field notes and factual reports					
Specialist analysis report					
Safety recommendations					
Final Reports					
Technical papers					
Speeches					
<b>Seminar and meeting attendance</b>					
International Society of Air Safety Investigators (ISASI)					
Flight Safety Foundation (FSF)					
Seminars related to technical specialty					
ICAO working groups					
Regional working groups					
Other					

<b>Basic, advanced or specialty courses attended and certificates — after being hired</b>		
<i>Name of course or institution</i>	<i>Dates</i>	<i>Remarks (certificates, etc.)</i>
<b>Recurrent training</b>		
<i>Name of course or institution</i>	<i>Dates</i>	<i>Remarks (certificates, etc.)</i>
<b>On-the-job-training (OJT) (minimum of two cases)</b>		
<i>Identification of accidents</i>	<i>Dates</i>	<i>Remarks</i>
OJT — domestic accident		
OJT — domestic accident		
<b>Participation as an observer (OJT) at investigations conducted by other States</b>		
<i>Identification of accidents</i>	<i>Dates</i>	<i>Remarks</i>

\_\_\_\_\_



# Appendix F

## Wreckage and Parts Release Form

**[Accident Investigation Authority]**  
Investigation Number

The [Accident Investigation Authority] is conducting an investigation into the following aviation safety matter.

Investigation title and/or other description — aircraft make, model, registration, date of occurrence, etc.
---

The items listed below are no longer required by the [Accident Investigation Authority] as part of its accident/incident investigation.

*Note.— It is strongly recommended that components be inspected by authorized personnel where it is intended for them to be returned to operational service.*

Item details (description and condition)	Date returned

**[Accident Investigation Authority] IIC or Delegate**

Signature of IIC/Delegate

Name of IIC/Delegate

Date

Phone

( )

Fax

( )

Email

**Please return a signed copy of this form to the above person at the [Accident Investigation Authority]**

**Owner or agent acknowledgement**

I accept custody of the listed items.

Owner or Agent's name

Phone

Signature of Owner or Agent

Date

— END —

ISBN 978-92-9258-788-8



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