

INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES

International Investigation Standards

Extracts for Experimental On-line Investigation Research Project
Document available from ICAO at <http://www.icao.org/icao/en/cat.htm>

- Definitions
 - Objective
 - Report format
-

AIRCRAFT ACCIDENT AND INCIDENT INVESTIGATION

ANNEX 13

TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION

CHAPTER 1. DEFINITIONS

When the following terms are used in the Standards and Recommended practices for Aircraft Accident and Incident Investigation they have the following meaning:

Accident. An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, 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 the engine, its cowlings or accessories: or for damage limited to propellers, wing tips, antennas, tires, brakes, fairings, small dents or puncture holes in the aircraft skin: or

c) the aircraft is missing or is completely inaccessible.

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

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

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

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

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.

Causes. Actions, omissions, events, conditions, or a combination thereof, which led to the accident or incident.

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

Note.-- See Annex 6, Parts I, II and III, for specifications relating to flight recorders.

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 type of incidents which are of main interest to the International Civil Aviation Organization for accident prevention studies are listed in the ICAO Accident/Incident Reporting Manual (Doe 9156).

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, 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. A person. organization or enterprise engaged in or offering to engage in 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 the accident investigation authority of the State conducting the investigation, based on information derived from the investigation, made with the intention of preventing accidents or incidents.

Serious incident. An incident involving circumstances indicating that an accident nearly occurred.

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 Attachment D of Annex 13 and in the ICAO Accident/Incident Reporting Manual (Dot 9156)

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 hemorrhage, 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 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.

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 (Doc 8722).

CHAPTER 3. GENERAL

.....

OBJECTIVE OF THE INVESTIGATION

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.

.....

APPENDIX. FORMAT OF THE FINAL REPORT

(See Chapter 6)

PURPOSE

The purpose of this format is to present the Final Report in a convenient and uniform manner.

Detailed guidance for completing each section of the Final Report is found in the ICAO *Manual of Aircraft Accident Investigation* (Doc 6920).

FORMAT

Title. The Final Report begins with a title comprising:

name of the operator: manufacturer. model. nationality and registration marks of the aircraft: place and date of the accident or incident.

Synopsis. Following the title is a synopsis describing briefly all relevant information regarding:

notification of accident to national and foreign authorities:

identification of the accident investigation authority and accredited representation:
organization of the investigation:

authority releasing the report and date of publication:

and concluding with a brief resume of the circumstances leading to the accident.

Body. The body of the Final Report comprises the following main headings:

I. Factual information

2. Analysis

3. Conclusions

4. Safety recommendations

each heading consisting of a number of sub-headings as outlined in the following.

Appendices. Include as appropriate.

Note.- In preparing a Final Report, using this format. ensure that:

a) all information relevant to an understanding of the factual information analysis and conclusions is included under each appropriate heading:

b) where information in respect of any of the items in I.-Factual information is not available, or is irrelevant to the circumstances leading to the accident, a note to this effect is included under the appropriate sub-headings.

1. FACTUAL INFORMATION

1.1 History of the flight. A brief narrative giving the following information:

- Flight number, type of operation, last point of departure, time of departure (local time or UTC), point of intended landing.
- Flight preparation, description of the flight and events leading to the accident, including reconstruction of the significant portion of the flight path, if appropriate.
- location (latitude, longitude, elevation), time of the accident (local time or UTC whether day or night).

1.2 Injuries to persons. Completion of the following (in numbers):

Injuries Crew Passengers Others

Fatal

Serious

Minor/None

Note.- Fatal injuries include all deaths determined to be a direct result of injuries sustained in the accident. Serious injury is defined in Chapter 1 of the Annex.

1.3 Damage to aircraft. Brief statement of the damage sustained by aircraft in the accident (destroyed, substantially damaged, slightly damaged, no damage).

1.4 Other damage. Brief description of damage sustained by objects other than the aircraft.

1.5 Personnel information:

- a) Pertinent information concerning each of the flight crew members including: age, validity of licences, ratings, mandatory checks, flying experience (total and on type) and relevant information on duty time.
- b) Brief statement of qualifications and experience of other crew members.
- c) Pertinent information regarding other personnel, such as air traffic services, maintenance. etc., when relevant.

1.6 Aircraft information:

- a) Brief statement on airworthiness and maintenance of the aircraft (indication of deficiencies known prior to and during the flight to be included. if having any bearing on the accident).
- b) Brief statement on performance, if relevant, and whether the mass and centre of gravity were within the prescribed limits during the phase of operation related to the accident. (If not and if of any bearing on the accident give details.)
- c) Type of fuel used.

1.7 Meteorological information:

- a) Brief statement on the meteorological conditions appropriate to the circumstances including both forecast and actual conditions, and the availability of meteorological information to the crew.

b) Natural light conditions at the time of the accident (sunlight, moonlight, twilight, etc.).

1.8 Aids to navigation. Pertinent information on navigation aids available, including landing aids such as ILS, MLS, NDB, PAR, VOR, visual ground aids, etc., and their effectiveness at the time.

1.9 Communications. Pertinent information on aeronautical mobile and fixed service communications and their effectiveness.

1.10 Aerodrome information. Pertinent information associated with the aerodrome, its facilities and condition, or with the take-off or landing area if other than an aerodrome.

1.11 Flight recorders. Location of the flight recorder installations in the aircraft, their condition on recovery and pertinent data available therefrom.

1 f 12 Wreckage and impact information. General information on the site of the accident and the distribution pattern of the wreckage; detected material failures or component malfunctions. Details concerning the location and state of the different pieces of the wreckage are not normally

required unless it is necessary to indicate a break-up of the aircraft prior to impact. Diagrams, charts and photographs may be included in this section or attached in the Appendices.

1.13 Medical and pathological information. Brief description of the results of the investigation undertaken and pertinent data available therefrom.

Note.- Medical information related to flight crew licences should be included in 1.5 - Personnel information.

1.14 Fire. If fire occurred, information on the nature of the occurrence, and of the fire fighting equipment used and its effectiveness.

1.15 Survival aspects. Brief description of search, evacuation and rescue, location of crew and passengers in relation to injuries sustained, failure of structures such as seats and seat-belt attachments.

1.16 *Tests and research.* Brief statements regarding the results of tests and research.

1.17 *Organizational and management information.*

Pertinent information concerning the organizations and their management involved in influencing the operation of the aircraft. The organizations include, for example, the operator, the air traffic services, airway, aerodrome and weather service agencies; and the regulatory authority. The information could include, but not be limited to, organizational structure and functions, resources, economic status, management policies and practices, and regulatory framework.

1.18 *Additional information.* Relevant information not already included in 1.1 to 1.17 above.

1.19 *Useful or effective investigation techniques.* When useful or effective investigation techniques have been used during the investigation, briefly indicate the reason for using these techniques and refer here to the main features as well as describing the results under the appropriate sub-headings 1.1 to 1.18.

2. ANALYSIS

Analyse, as appropriate, only the information documented in I. - Factual information and which is relevant to the determination of conclusions and causes.

3. CONCLUSIONS

List the findings and causes established in the investigation. The list of causes should include both the immediate and the deeper systemic causes.

4. SAFETY RECOMMENDATIONS

As appropriate, briefly state any recommendations made for the purpose of accident prevention and any resultant corrective action.

APPENDICES

Include, as appropriate, any other pertinent information considered necessary for the understanding of the report.

10/11/94

