**MINISTRY OF TRANSPORT AND COMMUNICATIONS**

**REPUBLIC OF THEUNION OF MYANMAR**

**AIRCRAFT ACCIDENT INVESTIGATION BUREAU**

# ACCIDENT INVESTIGATION HANDBOOK

Effective Date- 5th January 2018

Second Edition

Intentionally Blank

| | |
|---|---|
| **SECTION 0** | **: HANDBOOK ADMINISTRATION** |
| **CHAPTER 1** | **: FOREWORD** |

1. This Accidents Investigation Handbook is an internal document of the Aircraft Accident Investigation Bureau of Myanmar (AAIB). It contains guidance material and procedures relating to the responsibilities and functions of the AAIB for the purpose of facilitating the Minister-appointed Investigators of Accidents and the AAIB officers in the performance of their investigation duties.

2. All Investigators of Accidents and AAIB officers are required to keep themselves fully conversant with the relevant sections of this Handbook. The Handbook provides mainly procedural and administrative guidance and does not necessarily address in detail the technical investigation procedures.

3. This Handbook is intended to cover both accident and incident investigations. For reasons of brevity, applicability to incident investigation may not always be explicitly mentioned. In such cases, the guidance material and procedures provided in this Handbook are deemed to be applicable to incident investigation unless they are clearly not relevant or practical.

4. There are only a few non-Contracting States in the world. The AAIB is unlikely to be involved with them in the context of investigation. Nevertheless, the guidance material and procedures provided in this Handbook may be applied when we have to deal with non-Contracting States, unless the material or procedures are clearly not relevant or practical.

5. This Handbook is not regulatory in nature and is not a binding statement of policy, and is not all inclusive. Deviation from the guidance offered in this Handbook may at times be necessary to meet the specific needs of an investigation.

6. The Handbook will be revised when necessary. The Investigators of Accidents and AAIB officers are encouraged to contribute ideas for improving the contents of this Handbook.

Kyaw Myo
Deputy Minister
Ministry of Transport and Communications

| | |
|---|---|
| **SECTION 0** | **: HANDBOOK ADMINISTRATION** |
| **CHAPTER 2** | **: CONTENTS** |

## SECTION 3 PREPARATION FOR INVESTIGATION



## SECTION 4 NOTIFICATION OF OCCURRENCES

## SECTION 5 INVESTIGATION CONDUCTED BY AAIB

**SECTION 6 COORDINATION WITH CRISIS MANAGEMENT TEAM**



**SECTION 7 CUSTODY OF AIRCRAFT AND WRECKAGE**



**SECTION 8 INVESTIGATION REPORT**

| **SECTION 0 : HANDBOOK ADMINISTRATION** |
|---|
| **CHAPTER 3 : LIST OF EFFECTIVITY PAGES** |

| Page | (to) Page | Rev No. | Rev Date | Page | (to) Page | Rev No. | Rev Date |
|---|---|---|---|---|---|---|---|
| 0-1-1 | - | | | 3-6-2A-1 | - | | |
| 0-2-1 | 0-2-7 | | | | | | |
| 0-3-1 | 0-3-3 | | | 4-1-1 | 4-1-2 | | |
| 0-4-1 | - | | | 4-1-1A-1 | - | | |
| 0-5-1 | - | | | 4-1-2A-1 | - | | |
| | | | | 4-1-3A-1 | - | | |
| 1-1-1 | - | | | 4-2-1 | 4-2-2 | | |
| 1-2-1 | - | | | 4-2-1A-1 | 4-2-1A-2 | | |
| 1-3-1 | 1-3-7 | | | 4-3-1 | - | | |
| 1-4-1 | 1-4-2 | | | 4-4-1 | - | | |
| 1-5-1 | 1-5-5 | | | 4-5-1 | - | | |
| | | | | | | | |
| 2-1-1 | - | | | 5-1-1 | 5-1-2 | | |
| 2-2-1 | - | | | 5-2-1 | - | | |
| | | | | 5-3-1 | 5-3-3 | | |
| 3-1-1 | 3-1-2 | | | 5-4-1 | 5-4-4 | | |
| 3-2-1 | - | | | 5-5-1 | 5-5-4 | | |
| 3-3-1 | 3-3-2 | | | 5-6-1 | 5-6-2 | | |
| 3-4-1 | - | | | 5-6-1A-1 | - | | |
| 3-5-1 | - | | | 5-7-1 | - | | |
| 3-6-1 | 3-6-8 | | | 5-8-1 | 5-8-2 | | |
| 3-6-1A-1 | - | | | 5-8-1A-1 | 5-8-1A-9 | | |

| Page | (to) Page | Rev No. | Rev Date | Page | (to) Page | Rev No. | Rev Date |
|---|---|---|---|---|---|---|---|
| 5-8-2A-1 | 5-8-2A-3 | | | 5-15-1 | 5-15-2 | | |
| 5-8-3A-1 | 5-8-3A-6 | | | 5-16-1 | 5-16-3 | | |
| 5-8-4A-1 | 5-8-4A-3 | | | 5-16-1A-1 | - | | |
| 5-8-5A-1 | 5-8-5A-3 | | | 5-17-1 | 5-17-2 | | |
| 5-8-6A-1 | 5-8-6A-2 | | | | | | |
| 5-9-1 | 5-9-2 | | | 6-1-1 | - | | |
| 5-9-1A-1 | 5-9-1A-4 | | | 6-2-1 | 6-2-2 | | |
| 5-9-2A-1 | 5-9-2A-2 | | | | | | |
| 5-9-3A-1 | 5-9-3A-4 | | | 7-1-1 | 7-1-3 | | |
| 5-10-1 | - | | | 7-2-1 | - | | |
| 5-10-1A-1 | 5-10-1A-2 | | | 7-3-1 | - | | |
| 5-11-1 | 5-11-2 | | | | | | |
| 5-11-1A-1 | 5-11-1A-3 | | | 8-1-1 | 8-1-2 | | |
| 5-11-2A-1 | 5-11-2A-3 | | | 8-2-1 | 8-2-3 | | |
| 5-11-3A-1 | - | | | 8-2-1A-1 | 8-2-1A-2 | | |
| 5-11-4A-1 | 5-11-4A-3 | | | 8-2-2A-1 | 8-2-2A-4 | | |
| 5-12-1 | 5-12-3 | | | 8-2-3A-1 | - | | |
| 5-12-1A-1 | 5-12-1A-2 | | | 8-3-1 | 8-3-2 | | |
| 5-13-1 | - | | | 8-4-1 | - | | |
| 5-13-1A-1 | 5-13-1A-3 | | | 8-5-1 | - | | |
| 5-13-2A-1 | 5-13-2A-5 | | | 8-6-1 | 8-6-2 | | |
| 5-13-3A-1 | 5-13-3A-4 | | | 8-7-1 | 8-7-3 | | |
| 5-14-1 | - | | | 8-7-1A-1 | 8-7-1A-3 | | |

| Page | (to) Page | Rev No. | Rev Date | Page | (to) Page | Rev No. | Rev Date |
|---|---|---|---|---|---|---|---|
| 8-7-2A-1 | - | | | 13-1-1 | - | | |
| | | | | | | | |
| 9-1-1 | - | | | 14-1-1 | 14-1-4 | | |
| 9-2-1 | - | | | 14-2-1 | 14-2-8 | | |
| 9-2-1A-1 | - | | | | | | |
| 9-3-1 | 9-3-3 | | | 15-1-1 | - | | |
| 9-4-1 | - | | | | | | |
| 9-5-1 | - | | | | | | |
| 9-6-1 | - | | | | | | |
| 9-7-1 | - | | | | | | |
| | | | | | | | |
| 10-1-1 | 10-1-2 | | | | | | |
| 10-2-1 | - | | | | | | |
| | | | | | | | |
| 11-1-1 | - | | | | | | |
| 11-2-1 | - | | | | | | |
| 11-3-1 | - | | | | | | |
| 11-4-1 | - | | | | | | |
| 11-1-1 | - | | | | | | |
| | | | | | | | |
| 12-1-1 | - | | | | | | |

| **SECTION 0 : HANDBOOK ADMINISTRATION** |
|---|
| **CHAPTER 4 : AMENDMENT RECORD** |

| **Amendment No.** | **Date of issue** | **Date entered** | **Entered by** |
|---|---|---|---|
| Amendment 14 | 6-7-2013 | 18-6-2013 | DD (MAIB) |
| Amendment 15 | 27-12-2017 | 12-12-2017 | DD (AAIB) |
| Amendment 16 | 3-8-2018 | 16-7-2018 | DD (AAIB) |
| Amendment 17 | 29-8-2019 | 13-7-2019 | DD (AAIB) |
| Amendment 18 | 1-10-2020 | 8-9-2020 | DD (AAIB) |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

| SECTION 0 : HANDBOOK ADMINISTRATION |
| --- |
| CHAPTER 5 : HANDBOOK AMENDMENT |

1. The Handbook will be updated or revised as and when necessary (e.g. to comply with new ICAO requirements, to address feedback from operational experience and audits, and make corrections and editorial improvement).

2. The revision may be made by Director (AAIB) himself. He may also assign an officer to carry out the revision, in which case he will review and approve the revision eventually proposed by the officer concerned.

3. Upon the completion of the revision, Director (AAIB) or the officer concerned will make notes in the file to:

- record the completion of the revision exercise; and
- document the changes to be made to the Handbook.

4. A distribution list of the hardcopies or CD copies of the Handbook can be found in the file.

5. For amendment of the hardcopies of the Handbook, Director (AAIB) or the officer concerned will prepare an amendment instruction and will arrange for the amendment instruction and the related new/amended pages to be distributed and inserted into the Handbook.

6. For CD copies of the Handbook, Director (AAIB) or the officer concerned will arrange for an updated CD version to be made and distributed.

| | |
|---|---|
| **SECTION 1** | **: INTERNATIONAL FRAMEWORK** |
| **CHAPTER 1** | **: INTERNATIONAL CIVIL AVIATION ORGANISATION** |

1. Standards and Recommended Practices for Aircraft Accident Inquiries were first adopted by the ICAO Council on 11 April 1951 pursuant to Article 37 of the Convention on International Civil Aviation (Chicago Convention, 1944) and were designated as Annex 13 to the Convention.

2. The current version of Annex 13 is the 11th Edition dated July 2016, incorporating Amendment 18which becomes applicable on 5 November 2020.

| **SECTION 1 : INTERNATIONAL FRAMEWORK** |
|---|
| **CHAPTER 2 : OBJECTIVE OF INVESTIGATION** |

1. Investigators shall bear in mind ICAO's objective of investigation as stated in paragraph 3.1 of Annex 13 to the Chicago Convention, viz.:

> **The sole objective of an aircraft accident or incident investigation is to prevent future accidents and incidents. The purpose of an investigation is not to apportion blame or liability.**

2. ICAO's emphasis is on remedial action. Any investigation conducted under the (to quote relevant legislation here) the provisions of ICAO Annex 13 is separate from any judicial or administrative proceedings to apportion blame or liability.

3. The extent of the investigation and the procedure to be followed in carrying out an investigation will depend on the lessons that can be expected to be drawn from the investigation for the improvement of safety.

4. An aircraft accident or incident suggests hazards or deficiencies in the aviation system. Subject to paragraph 3 above, the investigation will attempt to identify all immediate and underlying systemic causes or contributing factors of an accident or incident. The investigation should also determine the facts, conditions and circumstances pertaining to the survival or non-survival of the occupants of the aircraft.

5. At the end or even in the course of the investigation, appropriate safety actions may be recommended, aiming at avoiding the hazards and eliminating the deficiencies in the aviation system, as well as improving the crashworthiness of the aircraft (thus preventing or minimising injuries to aircraft occupants in future accidents).

| | |
|---|---|
| **SECTION 1** | **: INTERNATIONAL FRAMEWORK** |
| **CHAPTER 3** | **: IMPORTANT ICAO DEFINITIONS** |

Appended below are definitions of some key terms as defined in Annex 13 to the Chicago Convention. These definitions are captured in Myanmar Aircraft Act and Myanmar Aircraft Accident and Incident Investigation Rules.

***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 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, tyres, 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.

*Note 1*: For statistical uniformity only, an injury resulting in death within 30 days of the date of the accident is classified, by ICAO, as a fatal injury.
*Note2*: An aircraft is considered to be missing when the official search has been terminated and the wreckage has not been located.

***Accident investigation authority*.** The authority designated by a State as responsible for aircraft accident and incident investigations within the context of this 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. The accredited representative would normally be from the State's accident investigation authority.

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

***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. The identification of causes does not imply the assignment of fault or the determination of administrative, civil or criminal liability.

***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.

***Flight recorder*.** Any type of recorder installed in the aircraft for the purpose of complementing accident/ incident investigation. Automatic deployable flight recorder (ADFR).A combination flight recorder installed on the aircraft which is capable of automatically deploying from the aircraft.
Note. See Annex 6 – Operation of aircraft, Parts Ⅰ, Ⅱ and Ⅲ, For specification 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.

***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 qualification, 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 certificate 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.

***Safety Recommendation of global concern(SRGC).*** A safety recommendation regarding a systemic deficiency having a probability of recurrence, with significant consequences at a global level, 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.

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

*Note* 2.-There may be a high probability of an accident if there are few or no safety defences remaining to prevent the incident from progressing to an accident. To determine this, an event risk-based analysis (that takes into account the most credible scenario had the incident escalated and the effectiveness of the remaining defences between the incident and the potential accident) can be performed as follow:

a) consider whether there is a credible scenario by which this incident could have escalated to an accident; and

b) access the remaining defences between the incident and the potential accident as:
- effective, if several defences remained and needed to coincidently fail; or
- limited, if few or no defences remained, or when the accident was only avoided due to providence.

Consider both the number and robustness of the remaining defences between the incident and the potential accident. Ignore defences that failed, and consider only those that worked and any subsequent defences still in place.

Note 1.- The most credible scenario refers to the realistic assessment of injury and /or damage resulting from the potential accident.

Note 2.- Defences include crew, their training and procedures, ATC, alerts (within and outside the aircraft), aircraft systems and redundancies, structural design of the aircraft and aerodrome infrastructure.

The combination of these two assessments helps to determine which incidents are serious incidents:

| | | b) Remaining defences between the incident and the potential accident | |
|---|---|---|---|
| | | Effective | Limited |
| a) Most credible scenario | Accident | Incident | Serious Incident |
| | No accident | Incident | |

The incidents listed are examples of what may be serious incidents. However, the list is not exhaustive and, depending on the context, items on the list may not be classified as serious incidents if effective defences remained between the incident and the credible scenario.

Near collisions requiring and 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[1] or an unassigned runway.

Take-off from a closed or engaged runway, from a taxiway[1] or an unassigned runway.

Landings or attempted landings on a closed or engaged runway, on a taxiway[1], on an unassigned runway or on unintended landing locations such as roadway.

Retraction of a landing gear leg or a wheel-up landing not classified as an accident.

Dragging during landing of a wing tip, an engine pod or any other parts of the aircraft, when not classified as an accident.

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 compartment 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 system seriously affecting the operation of the aircraft.

Flight crew incapacitation in flight:

a) for single pilot operations (including remote pilot);or
b) for multi-pilot operations for which flight safety was compromised because of a significant increase in workload for the remaining crew.

Fuel quantity level or distribution situation 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 incursion* (Doc 9870) contains information on the severity classification.

Take-off or landing incidents. Incidents such as under-shooting, overrunning or running off the side of runways.

System failures (including loss of power or thrust), 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.

1. Excluding authorized operations by helicopters.

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

(a) requires hospitalisation 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% 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, 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.

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

| | |
|---|---|
| **SECTION 1** | **: INTERNATIONAL FRAMEWORK** |
| **CHAPTER 4** | **: RESPONSIBILITY OF STATES FOR INSTITUTING AND CONDUCTING THE INVESTIGATION** |

## 1. Accidents or serious incidents in the territory of an ICAO State to aircraft of another ICAO State

1.1 ***Accident*** - When an accident has occurred, the **State of Occurrence** shall institute an investigation into the circumstances of the accident. The State of Occurrence shall be responsible for the conduct of the investigation, but it may delegate the whole or any part of the conducting of such investigation to another State, or a regional accident and incident investigation organisation, by mutual arrangement and consent. The State of Occurrence shall use every means to facilitate the investigation.

1.2 ***Serious incident*** - When a serious incident has occurred, the **State of Occurrence** shall institute an investigation into the circumstances of the serious incident when the aircraft is of a maximum certificated take-off mass of over 2 250 kg. The State of Occurrence may delegate the whole or any part of the conducting of such investigation to another State, or a regional accident and incident investigation organisation, by mutual arrangement and consent. The State of Occurrence shall use every means to facilitate the investigation.

1.3 The State of Occurrence should institute an investigation into the circumstances of a serious incident. Such a State may delegate the whole or any part of the conducting of such investigation to another State or a regional accident and incident investigation organization by mutual arrangement and consent. In any event the State of Occurrence should use every means to facilitate the investigation.

1.4 If the State of Occurrence does not institute and conduct an investigation, and does not delegate the investigation to another State or a regional accident and incident investigation organization, the State of Registry or in the following order, the State of Operator, the State of Design or the State of Manufacture is entitled to request in writing the State of Occurrence to delegate the conducting of such investigation. If the State of Occurrence gives express consent or does not reply to such a request within 30 days, the State making the request should institute and conduct the investigation with such information as is available.

1.5 When the whole investigation is delegated to another State, such a State is expected to be responsible for the conduct of the investigation, including the issuance of the investigation Final Report and the ADREP reporting.

*Note*: When a part of the investigation is delegated, the State of Occurrence usually retains the responsibility for the conduct of the investigation.

## 2. Accidents or serious incidents in the territory of the State of Registry

2.1 The **State of Registry** is the State of Occurrence and will discharge the obligation of the State of Occurrence.

## 3. Accidents or serious incidents in the territory of a non-ICAO State

3.1 If the non-Contracting State of Occurrence does not intend to conduct an investigation in accordance with Annex 13, the **State of Registry** or, failing that, the State of the Operator, the State of Design or the State of Manufacture *should* endeavour to and conduct an investigation in co-operation with the State of Occurrence but, failing such co-operation, should itself conduct an investigation with such information as is available.

## 4. Accidents or serious incidents outside the territory of any State

4.1 The **State of Registry** shall institute and conduct any necessary investigation. However, it may delegate the whole or any part of the investigation to another State or a regional accident and incident investigation organization by mutual arrangement and consent.

4.2 States nearest the scene of an accident in international waters shall provide such assistance as they are able and shall, likewise, respond to requests by the State of Registry.

4.3 If the State of Registry does not institute and conduct an investigation, and does not delegate the investigation to another State or a regional accident and incident investigation organization, the State of Operator or in the following order, the State of Design or the State of Manufacture is entitled to request in writing the State of Registry to delegate the conducting of such investigation. If the State of Registry gives express consent or does not reply to such a request within 30 days, he State making the request should institute and conduct the investigation with such information as is available.

4.4 If the State of Registry is a non-Contracting State which does not intend to conduct an investigation in accordance with Annex 13, the State of the Operator or, failing that, the State of Design or the State of Manufacture *should* endeavour to institute and conduct an investigation. However, such a State may delegate the whole or any part of the investigation to another State, or to a regional investigation organisation, by mutual arrangement and consent.

| | |
|---|---|
| **SECTION 1** | **: INTERNATIONAL FRAMEWORK** |
| **CHAPTER 5** | **: RESPONSIBILITY OF STATES INVOLVED IN AN INVESTIGATION** |

*Annex 13 provisions concerning the State of the Operator apply only when an aircraft is leased, chartered or interchanged and when the State is not the State of Registry and if it discharges, in respect of Annex 13, in part or in whole, the functions and obligations of the State of Registry.*

## 1. Responsibility of the State conducting the investigation

1.1 The accident investigation authority shall have independence in the conduct of the investigation and have unrestricted authority over its conduct. The investigation shall normally include:

- The gathering, recording and analysis of all relevant information on that accident or incident
- The protection of certain accident and incident investigation records in accordance with Annex 13 ( Para 5.12)
- If appropriate, the issuance of safety recommendations
- If possible, the determination of the causes and/or contributing factors; and
- The completion of the Final Report

1.2 The State conducting an investigation may call upon the best technical expertise from any source.

1.3 If neither the State of Registry nor the State of the Operator appoints an accredited representative to participate in the investigation, the State conducting the investigation *should* invite the operator to participate.

1.4 If neither the State of Design nor the State of Manufacture appoints an accredited representative to participate in the investigation, the State conducting the investigation *should* invite the organisations responsible for the type design and the final assembly of the aircraft to participate.

1.5 Any investigation conducted under the provisions of Annex 13 shall be separate from any judicial or administrative proceedings to apportion blame or liability.

1.6 A State shall ensure that any investigations conducted under the provisions of Annex 13 have unrestricted access to all available evidential material without delay.

1.7 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.

## 2. Participation of other States

2.1 In the event of an accident or serious incident, the following States will be entitled to participate in the investigation:

- State of Registry
- State of the Operator
- State of Design
- State of Manufacture

2.2 If these States consider it unnecessary to appoint accredited representatives to participate in the investigation, they should so advise the State of Occurrence with a minimum of delay.

2.3 However, when the State conducting an investigation of an accident to an aircraft of a maximum certificated take-off mass of over 2,250 kg specifically requests participation by the State of Registry, the State of the Operator, the State of Design or the State of Manufacture, the State(s) concerned shall each appoint an accredited representative.

2.4 The State of Registry or the State of the Operator shall appoint one or more advisers, proposed by the operator, to assist its accredited representative.

2.5 The State of Design and the State of Manufacture shall be entitled to appoint one or more advisers, proposed by the organisations responsible for the type design and the final assembly of the aircraft, to assist their accredited representatives.

2.6 Any State which on request provides information, facilities or experts to the State conducting the investigation will be entitled to appoint an accredited representative to participate in the investigation.

2.7 Any State that provides an operational base for field investigations, or is involved in search and rescue or wreckage recovery operations, or is involved as a State of a code-share or alliance partner of the operator may also be invited to appoint an accredited representative to participate in the investigation.

2.8 A State which has a special interest in an accident by virtue of fatalities or serious injuries to its citizens shall be entitled by the State conducting the investigation to appoint an expert to participate in the investigation.

3. **Responsibility of other States**

3.1 All States shall, on request from the State conducting the investigation of an accident or incident, provide that State with all the relevant information available to them.

3.2 Any State, the facilities or services of which have been, or would normally have been, used by an aircraft prior to an accident or an incident, and which has information pertinent to the investigation, shall provide such information to the State conducting the investigation.

3.3 The State of Registry and the State of the Operator, on request from the State conducting the investigation, are also obliged to provide pertinent information on any organisation whose activities may have directly or indirectly influenced the operation of the aircraft.

3.4 When the State of Occurrence is not aware of an accident or serious incident, the State of Registry or the State of the Operator, as appropriate, shall forward a notification of such an incident to the State of Occurrence, the State of Design and the Sate of Manufacture.

3.5 When an aircraft involved in an accident or serious incident lands in a State other than the State of Occurrence, the State of Registry or the State of the Operator shall, on request from the State conducting the investigation, furnish the latter State with the flight recorder records and, if necessary, the associated flight recorders.

3.6 When an accident or incident occurs in a non-Contracting State or outside the territory of any State, and when the State of Registry institutes an investigation, then the State of Registry shall send a notification with a minimum of delay and by the most suitable and quickest mean available to the State of the Operator, the State of Design, the State of Manufacture and ICAO (if the aircraft involved is of a maximum certificated take-off mass of over 2,250 kg or is a turbojet-powered aeroplane).

3.7 States shall not circulate, publish or give access to a draft report or any part thereof, or any documents obtained during an investigation of an accident or incident without the express consent of the State which conducted the investigation, unless such reports or documents have already been published or released by that latter State.

## 4. Entitlement of Accredited Representatives

4.1 A State entitled to appoint an accredited representative shall also be entitled to appoint one or more advisers to assist the accredited representative in the investigation.

4.2 Advisers assisting an accredited representative shall be permitted, under the accredited representative's supervision, to participate in the investigation to the extent necessary to enable the accredited representative to make his participation effective.

4.3 Participation in the investigation shall confer entitlement to participate in all aspects of the investigation, under the control of the investigator-in-charge, in particular to:

- Visit the scene of the accident
- Examine the wreckage
- Obtain witness information and suggest areas of questioning
- Have full access to all relevant evidence as soon as possible
- Receive copies of all pertinent documents
- Participate in readouts of recorded media
- Participate in off-scene investigative activities such as component examinations, technical briefings, tests and simulations
- Participate in investigation progress meetings including deliberations related to analysis, findings, causes, contributing factors and safety recommendations
- Make submissions in respect of the various elements of the investigation

4.4 However, participation of States other than the State of Registry, the State of the Operator, the State of Design and the State of Manufacture may be limited to those matters which entitled such States to participate.

4.5 The accredited representatives and their advisers shall provide the State conducting the investigation with all relevant information available to them, and shall not divulge information on the progress and the findings of the investigation without the express consent of the State conducting the investigation.

## 5. Entitlement of the expert of the State having suffered fatalities or serious injuries to its citizens

5.1 The expert appointed by the State which has suffered fatalities or serious injuries to its citizens is entitled to:

- Visit the scene of the accident
- 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
- Receive a copy of the Final Report

5.2 Such State will not be precluded from also assisting in the identification of victims and in meetings with survivors from that State.

| | |
|---|---|
| **SECTION 2** | **: MYANMAR'S OBLIGATION UNDER ANNEX 13** |
| **CHAPTER 1** | **: MYANMAR'S OBLIGATION TO INVESTIGATE** |

1. The Chief investigator of Accidents shall cause an investigation into an accident or a serious incident in the following circumstances:

(a) where the accident or serious incident occurs in Myanmar;

(b) where the accident or serious incident occurs in any non-Contracting State which does not intend to carry out an investigation of the accident in accordance with Annex 13 and involves a Myanmar aircraft or an aircraft operated by a Myanmar operator;

(c) where the accident or serious incident involves a Myanmar aircraft or an aircraft operated by a Myanmar operator and the investigation has been delegated to Myanmar by another Contracting State by mutual arrangement and consent;

(d) where the accident or serious incident occurs in a location which cannot be definitely established as being in the territory of any State and involves a Myanmar aircraft.

Note: ICAO has been requiring States to investigate accidents. ICAO has through Amendment 13 to Annex 13 required that a State shall also investigate a serious incident when the aircraft is of a maximum certificated take-off mass of over 2,250 kg.

2. The Chief investigator may, when he expects to draw air safety lessons from it, cause an investigation to be carried out into an incident, other than a serious incident, which occurs:

(a) in Myanmar or

(b) outside Myanmar involving a Myanmar aircraft or an aircraft operated by a Myanmar operator.

3. The Chief investigator of Accidents may, with the approval of the Minister of Transport and Communications, delegate the task of carrying out an investigation into an accident or a serious incident to another State or a regional accident and incident investigation organisation by mutual arrangement and consent. However, Myanmar will still need to facilitate to the best of its ability the investigation carried out by that State or the regional investigation organization.

| | |
|---|---|
| **SECTION 2** | **: MYANMAR'S OBLIGATION UNDER ANNEX 13** |
| **CHAPTER 2** | **: MYANMAR AVIATION LEGISLATION** |

The main instruments are:

- The Union of Myanmar Aircraft Act(1934)
- Myanmar Aircraft Accident and Incident Investigation Rules

| | |
|---|---|
| **SECTION 3** | **: PREPARATION FOR INVESTIGATION** |
| **CHAPTER 1** | **: STANDBY ARRANGEMENT** |

## 1. Duty Officer System

1.1 The industry will report accidents and incidents to the AAIB Duty Officer who will then alert the Chief investigator of Accidents.

1.2 The contact number of the Duty Officer is 09421033695 and 09 5412862.

1.3 The Duty Officer will be supported by a Deputy Duty Officer.

## 2. Responding to accident/serious incident

2.1 When the Duty Officer receives an accident or serious incident notification, he shall proceed to the accident/incident site quickly, where appropriate. The Deputy Duty Officer will help the Duty Officer arrange for activation of the other investigators so as to allow the Duty Officer to concentrate on the on-site work, and may return to the office to collect the necessary equipment before joining the Duty Officer at the occurrence site.

2.2 The other investigators, on being activated, shall proceed to the accident/incident site quickly or to the Accident Investigation Command Centre or to any other location as instructed.

2.3 If the accident or serious incident has occurred in Myanmar, the Duty Officer shall take the necessary actions on site until the investigator-in-charge arrives and keep the Chief investigator of Accidents informed of the action taken.

## 3. Preparation for Overseas Assignment

3.1 All investigators shall arrange their personal affairs to enable them to be ready to depart for overseas investigation (including attachment) with a minimum of delay.

## 4. Maintaining contact with investigators

4.1 The Administration Support Section shall maintain a list of telephone/ handphone/ pager contact numbers of all investigators. All investigators shall inform the Administration Support Section of any changes to their contact numbers as soon as possible.

4.2 All investigators shall ensure that their phones and pagers are functioning and, when they are not, shall forward alternate phone/ fax/ pager contact numbers to the Administration Support Section.

| | |
|---|---|
| **SECTION 3** | **: PREPARATION FOR INVESTIGATION** |
| **CHAPTER 2** | **: INVESTIGATORS' PERSONAL DUTY AND RESPONSIBILITY** |

## 1. General

1.1 Aircraft is a complex machine and aviation is a complex industry. The aviation environment is also complex. Investigators must try their best to keep abreast of all related developments, through reading, gathering information from counterparts and experts in other countries and sharing such information amongst them.

## 2. Safety

2.1 AAIB investigators should be aware of the potential hazards at an accident site and the precautions to be taken (more details in Chapters 5, 6 and 7).

2.2 Some of the personal protective equipment needed for use by investigators at the accident site or when performing off-site examinations and tests on wreckage parts are detailed in Chapter 6.

## 3. Immunisation

3.1 Investigators shall immunise themselves against tetanus, influenza, and hepatitis A and B.

## 4. Physical fitness

4.1 As they may be required to access difficult terrain (e.g. mountains, deserts, jungles, swamps), investigators should keep themselves physically fit.

## 5. Personal field kit

5.1 AAIB investigators are issued with personal investigation field kit and are responsible for ensuring that the consumables are replenished after each field deployment. The investigators are also required to ensure that life expired items are replaced with new ones.

5.2 AAIB investigators are to obtain replenishments from the Administration Support Section. The Administration Support Section will maintain and monitor the list of life limited items issued to the investigators so as to be able to plan the replenishment schedules.

| | |
|---|---|
| **SECTION 3** | **: PREPARATION FOR INVESTIGATION** |
| **CHAPTER 3** | **: INVESTIGATION FIELD KIT** |

The following is a typical list of items that investigators may need at the accident site. Usually, there is no need for each investigator to bring all the items in the list.

**General**

- Identification papers, investigator's official tag, armband or high-visibility jacket
- Relevant documents (e.g. regulations, accident investigation manual and handbook, checklists, report forms)
- Appropriate aircraft manuals and parts catalogues
- Emergency funds

**Survey equipment**

- Large-scale maps of the accident area
- Magnetic compass
- Global Positioning System receiver
- Surveying equipment [Note: Debris mapping may be contracted out.]
- Clinometer
- Navigational computer, protractor and dividers
- Measuring tape, at least 20 m long, and a 30-cm-long ruler
- Reel of cord, 50 to 300 m long

**Marking Equipment**

- Tie-on tags
- Flag markers and stakes
- Writing material, graph paper, waterproof notebooks and clipboards
- Pens, pencils, grease pencils and permanent markers

**Tools and Sampling Materials**

- Tool kit
- Waterproof flashlight with spare batteries and bulbs
- Small magnet
- Multi-purpose knife
- Inspection mirror

- Magnifying glass (10 x)
- Containers (e.g. antistatic type for electronic components with non-volatile memory) and sterile bottles (for aircraft fuel, oil and fluid samples, as well as for pathological fluid and tissue samples)
- Syringes
- Plastic bags (assorted) and plastic sheets
- Masking tape, duct tape

**Miscellaneous Items**

- First-aid kit
- Recording equipment
  - Camera (digital/conventional)
  - Video camera
  - Small tape recorder, spare cassettes and batteries
- Model aircraft
- Protective gear
  - Heavy gloves, protective overalls and other protective equipment, such as hard hats, goggles and face masks
  - Protective clothing and equipment to protect against biological hazards (see Chapter 6 for more details)
- Binoculars
- Communication equipment
  - Portable means of on-site communication, e.g. handphone
  - Lap-top and computer
- Facsimile machine

| | |
|---|---|
| **SECTION 3** | **: PREPARATION FOR INVESTIGATION** |
| **CHAPTER 4** | **: DUTY OFFICER'S BAG** |

## 1. General

1.1 The Duty Officer's bag contains basic equipment to enable the officer to carry out urgent actions to preserve any evidence which otherwise may become obliterated. The list of equipment contained in the bag is not meant to be exhaustive.

## 2. Responsibility for the Duty Officer's Bag

2.1 During the change of duty, the officer taking over the duty and the Duty Officer's bag should go through the inventory to ensure that all the items in the bag are accounted for and that consumables and life limited items are replenished. He will then sign in a record book in the bag.

## 3. Contents of the Duty Officer's Bag

3.1 Following are contents of the Duty Officer's bag:

(a) Handphone
(b) Single wheel walking measure
(c) GPS
(d) 18 feet measuring tape
(e) Digital camera
(f) Batteries AA size (4 pieces)
(g) Torchlight (with batteries) - waterproof
(h) Rubber, plastic and leather gloves
(i) Reflective vest
(j) Tape recorder (digital)
(k) Plastic bags
(l) Combination plier - 8"
(m) Screwdriver - plain 8"
(n) Screwdriver - philips - No. 2
(o) First aid kit
(p) Protective spectacles
(q) Stationery (pen, pencil, marker pen, stapler, scissors, scotch tape, etc)
(r) Accident Investigation Handbook

| | |
|---|---|
| **SECTION 3** | **: PREPARATION FOR INVESTIGATION** |
| **CHAPTER 5** | **: HAZARDS AT ACCIDENT SITES** |

See AAIB Accident Site Safety Manual.

| | |
|---|---|
| **SECTION 3** | **: PREPARATION FOR INVESTIGATION** |
| **CHAPTER 6** | **: INTERVIEWING TECHNIQUES** |

## 1. Purpose of interviews

1.1 Information collected from interviews is used to confirm, clarify, or supplement information learnt from other sources. In the absence of other data, interviews can become the singular source of information.

1.2 The role of an investigator, as an interviewer, is to obtain from witnesses evidence that is accurate, complete, and as detailed as possible. To accomplish this, the investigator must:

- Be prepared
- Have a clear objective
- Have a good knowledge of the occurrence and related background information
- Be able to adapt to the witness' style
- Be willing to go beyond the actual facts

1.3 Witnesses for an occurrence investigation can include surviving flight crew and cabin crew, passengers, next-of-kin, eyewitnesses, air traffic controllers, maintenance personnel, training personnel, rescue and firefighting personnel, and management. Interviews should be conducted as soon as practicable to avoid:

- Loss of perishable information from fading memory
- Interpretation and rationalisation of events
- Contamination caused by exchange of information (e.g. news media, other witnesses)

1.4 If it is not practicable to immediately interview individuals whose information is perishable, the investigators should request that they prepare a written statement.

1.5 The investigators shall bear in mind that an interview is NOT an interrogation.

## 2. Preparing for the interview

2.1 The investigators should take time to thoroughly prepare for the interview and consider doing the following:

- Follow appropriate company or agency protocol when arranging for the interview
- Assess the audience and dress accordingly
- Prepare a brief on the status of the investigation
- Study the background information (e.g. relevant manuals, regulations)
- Prepare for technical descriptions and explanations
- Review the following:
  - The facts relating to the crash sequence
  - The ATC or CVR/FDR tapes, if applicable
  - Technical information (e.g. aircraft systems)
  - Any operational peculiarities in procedures
  - The crew's personal records
  - Human performance references to identify relevant questions
  - ATS and airport references, if relevant
  - Any legal aspects
- Ensure all relevant documents and equipment (e.g. models, maps, pictures, diagrams of aircraft seat rows/exits/lavatories/galleys) are available
- Define the general objectives of the interview
- Prepare a set of appropriate questions to address all areas of concern during the interview
- Request the assistance of experts for interviews of a highly technical nature

## 3. The interview process

3.1 An interview is normally structured in three parts: an opening, a main body and a closing. An interview session should not last for more than two hours.

3.2 The number of people attending the interview should be as few as possible, e.g. two interviewers and the interviewee (plus maybe an expert). The interviewee may be allowed to be accompanied by a third person during the interview, provided that this person is not his superior. This person is not allowed to answer questions or to suggest answers to questions. Permission for his presence may be withdrawn if he is not cooperative.

3.3 If possible, the investigators should conduct interviews in a neutral location and select a location that is quiet and comfortable, free from interruptions and familiar to the interviewee (if appropriate).

3.4 The investigators should determine the language of choice of the interviewee. If the language is not one spoken by the interviewing investigators, arrangement should be made for another qualified investigator suitably fluent in that language to conduct the interview. If such an investigator is not available or if the interviewee cannot communicate effectively in a language spoken by the investigator, arrangement will have to be made for an interpreter.

3.5 The interview process - Opening

3.5.1 When opening an interview, the investigators should reassure the interviewee about:

- The purpose of the investigation (not for blame)
- Their roles as investigators in the accident
- The goals of the interview
- The importance of the information the interviewee may provide
- The interviewee's rights
- Protection of the statement made by the interviewee
- Use of tape recorder, if the interviewee has no objection
- The interview procedure to be followed

3.5.2 The investigators should establish a rapport with the interviewee at the outset by:

- Being polite
- Introducing themselves
- Having mobile phones turned off before the interview
- Behaving in a natural manner and not making the interview seem artificial
- Keeping interruptions to a minimum
- Striving for an atmosphere of friendly conversation
- Intervening only enough to steer the conversation in the desired direction
- Displaying a sincere interest

3.6 The interview process - Main body

3.6.1 The investigators should begin the main body of the interview with a "free recall" question to let the interviewee talk about what he knows of the occurrence or subject matter. Such a free recall question allows the interviewee:

- To ease into the interview in a more relaxed manner.
- To feel that what he has to say is significant.
- To provide information which is uncontaminated by the investigators.

3.6.2 As the interview progresses, the investigators may use a mixture of other types of questions:

- Open-ended questions would evoke rapid and accurate descriptions of the events and lead to more participation from the interviewee.
- Specific questions are necessary to obtain detailed information and may also prompt the interviewee to recollect further details.
- Closed questions produce “yes” or “no” answers.
- Indirect questions might be useful in delicate situations.

3.6.3 Investigators should avoid questions with the definite article unless the object in question has already been mentioned by the interviewee. For example, they should ask “Did you see a broken strut?” rather than “Did you see the broken strut?” They should also use neutral sentences without adjectives or figurative verbs and avoid leading questions. For example, they should ask “Which way was the aircraft travelling?” rather than “Was the aircraft travelling west?’

3.6.4 Other interview tips for the investigators:

To design the questions so that they do not mention objects before the interviewee mentions them. A question which mentions some objects(whether the object existed or not) tends to cause the interviewee to assert that he saw the object.

- To try to get the interviewee to cooperate in a general way before asking them to cooperate in a specific way.
- To use indirect questioning for questions of a very personal nature.
- To let the interviewee fill in the information gaps himself.
- To remain objective and avoid making evaluations early in the interview.
- To remember that the interviewee approaches the occurrence from a different perspective than the investigators’.
- To adapt to the situation and to the interviewee, as the interview is a dynamic process.
- To be aware of possible biases when assessing what was said during the interview.

- Not to allow the interviewee's personality to influence our interpretation of the interview.
- Not to accept any information gained in an interview at face value, but to use the information to confirm, clarify or supplement information from other sources.

3.7 The interview process - Closing

3.7.1 In closing an interview, the investigators should consider the following:

- To summarise the important points.
- To give the interviewee an opportunity to expand on any points previously covered, add further points which he feels are significant, or ask questions.
- To reassure and thank the interviewee.
- To determine the interviewee's availability for further interviews.
- To let the interviewee know how to contact the AAIB in the future.

## 4. Eyewitnesses

4.1 The investigators should obtain the following information from all eyewitnesses of an accident or incident:

- Personal data to complete the interview record.
- Time of observation of the occurrence, if noted by the eyewitness. Otherwise, time as determined in relation to other events.
- Location of the eyewitness at the time of the observation, to be pinpointed on a map or aircraft diagram, if necessary.
- Weather, light and visibility conditions
- Any obstructions to visibility or sound.
- What drew the attention of the eyewitness to the aircraft.
- Anything heard or seen concerning the aircraft, and the actions of other nearby aircraft.
- Actions taken by the eyewitness relating to the occurrence.
- Actions taken by others such as rescue and firefighting personnel.
- Anything taken from the wreckage scene and by whom.
- Any photographs or video taken and by whom.
- Any other eyewitnesses, their names and addresses.
- Any other agency who previously interviewed the witness about the occurrence, such as Police or media.

4.2 Tips for the interviewing of eyewitnesses:

- If possible, to interview eyewitnesses at the location where they observed the occurrence.
- To conduct the interview one-on-one, away from other people.
- To get eyewitnesses to tell us everything they saw, by starting with a question like "Tell me what first directed your attention to the aircraft."
- To let the eyewitnesses demonstrate a manoeuvre with an aeroplane model rather than describe it verbally.

4.3 Eyewitnesses may be re-interviewed for specific information, but it has to be borne in mind that their initial account would likely be the most accurate.

## 5. Handling of difficult witnesses

5.1 Crew members – They might be hesitant, defensive or unable to communicate information, possibly because of the following factors:

- Guilty feelings that they survived while other died, or grief over deaths of friends.
- Struggle or torment over their role in the occurrence.
- Concern with regulatory actions, loss of their ratings or jobs.
- Pressure from their company or union representatives.
- Their pride.
- Confusion or vulnerability of the situation.

5.2 Reluctant witnesses – When witnesses refuse to be interviewed, the investigators may consider the following:

- To try to determine why and resolve the problem.
- To enlist the assistance of an external party (e.g. the pilot union may be asked to help convince the flight crew to be interviewed).
- To appeal to their concern for flight safety.
- To allow witnesses to be accompanied by their representatives at the interview.
- As a last resort, to apply legal process (to summon under their own hand the attendance of the witnesses).

5.3 Uncooperative witnesses – During interviews, if witnesses do not cooperate, refuse to answer or give deliberately evasive answers, the investigators may consider the following:

- To explain to the witnesses to make sure they understand the purpose of the interview.
- To appeal to their concern for flight safety.
- To explain that their evidence may contribute to preventing a recurrence of an accident.
- To concentrate on the positive, preventive side of the investigation.
- To determine if they would be more cooperative if they had representatives present.
- As a last resort, to apply legal process.

5.4 Emotional or grieving witnesses – When witnesses are emotionally upset or grieving, the investigators may consider the following:

- To be sympathetic and offer condolences (but an investigator should try not to say "I know how you feel" unless he really had a similar experience).
- To maintain your stature as a professional investigator with a job to do.
- To explain that our job as investigators is to try to prevent a recurrence.
- To anticipate that the witnesses will want to talk about the deceased.
- To avoid saying anything that may be interpreted as a negative reflection on the deceased.
- For the more sensitive questions, to imply that we as investigators are following standard procedures when asking such questions and that we are protecting them (the witnesses) as best as we can.

## 6. Documenting the interview

6.1 The interview should be documented. This may be done in the following ways:

- Transcript
- Summary
- Written statement
- Note-to-file
- Hand written notes
- Tapes

6.2 Personal data of the witnesses should be kept together with the statements. Personal data include name, age or date of birth, occupation, role in the accident/ incident (e.g. pilot-in-command, cabin attendant, passenger and eyewitness), address, telephone/fax/e-mail contacts.

6.3 If there is a need to get the interviewee sign an interview statement, the following phrases may be incorporated, as applicable:

**"I certify that the above statement is a true account of the facts, as far as I am concerned, pertaining to the accident/incident." or "I declare that the above statement to be a true statement."**

6.4 Time may be saved for all concerned (including the interviewee) if the interviewee allows his statement to be shared with other parties which may also wish to interview him. In such a case, the following phrase may be incorporated in the interviewee's statement:
"I have no objection to a copy of this statement being passed to … (e.g. the Coroner)."

## 7. Use of tape recorder

7.1 Recording the interview on tape is highly recommended because it would enable interviewers to:

- Focus their attention on what is said
- Direct the interview and adapt and formulate questions based on what is said
- Perceive non-verbal signs that might contradict or reinforce what is said
- Notice discrepancies or sudden changes in conversation
- Have a non-biased and accurate summary of what is said
- Review critical elements of the interview later, if necessary

7.2 When using tape recording for the interview, the investigators should consider the following:

- Carry extra batteries
- Find a quiet place to avoid background noise
- Test the recorder before and after the interview
- Position the recorder close enough to all participants to avoid problems of low volume
- Do not let the recorder's presence be too obvious
- Ask soft-speaking witnesses to speak louder

| | |
|---|---|
| **SECTION 3** | **: PREPARATION FOR INVESTIGATION** |
| **CHAPTER 6** | **: WITNESS STATEMENTS** |
| **APPENDIX 1** | |

The following should be noted for the taking of statements:

- Statements should, in normal circumstances, be taken by an Investigator of Accidents. The Investigator of Accidents should write down in longhand the information given by the witness. As far as possible, the witness' own words should be used. If there is any difference of opinion regarding the form of wording to be used, the wishes of the witness must prevail.
- The witness should be given ample time to read over the written statement before he signs it.
- If the witness wishes a solicitor, advisor or friend to be present when a statement is being taken, this should normally be agreed to but it should be appreciated that this is not a right. When the presence of a third person obstructs or impedes the Investigator of Accidents in the exercise of his powers, the witness' request for the third person to be present should be refused or permission for him to be present withdrawn. The solicitor, adviser or friend should not be permitted to answer questions or to suggest answers to questions.
- If a third party, such as a Flight Safety Officer or other representative of the operator, wishes to be present at the interview of a witness, this should be refused unless his presence has been specifically requested as an adviser or the witness has been asked, not in the presence of the third party, whether he agrees to the person being present and he has no objection.
- Witnesses should be given copies of their statements as soon as possible. Whenever practicable, copies of the originals should be left with the witnesses. (Typed copies may be sent later if necessary.)
- The record if each statement taken from every witness should include the following:
  (a) The full name in block letters.
  (b) Age (can be given as "over 18").
  (c) Occupation.
  (d) Normal and temporary addresses (if applicable).
  (e) Date, time and place the statement was taken.
  (f) Signature of the witness declaring the truth of the statement.
  (g) Counter signature of the Investigator of Accidents taking the statement.
  (h) When the statement is of more than one page, items (a) to (g) will appear in each page (e.g. at the bottom).
  (i) The witness will initial all amendments, alterations or additions to the statement.

| **SECTION 3 : PREPARATION FOR INVESTIGATION** |
| --- |
| **CHAPTER 6 : BEFORE INVESTIGATION CHECKLIST**<br>**APPENDIX 2** |

- Objective of investigation
- Safety Equipment /necessary equipment
- Bloodborne Pathogen
- Site safety briefing
- Potential hazards at an accident site
- Seconded personnel/experts
    - release of document /information
    - conflict of interest
- Investigators etiquette/interviewing techniques
- Roles of the various local supporting organizations
- Site security
- Occurrence involving unlawful interference
- Release of information to accident victims and their families
- Coordination with Crisis Management Team
- Field Investigation

| | |
|---|---|
| **SECTION 4** | **: NOTIFICATION OF OCCURRENCES** |
| **CHAPTER 1** | **: REPORTING OF OCCURRENCES TO THE AAIB** |

1. When an accident or serious incident has occurred to:
   - a civil aircraft in Myanmar
   - a Myanmar aircraft or aircraft operated by a Myanmar operator outside Myanmar, or
   - a military aircraft during a civilian organised flying display in Myanmar that is held at an aerodrome or premises other than a naval, military or air force aerodrome or premises,

the relevant person shall, as soon as is reasonably practicable, notify the AAIB Duty Officer by the quickest means of communication available, and in the case of an accident that has occurred in or over Myanmar, notify a Police officer of the accident and of the place where it has occurred.

2. The relevant person is defined as:
   - The pilot-in-command of the aircraft at the time of the accident or serious incident or if he is killed or incapacitated, the operator of the aircraft;
   - Where the accident or serious incident has occurred on or adjacent to an aerodrome in Myanmar, the owner or operator of the aerodrome;
   - Where the accident or serious incident has occurred in Myanmar airspace, the air traffic services provider; or
   - Where the accident or serious incident has occurred during a civilian-organised flying display in Myanmar held outside military premises, the organiser of the flying display.

3. The relevant person notifying the AAIB shall furnish the following information as far as possible:

a) Whether the occurrence was an accident or incident

b) Manufacturer, model, nationality and registration marks, and serial number of the aircraft

c) Name of the owner, operator and hirer, if any, of the aircraft

d) Name of the pilot-in-command, and nationality of crew and passengers

e) Date and time (local time or UTC) of the accident or serious 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 (and elevation of the site, if available)

h) Number of persons (crew and passengers): on board, killed and seriously injured; and number of other people killed and seriously injured

i) Description of the accident or serious incident and the extent of damage (see **Appendix 3** for guidance for the determination of aircraft damage) to the aircraft so far as it is known as well as the extent of damage to any other properties involved

j) Physical characteristics of the accident or serious incident area, as well as an indication of access difficulties or special requirements to reach the site

k) Identification of the person sending the notice, and for an occurrence outside Myanmar the means by which the foreign investigator-in-charge or the foreign investigation authority concerned may be contacted

l) Presence and description of dangerous goods on board

4. Where an incident, other than a serious incident, takes place –

- in or over Myanmar;
- or outside Myanmar to a Myanmar aircraft or an aircraft operated by a Myanmar operator;

the Chief investigator may, by notice in writing, require the owner, operator, pilot-in-command or hirer of the aircraft to furnish such information as in the latter's possession or control with respect to the incident.

| | |
|---|---|
| **SECTION 4** | **: NOTIFICATION OF OCCURRENCES** |
| **CHAPTER 1** | **: DUTY OFFICER'S ACTION ON RECEIVING** |
| **APPENDIX 1** | **NOTIFICATION** |

1. When receiving notification of an occurrence by phone, the Duty Officer may use the form in **Appendix 2** to note down the details of the occurrence and the contact numbers of the reporter of the occurrence. He shall prompt the reporter for as much information as listed in paragraph 3 of Chapter 1 as possible.

2. The Duty Officer should cross check the occurrence information with other agencies (e.g. airport operator, air traffic services provider).

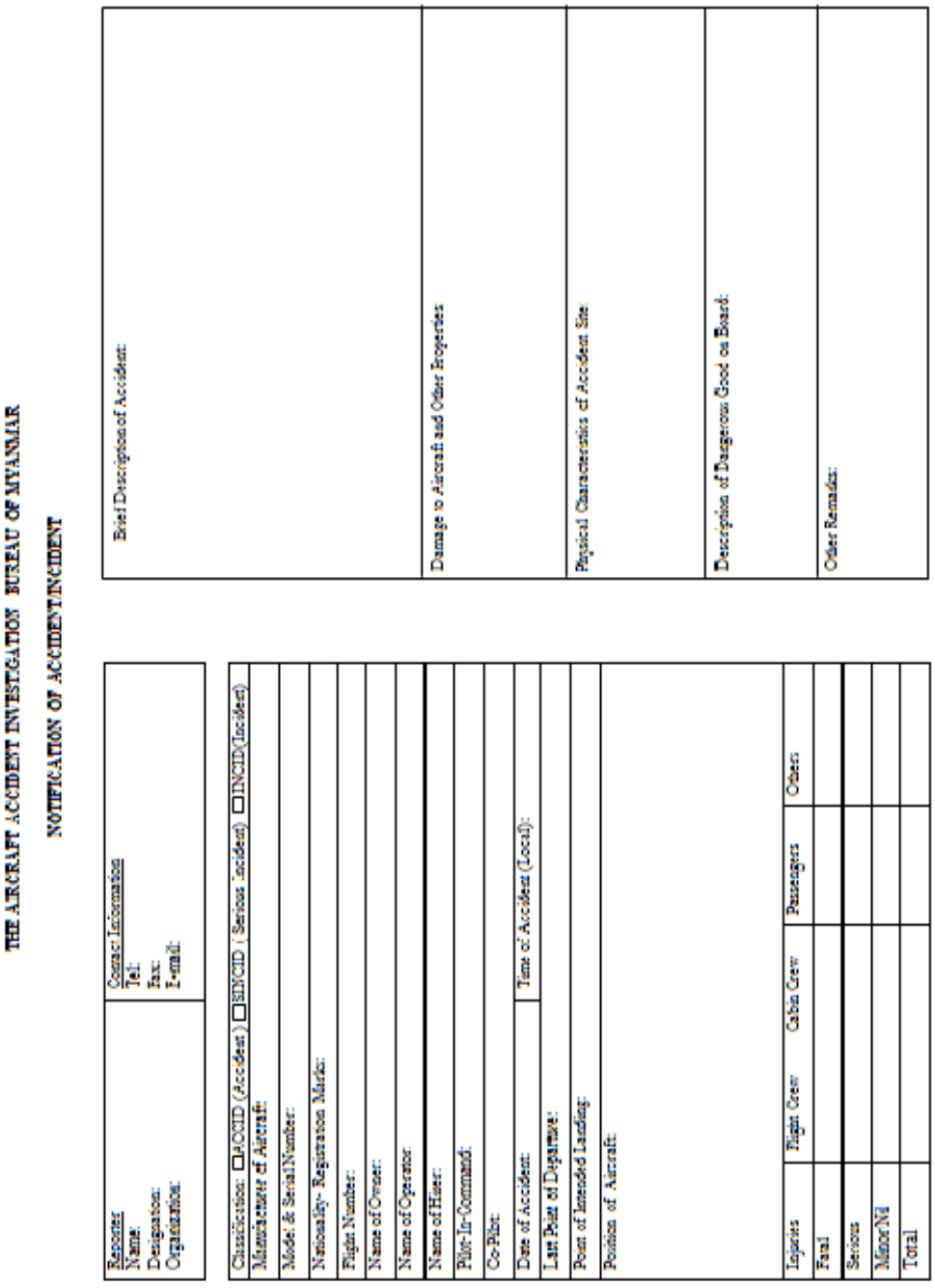
3. The Duty Officer should alert the Chief investigator of Accidents about the occurrence.

4. If there is reason to believe that the Ministry of Transport and Communications (MOTC) or the Civil Aviation Authority of Myanmar (CAA) or, when relevant, the AIRPORT OPERATOR has not been informed or will not be informed soon of the occurrence, the Duty Officer shall inform MOTC or CAA or AIRPORT OPERATOR.

5. When instructed by the Chief investigator of Accidents, the Duty Officer will activate the other investigators and the Accident Investigation Command Centre (AICC).

6. For accident in international waters involving Myanmar aircraft or aircraft operated by a Myanmar operator, the AAIB Duty Officer shall proceed to the AICC.

| | |
|---|---|
| **SECTION 4** | **: REPORTING OF OCCURRENCES TO THE AAIB** |
| **CHAPTER 1** | **: SAMPLE NOTIFICATION FORM** |
| **APPENDIX 2** | |



THE AIRCRAFT ACCIDENT INVESTIGATION BUREAU OF MYANMAR

NOTIFICATION OF ACCIDENT/INCIDENT

| Reporter<br>Name:<br>Designation:<br>Organization: | Contact Information<br>Tel:<br>Fax:<br>E-mail: |
|---|---|

Classification: ☐ACCID (Accident) ☐SINCID ( Serious Accident) ☐INCID(Incident)

Manufacturer of Aircraft:

Model & Serial Number:

Nationality- Registration Marks:

Flight Number:

Name of Owner:

Name of Operator:

Name of Hirer:

Pilot-In-Command:

Co-Pilot:

Date of Accident: Time of Accident (Local):

Last Point of Departure:

Point of Intended Landing:

Position of Aircraft:

| Injuries | Flight Crew | Cabin Crew | Passengers | Others |
|---|---|---|---|---|
| Fatal | | | | |
| Serious | | | | |
| Minor/Nil | | | | |
| Total | | | | |

Brief Description of Accident:

Damage to Aircraft and Other Properties

Physical Characteristics of Accident Site

Description of Dangerous Good on Board:

Other Remarks:

| | |
|---|---|
| **SECTION 4** | **: NOTIFICATION OF OCCURRENCES** |
| **CHAPTER 1** | **: GUIDANCE FOR THE DETERMINATION OF AIRCRAFT** |
| **APPENDIX 3** | **DAMAGE** |

1. If an engine separates from an aircraft, the event is considered an accident even if damage is confined to the engine.

2. A loss of engine cowls (fan or core) or reverser components, which does not result in further damage to the aircraft, is not considered an accident.

3. An occurrence where compressor, turbine blades, or other engine internal component is ejected through the engine tail pipe is not considered an accident.

4. A collapsed or missing radome is not considered an accident, unless there is related substantial damage in other structures or systems.

5. Any missing flap, slat and other lift augmenting device, winglet, etc., that is permitted for dispatch under the Configuration Deviation List is not considered an accident.

6. Where any retraction of a landing gear leg, or wheels up landing, has resulted in skin abrasion only and if the aircraft can be safely dispatched after minor repairs, or patching, and subsequently undergoes more extensive work to effect a permanent repair, then the occurrence is not considered an accident.

7. If the structural damage is such that the aircraft depressurises, or cannot be pressurised, the occurrence is considered an accident.

8. Any occurrence that entails the removal of any component for inspection following the occurrence, such as the precautionary removal of an undercarriage leg following a low speed runway excursion, while such removal may involve considerable work, is not considered an accident unless significant damage is found.

9. Any occurrence that involves an emergency evacuation is not considered an accident unless someone has sustained serious injuries, or the aircraft has sustained significant damage, as a result of the occurrence.

| | |
|---|---|
| **SECTION 4** | **: NOTIFICATION OF OCCURRENCES** |
| **CHAPTER 2** | **: NOTIFICATION OF ACCIDENT OR SERIOUS INCIDENT IN MYANMAR TO OTHER STATES** |

1. **Myanmar as State of Occurrence**

1.1 The Chief investigator shall forward a notification of an accident, a serious incident, or an incident to be investigated with a minimum of delay and by the most suitable and quickest means available (e.g. telephone, fax, e-mail, AFTN), to:

- State of Registry
- State of the Operator
- State of Design
- State of Manufacture and
- ICAO (if the aircraft involved is of a maximum mass of over 2,250 kg or is a turbojet-powered aeroplane)

2. **Dispatch of the notification**

2.1 The notification shall be in plain language and contain as much of the following details as are available:

(a) The identifying abbreviation ACCID for accidents, SINCID for serious incidents and INCID for incidents

(b) Manufacturer, model, nationality and registration marks, and serial number of the aircraft

(c) Name 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

(g) Position of the aircraft with reference to some easily defined geographical point, and latitude and longitude (and elevation of the site, if available)

(h) Number of persons (crew and passengers): on board, killed and seriously injured; and number of other people killed and seriously injured

(i) Description of the accident or incident and the extent of damage to the aircraft so far as it is known as well as the extent of damage to any other properties involved

(j) An indication to what extent the investigation will be conducted or is proposed to be delegated by the State of Occurrence to another Contracting State

(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 (e.g. UN number, dangerous goods class, quantity or weight, location)

2.2 The dispatch of the notification shall not be delayed just because information is incomplete. Any omitted details, as well as other known relevant information, can be forwarded to the States concerned and ICAO as soon as they become available.

2.3 **Appendix 1** shows an example of a notification based on the example in Appendix 1 to Chapter 4 of Part I of ICAO Manual of Aircraft Accident and Incident Investigation (Doc 9756).

| | |
|---|---|
| **SECTION 4** | **: NOTIFICATION OF OCCURRENCES** |
| **CHAPTER 2** | **: EXAMPLE OF A NOTIFICATION** |
| **APPENDIX 1** | |

The following is an example of a notification.

| S/N | Information required per Annex 13 | Example |
|---|---|---|
| (a) | Classification of occurrence | ACCID |
| (b) | Manufacturer, model, nationality and registration marks, and serial number of the aircraft | Boeing 737-300, United Kingdom, G-AMSW, serial no. 20280 |
| (c) | Name of the owner, operator and hirer, if any, of the aircraft | Derby Aviation |
| (d) | Qualification of the pilot-in-command, and nationality of crew and passengers | ATPL issued by CAA UK, British |
| (e) | Date and time (local time or UTC) of the accident or incident | 7 October 1983 at 1314 hours local time |
| (f) | Last point of departure and point of intended landing of the aircraft | London-Heathrow to Perpignan-Riversaltes |
| (g) | Position of the aircraft with reference to some easily defined geographical point, and latitude and longitude (and elevation of the site, if available) | 12 km south of Prades, 42-33 N, 02-26 W, elevation 2,200 m |
| (h) | Number of persons (crew and passengers): on board, killed and seriously injured; and number of other people killed and seriously injured | 6 crew and 57 passengers aboard, all fatally injured. Other: none |
| (i) | Description of the accident or incident and the extent of damage to the aircraft so far as it is known as well as the extent of damage to any other properties involved | 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 to another Contracting State | Investigation by BEA |
| (k) | Physical characteristics of the accident or incident area, as well as an indication of access difficulties or special requirements to reach the site | Mountainous area, difficult access, perpetual snow |
| (l) | Means by which our investigator-in-charge can be contacted | Contact Mr Y of BEA at Tel/Fax/E-mail … |
| (m) | Presence and description of dangerous goods on board | Dry ice/ UN1845/Class 9/200kg/<br>hold 5 |

| | |
|---|---|
| **SECTION 4** | **: NOTIFICATION OF OCCURRENCES** |
| **CHAPTER 3** | **: NOTIFICATION WHEN STATE OF OCCURRENCE IS NOT AWARE OF OCCURRENCE** |

## 1. Myanmar as State of Registry or State of the Operator

1.1 If the AAIB is aware of an accident or serious incident involving a Myanmar aircraft or an aircraft operated by a Myanmar operator and there is reason to believe that the State of Occurrence is not aware of the accident or serious incident, the Chief investigator of Accidents shall notify the following States of the accident or serious incident in a similar way as described in Chapter 2 of Section 4:

- State of Occurrence
- State of Design
- State of Manufacture
- State of the Operator (if Myanmar is the State of Registry but not the State of the Operator)
- State of Registry (if Myanmar is the State of the Operator but not the State of Registry)
- ICAO (if the aircraft involved is of a maximum certificated take-off mass of over 2,250 kg or is a turbojet-powered aeroplane)

| | |
|---|---|
| **SECTION 4** | **: NOTIFICATION OF OCCURRENCES** |
| **CHAPTER 4** | **: NOTIFICATION FOR OCCURRENCE IN A NON-CONTRACTING STATE INVOLVING A MYANMAR AIRCRAFT** |

1. For accidents or serious incidents that occurred in a non-Contracting States and if the non-Contracting State does not intend to conduct an investigation, Myanmar as the State of Registry will conduct the investigation. The Chief investigator of Accidents will notify the following States of the accident or serious incident in a similar way as described in Chapter 2 of Section 4:

- State of Design
- State of Manufacture
- State of the Operator (if Myanmar is not the State of the Operator)
- ICAO (if the aircraft involved is of a maximum certified take-off mass of over 2,250 kg or is a turbojet-powered aeroplane)

2. Even if the non-Contracting State intends to conduct an investigation, the Chief investigator may also notify the States mentioned in paragraph 1.

| | |
|---|---|
| **SECTION 4** | **: NOTIFICATION OF OCCURRENCES** |
| **CHAPTER 5** | **: NOTIFICATION FOR OCCURRENCE OUTSIDE THE TERRITORY OF ANY STATE INVOLVING A MYANMAR AIRCRAFT** |

1. For accidents or serious incidents outside the territory of any State involving a Myanmar aircraft, Myanmar as the State of Registry will conduct the investigation. The Chief investigator of Accidents will notify the following States of the accident or serious incident in a similar way as described in Chapter 2 of Section 4:

- State of Design
- State of Manufacture
- State of the Operator (if Myanmar is not the State of the Operator)
- ICAO (if the aircraft involved is of a maximum certified take-off mass of over 2,250 kg or is a turbojet-powered aeroplane)

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 1** | **: GENERAL PROCESS OF INVESTIGATION** |

1. Following the notification to the AAIB of an accident or serious incident in Myanmar and the AAIB's notification to the other States concerned, the general process of the investigation will be as follows:

- Appoint an investigator-in-charge and advisors
- Secure the aircraft or the wreckage and accident site
- Set up of an Accident Investigation Command Centre
- Organise the investigation team
- Carry out field (on-site) investigation
- Coordinate with Crisis Management Team
- Move the aircraft wreckage to another location to continue field investigation, if necessary
- Gather factual data
- Issue Preliminary Report (within 30 days)
- Analyse the data gathered (e.g. formulation and proof of hypotheses)
- Formulate/ issue safety recommendations
- Draft Final Report and seek comments from parties concerned
- Complete Final Report
- Release custody of aircraft, wreckage or parts thereof
- Provide Accident/ Incident Data Report to ICAO
- Disseminate investigation reports to the parties concerned
- Make the investigation public

2. The above activities are not necessarily carried out in the order listed above. Some of the activities may also be carried out in parallel. For example, safety recommendations can be made at any stage of the investigation and custody of the aircraft wreckage and the contents of the aircraft can be released as soon as they are no longer needed in the investigation.

3. For the investigation of incidents that do not fall into the serious incident category, the AAIB will follow the same general process of investigation as for the investigation of accidents or serious incidents.

4. For an incident or serious incident in Myanmar, some of the above investigation activities may not be applicable (e.g. securing of wreckage).

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 2** | **: APPOINTMENT OF INVESTIGATOR-IN-CHARGE AND ADVISERS** |

1. The Chief investigator of Accidents will designate an Investigator of Accidents as the investigator-in-charge (IIC). The Chief investigator of Accidents may designate himself as the IIC.

2. Where the Chief investigator is of the view that more than one Investigator of Accidents is needed to carry out an investigation, he may designate one or more Investigators of Accidents to assist the IIC. One of these Investigators of Accidents will be designated as the Deputy IIC.

3. The Chief investigator of Accidents may also appoint suitable persons as advisors to assist the IIC. When appointing the advisers, the Chief investigator of Accidents will specify in the letters of appointment the extent of the advisers' participation.

4. If the IIC needs more investigation manpower in terms of Investigator of Accidents or advisers, he may propose to the Chief investigator to consider the necessary appointment.

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY MYANMAR** |
| **CHAPTER 3** | **: POWERS OF ACCIDENT INVESTIGATORS** |

1. The Investigator-in-charge (IIC), Deputy IIC and the Investigators of Accidents designated to assist the IIC shall have the following access rights and powers where the whole or any part of the investigation is carried out in Myanmar:

(a) To have free and unhampered access to the site of the accident or incident as well as to the aircraft, its contents or its wreckage.

(b) To have immediate and unrestricted access to and use of the contents of the flight recorders, ATS records and any other recordings.

(c) To have access to and be provided with the results of examination of the bodies of victims or of tests made on samples taken from the bodies of the victims.

(d) To have immediate access to and be provided with the results of examinations of the persons involved in the operation of the aircraft or of tests made on samples taken from such persons.

(e) To have free access to any relevant information or records held by the owner, the operator, the operator's maintenance contractors and sub-contractors, the hirer, the designer or the manufacturer of the aircraft and by the authorities for civil aviation or airport operation or ATS.

(f) To, by summons under his hand:

- call before him and examine any person as he thinks fit;
- require such person to answer any question or furnish any information or produce any books, papers, documents and articles which he may consider relevant; and
- make copies of and retain any such books, papers, documents and articles until the completion of the investigation.

(g) To take statements from all such persons as he thinks fit and require any such person to make and sign a declaration of the truth of the statement made by him.

(h) To enter and inspect any place, building or aircraft the entry or inspection whereof appears to him to be necessary for the purposes of the investigation. (The IIC, etc., shall produce their credentials, if required.)

(i) To remove, test, take measures for the preservation of or otherwise deal with any aircraft other than an aircraft involved in the accident or incident where it appears to him to be necessary for the purposes of the investigation. (The IIC, etc., shall produce their credentials, if required.)

(j) To take possession of, examine, remove, test or take measures for the preservation of any object or evidence as he considers necessary for the purposes of the investigation.

(k) To require an immediate listing of evidence and removal of debris or components for examination or analysis purposes.

(l) To require the readout of the flight recorders.

(m) To require, in the case of a fatal accident, a complete autopsy examination of fatally injured flight crew, and, when necessary, passengers and cabin crew by a pathologist (if available, by a pathologist experienced in the investigation of aircraft accidents).

(n) To require, where appropriate, the medical and toxicological examination of the crew, passengers and aviation personnel involved in the accident or incident by a medical practitioner (if available, by a medical practitioner experienced in the investigation of aircraft accidents).

(o) To require the crew, passengers and aviation personnel involved in the accident or incident to undergo such other tests (including a breathalyser test) as are considered necessary for the purposes of the investigation.

(p) To seek such advice or assistance as is considered necessary for the purposes of the investigation.

2. Any advisor appointed by the Chief investigator of Accidents to assist the IIC shall have the access rights and powers as specified in paragraph 1 above, but only to the extent specified by the Chief investigator of Accidents.

3. Investigation by the AAIB for the purposes of fulfilling Myanmar's obligation under Annex 13 to the Chicago Convention does not preclude other competent authorities in Myanmar (e.g. Civil Aviation Authority, State Police, State Coroner, judicial authorities) from carrying out their own investigations separately for their own purposes as required and in accordance with the relevant legislation. Thus, the IIC shall bear in mind the need for coordination with the other investigating authorities. Particular attention shall be given to evidence which requires prompt recording and analysis for the investigation to be successful, such as the examination and identification of victims and read-out of flight recorder recordings.

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 4** | **: ORGANISATION OF AN INVESTIGATION TEAM** |

1. Every investigation conducted by Myanmar will have an investigator-in-charge (IIC) designated by the Chief investigator of Accidents.

2. Where there are other Investigators of Accidents assisting the IIC, one of them will be designated by the Chief investigator of Accidents as the Deputy IIC.

3. The investigation will involve personnel from many parties, including but not limited to the following:

- Airlines involved in the accident or serious incident.
- Engineering agent of the airline concerned.
- Security agent of the airline concerned, if necessary.
- Advisers appointed by the Chief investigator of Accidents. They can come from CAA, Police, Military, Health Organisation, Civil Defence Force, Universities, Research Institutions, Air Operators, Maintenance and Repair Overhaul Companies, and other aerospace organisations. The roles of some of these agencies are described in Chapter 5.
- Accredited representatives from the State of Registry, State of the Operator, State of Design and State of Manufacture*.

  *Note*: If neither the State of Registry nor the State of the Operator appoints an accredited representative to participate in the investigation, the operator should be invited to participate. Similarly, if neither the State of Design not the State of Manufacture appoints an accredited representative to participate in the investigation, the organisations responsible for the type design and the final assembly of the aircraft should be invited to participate.
- Accredited representatives from States that have provided information, facilities or experts at our request*.
- Advisors to the accredited representatives*, who can comprise people from various organisations, such as aircraft manufacturer, powerplant and aerospace equipment manufacturers, ATC equipment manufacturers.
- Experts from States that have suffered fatalities or serious injuries to their citizens*.

* See paragraph 9 for the participation entitlement of these personnel.

4. Participation in the investigation is on the basis of the participants' technical qualifications and specialties and their ability to contribute to the success of the technical investigation. The investigation shall exclude members of the news media, attorneys, insurers, NOKs, and persons representing claimants.

5. As can be seen from paragraph 3, the number of participants in an investigation can be very big, especially for a major accident. Such a big group of participants naturally need to be properly organised to ensure a smooth and effective investigation. Typically these participants are divided into the following investigation groups:

- Structure group (progression of structural failure, site survey/mapping, impact marks, recovery of wreckage, removal of wreckage/debris, etc.)
- Systems group (various aircraft systems, including powerplant)
- Maintenance Records group (maintenance logs, abnormal operation reports, life/cycle information of the parts and components)
- Flight Operations group (flight/cabin crews, history of flight, aircraft performance, pre-flight preparation, flight environment, dangerous goods, etc.)
- Recorders group (read-out and transcription of CVR/FDR data)
  (Note: Consideration should be given to the participation of a representative from the State of Manufacture or the State of Design who can advise on airworthiness aspects and of a representative from the State of the Operator who can advise on flight operations aspects.)
- Air Traffic Services group (ATC operations, ATC records/tapes, radar data, navigational aids, communications, weather, etc.)
- Aerodrome group (airport operations and maintenance)
- Witness group (interviewing)
- Airport group (airport physical features, obstacle information, ground facilities, apron operations)
- Human Factors group (human physical and psychological conditions, fatigue, environmental factors, medical and pathological factors, organisational and management factors, etc.)
- Survival factors group (rescue, firefighting, crashworthiness, emergency egress system, cabin safety, etc.)

6. The actual grouping will depend on the nature and complexity of the investigation. Some of the groups may not necessarily be formed (at least not necessarily in the initial phase of the investigation) and some of the groups can be further split into more specific groups.

7. Each group will usually be led by an AAIB investigator designated by the IIC.

8. In addition, there will be an AAIB Secretariat/Support group to set up the Accident Investigation Command Centre and to take care of such matters as notification, facilitation, logistics and public relations.

9. The IIC shall bear in mind the participation entitlement of the accredited representatives and their advisers, and of the experts of the States having suffered fatalities or serious injuries to their citizens.

The accredited representatives are entitled to participate in all aspects of the investigation, under the control of the IIC, in particular to:

- Visit the scene of the accident
- Examine the wreckage
- Obtain witness information and suggest areas of questioning
- Have full access to all relevant evidence as soon as possible
- Receive copies of all pertinent documents
- Participate in readouts of recorded media
- Participate in off-scene investigative activities such as component examinations, technical briefings, tests and simulations
- Participate in investigation progress meetings including deliberations related to analysis, findings, causes, contributing factors and safety recommendations
- Make submissions in respect of the various elements of the investigation

- The advisers assisting the accredited representative shall be permitted, under the accredited representatives' supervision, to participate in the investigation to the extent necessary to enable the accredited representatives to make his participation effective.

- However, participation of accredited representatives and advisers from States other than the State of Registry, the State of the Operator, the State of Design and the State of Manufacture may be limited to those matters which entitled such States to participation.

- The experts appointed by the States which have suffered fatalities or serious injuries to their citizens are entitled to:

- Visit the scene of the accident
- 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
- Receive a copy of the Final Report

Such State will not be precluded from also assisting in the identification of victims and in meetings with survivors from that State.

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 5** | **: ROLES OF THE VARIOUS LOCAL SUPPORTING ORGANISATIONS** |

1. A number of local organisations will be involved in supporting the AAIB investigation of an accident that has occurred in Myanmar.

2. The actions required of these supporting organisations are as follows:

## 2.1 Actions by the airline concerned

The airline concerned shall, upon being informed of the accident, carry out the following:

- To send an engineer to remove the CVR/FDR/QAR as soon as possible.
- To send flight crew members to undergo medical examinations at the Myanmar General Hospital accompanied by an accident investigator and a Police officer.
- To send flight crew members for interview at the AICC by accident investigators immediately after their medical examinations.
- To identify and gather survivors for interview by the accident investigators.

  *Notes*: 1. Location for the interview shall be arranged with the investigator-in-charge (IIC).

  2. Foreigners who have to leave Myanmar soon should be arranged to be interviewed first. If necessary, the details of the survivors could be noted so that they could be contacted for interview later.

- To dispatch a senior representative to liaise with the IIC on the following;
  - Assistance in the removal and weighing, if necessary, of cargo/baggage from the accident aircraft.
  - Provisions of diagrams of the location of the CVR/FDR/QAR on the aircraft (for aircraft crash at sea).
  - Sea salvage of the wreckage (for aircraft crash at sea).
  - Assistance in impounding documents on board the aircraft and maintenance records.
  - Assistance in technical investigation and in other engineering expertise.

## 2.2 Actions by the engineering agent of the airline concerned

The engineering agent of the airline concerned shall, upon being informed of the accident, carry out the following:

- To send an engineer to remove the CVR/FDR/QAR as soon as possible.
- To dispatch a senior representative to liaise with the IIC on the following;
  - Removal of the CVR/FDR/QAR.
  - Assistance in impounding maintenance records.
  - Assistance in technical investigation and in other engineering expertise (e.g. rendering pressure vessels safe, taking POL samples, defuelling aircraft).

## 2.3 Actions by the Police

Assistance of the Police will be required in the following areas:

- To provide cordon for the entire accident site and protect the wreckage and its contents from disturbance, loss or further damage.
- To photograph the dead before they are removed from the scene.
- To provide information on witnesses and their statements.
- To assist in identifying and locating witnesses who have seen or have taken photographs of the accident (through the mass media, if necessary).
- To provide Police escort as required (e.g. for escorting flight crew members to the Myanmar General Hospital for medical examinations, for escorting accident investigators to impound documents, etc., where necessary).
- To provide manpower to comb accident site for missing parts, if necessary (depending on the terrain and vegetation of the accident site, one person for every 2 to 3 metres may be required).

## 2.4 Actions by MAF

MAF's assistance may be sought for the aerial survey/photography of the accident site.

## 2.5 Actions by Airport Group's Airport Emergency Service (AES)

AES shall carry out the following:

- To ensure minimum movement of the dead, wreckage or debris in the course of their rescue and firefighting operations and before photographic records have been made.
- To provide post-crash fire protection (for crash within AES turn-out areas).
- To provide sea transport for investigators to the site of the aircraft ditching if necessary (for aircraft crash at sea)
- To liaise with the IIC on the following:
  - Assistance in identifying survivors, witnesses and AES personnel for interview.
  - Provision of manpower to comb accident site for missing parts, if necessary (depending on the terrain and vegetation of the accident site, one person for every 2 to 3 metres may be required).

## 2.6 Actions by CAA Air Traffic Services Division

CAA Air Traffic Services Division shall carry out the following:

- To provide information on condition of radio, navigation and visual aids and ATC facilities at the time of the accident.
- To assist IIC in impounding ATC tapes, flight plans, strips, meteorological forecast provided to flight crew, etc.
- To liaise with the IIC on toxicological and drug testing at the Myanmar General Hospital and interview of air traffic controllers involved, where necessary.

## 2.7 Actions by Airport Airside Operations

Airside Operations shall provide transport for use by the accident investigators.

## 2.8 Actions by National Fire Brigade

**National Fire Brigade**'s assistance may be sought in the following areas:

- To ensure minimum movement of the dead, wreckage or debris in the course of their rescue and firefighting operations and before photographic records have been made.
- To provide post-crash fire protection (for crash outside AES turn-out areas).
- To identify survivors, witnesses and **National Fire Brigade** personnel for interview.

## 2.9 **Actions by Ministry of Health (MOH)**

The MOH shall carry out the following:

- To perform medical, toxicological and drug tests on all flight crew members presented to the Myanmar General Hospital for medical examinations and to provide results to the IIC. (And to arrange for the flight crew members to be sent to the IIC for interview immediately after the medical examinations.)
- To perform toxicological and drug tests on air traffic controllers presented to the Myanmar General Hospital for medical examinations and to provide results to the IIC.
- To provide results of autopsies of deceased flight crew members to the IIC.
- To provide, upon request, results of autopsies of dead persons on board the accident aircraft to the IIC.

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 6** | **: ACTIONS AT THE ACCIDENT INVESTIGATION COMMAND CENTRE** |

## 1. Accident in Myanmar

1.1 In the event of an accident in Myanmar, and as directed by the Chief investigator of Accidents or the investigator-in-charge, an Accident Investigation Command Centre (AICC) will be set up at the AAIB office.

1.2 The AICC will provide support to the investigator-in-charge (IIC).

1.3 The AICC has the following telephone and facsimile numbers:

Tel: (95) 1 7533162
Fax: (95) 1 7533016

1.4 The following rooms will be needed:

- The AAIB Meeting Room will be used for meetings of the investigation teams. It will also double up as the AICC Operations Room.
- Two syndicate rooms can be used by the accredited representatives and their advisers.

## 2. Tasks of the AICC

2.1 The AICC shall keep an event log and will carry out the following:

- To recall the other AAIB investigators.
- To arrange for the security of the AICC, where necessary.
- To compose and send notifications to the relevant States.
- To coordinates with these States on the participation and arrivals of their accredited representatives and advisors.
- To maintain a register of participants (sample registration form in **Appendix 1**).
- To issue AAIB's guidelines on participation in AAIB investigation for non-AAIB participants (see Appendix 2 to Chapter 9) and require these participants to acknowledge receipt.

- To arrange for the participants to sign a Non-Disclosure Agreement (see Appendix 3 to Chapter 9)
- To issue AAIB identification badges to participants, where applicable, and require them to acknowledge receipt, and to collect the badges from them at the end of the field investigation.
- To request for external assistance, as necessary.
- To assist in making travel arrangement for the AAIB investigators.
- To keep record of investigation expenses.

2.2 The AICC will monitor the following:

- Casualty information
- Media reports (printed material as well as television)

2.3 The AICC will act as secretary of the investigation team's progress meetings and handle the following tasks:

- To keeps records of the attendance of the meetings.
- To keep minutes of the meetings.
- To prepare for the IIC any necessary information, updates, etc., to the MOT.
- To liaise with the investigation cell of the Crisis Management Team and prepare any necessary updates for the CMD.
- To draft any necessary press release.

2.4 The AICC will carry out the following in coordination with the relevant investigation sub-groups:

- To help arrange for aerial photography of accident site, if necessary.
- To help arrange for underwater photography of perishable evidence prior to recovery of wreckage.
- To help arrange for video recording of wreckage removal or recovery.
- To help arrange for a site to place the wreckage.
- To record the date/time of the receipt of all documents/items submitted to the investigation team as evidence.

2.5 The AICC will provide other facilities and logistics support, etc., as necessary.

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 6** | **: SAMPLE REGISTRATION FORM FOR NON-AAIB** |
| **APPENDIX 1** | **PARTICIPANTS** |

## REGISTRATION FORM FOR INVESTIGATION TEAM MEMBER

**Accident/Incident occurrence**: _____

Investigation group (if known): _____

<table>
<tr><td colspan="3">Name</td></tr>
<tr><td colspan="2">NRIC/Passport No.</td><td>Date of birth</td></tr>
<tr><td colspan="3">Home address</td></tr>
<tr><td rowspan="4">Organisation</td><td colspan="2"></td></tr>
<tr><td colspan="2">Job title</td></tr>
<tr><td colspan="2">Office address</td></tr>
<tr><td colspan="2">Tel (Office):<br>Tel (Mobile) :<br>Fax:<br>E-mail:</td></tr>
<tr><td>Hotel in Myanmar</td><td colspan="2"></td></tr>
<tr><td colspan="3">How can you be contacted in Myanmar or while on site</td></tr>
<tr><td colspan="2">Immmunisation against (please √):<br><br>Hepatitis A ___ Influenza ____<br>Hepatitis B ___ Tetanus ____<br>Others (Please specify) _____<br>_____</td><td>Person to contact in case of emergency<br><br>Relation to you<br><br>Contact no.</td></tr>
</table>

Signature: _____

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 7** | **: SITE SECURITY** |

1. As indicated in Chapter 5, the Police will provide cordon for the entire accident site and protect the wreckage and its contents from disturbance, loss or further damage. For this purpose, the Police will set up a central control point to control entry into the accident site.

2. Nevertheless, the investigator-in-charge (IIC) or the investigator assigned by the IIC to coordinate on site security matters should bear in mind the following:

- To monitor the effectiveness of the following security measures and to highlight any deficiency to the Police:

  - Protection of property
  - Minimising disturbance to wreckage
  - Protection and preservation of tracks and impact marks made by the aircraft
  - Preventing unauthorised entry

- To consider the size of the restricted area and liaise with Police accordingly.

- To obtain the cargo manifest as soon as possible in order that the condition of the hazardous material on site can be ascertained.

- To brief the investigation participants on the security measures and the condition of the hazardous material on site.

- To arrange for security for the location where wreckage is stored.

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 8** | **: FIELD INVESTIGATION** |

## 1. Investigation procedures

1.1 The following appendices provide details on the investigation procedure for different types of occurrence:

Appendix 1: Investigation procedure for commercial transport aircraft accident or serious incident

Appendix 2: Investigation procedure for commercial transport aircraft incident

Appendix 3: Investigation procedure for general aviation aircraft accident or serious incident

Appendix 4: Investigation procedure for general aviation aircraft incident

Appendix 5: Investigation procedure for air traffic services related serious incident

Appendix 6: Investigation procedure for air traffic services related incident

1.2 AAIB investigators involved should keep a log of their investigation activities and highlight significant discoveries to the investigator-in-charge (IIC).

1.3 All involved in the investigation shall be mindful of the need to capture as soon as possible evidence of a perishable nature. Damaged documents (e.g. soaked or burnt) may need special handling.

## 2. Documentation

2.1 When impounding recorders and documents, etc., records should be made. A copy of the records should be given to the persons providing the recorders and documents, etc. This is to facilitate the eventual return of these recorders and documents, etc., to the original provider of the same.

2.2 Taking a photograph of the nameplate of a part or component is a quick way of recording details such as part number, serial number, etc.

2.3 All recorders and documents impounded shall be kept in a secured place.

2.4 Where appropriate, the investigators should return the documents after photocopies are made.

2.5 At the end of the field investigation phase, the investigation groups, if formed, are expected to compile their factual data reports or field notes, provide a summary of their findings, sign on the reports/notes and submit them to the IIC. They may have to present a summary of their reports or field notes at an investigation progress meeting before the groups are disbanded.

## 3. De-commissioning of investigation groups

3.1 When an investigation group, if formed, has completed its tasks, the group chairman should for the record recommend to the IIC the de-commissioning of the group. The IIC will then de-commission the group if he accepts the recommendation. The de-commission may be announced during the investigation debrief meeting or through an e-mail to the group's chairman and members.

| | | |
|---|---|---|
| **SECTION 5** | **:** | **INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 8** | **:** | **INVESTIGATION PROCEDURE FOR COMMERCIAL** |
| **APPENDIX 1** | | **TRANSPORT AIRCRAFT ACCIDENT OR SERIOUS INCIDENT** |

*This procedure is applicable to the investigation of a commercial transport aircraft accident or serious incident. For such occurrence, 4 investigators (engineering, operations and recorder) would normally be deployed (but if the accident is a major one, then ALL investigators would be deployed). When necessary, external assistance will be sought.*

1. **Actions on receipt of notification**

- AAIB Duty Officer (DO) to:
  - Inform the Chief investigator of Accidents (CI) and activate other investigators
  - Proceed to the occurrence site or the aircraft as soon as possible with the DO kit bag
  - Gather as much information about the accident as possible
  - Confirm with ATS that ATC recordings and other relevant material are impounded
  - Arrange for ATC personnel involved to undergo medical examinations
  - Arrange to impound all maintenance records
- CI to appoint investigator-in-charge (IIC) and advisers
- CI or IIC may direct that the Accident Investigation Command Centre (AICC) be set up

2. **Actions of the DO on site:**

2.1 The DO shall assume the responsibility of the IIC until the arrival of the IIC. He should carry out the following (with the help of other investigators who have turned up) pending the arrival of the IIC:

- Identify himself to the Police, and assist the Police officer-in-charge in ensuring that the occurrence site or the aircraft is properly secured
- Identify himself to the rescue force commander (who will be from the aerodrome authority if the occurrence site is at the airport, or who will be from the Police if the site is outside the airport) and provide advice to him as necessary (e.g. to advise on preservation of evidence for investigation purposes)
- Arrange for the removal of power from the CVR/FDR/QAR as soon as possible

- Retrieve and impound the CVR/FDR/QAR at first opportunity
- Provide the AICC with the necessary information (see Section 4 Chapter 2) to enable it to issue notification to the relevant States Make a preliminary survey of the site and note the wreckage condition and debris distribution
- Coordinate with the rescue force commander and other on-site personnel to identify hazardous areas, have them marked, and implement any necessary accident site hazards control measures
- Take steps to preserve, through photography or other means, any evidence of a transitory nature (e.g. before it is washed away by rain water) or which might be removed, effaced, lost or destroyed

2.2 The DO will brief the IIC when the latter arrives on site. The IIC will take over the tasks in paragraph 2.1.

## 3. Investigator-in-charge (IIC)

3.3 Actions of the IIC

- Walk through the site and obtain a briefing by the rescue force commander
- Assign an investigator to obtain statements from the flight crew members, to accompany them for their medical examinations (with a Police escort if necessary) and to interview them, if possible
- Assign an investigator to obtain statements from cabin crew members and other witnesses, and to arrange for interviews, if necessary
- Gather the names and contacts of witnesses for future communications
- Assign an AAIB staff to set up a field HQ if necessary
- Remind all investigation personnel of the possible safety hazards on site
- Decide on the investigation groups that need to be formed and assign investigators as group chairmen to set up the investigation groups
- Organise the on-site tasks (taking measurements of marks, tracks, etc.)
- Carry out the necessary briefing (e.g. regarding arrangements on coordination with other parties concerned, manpower, and equipment needed)
- Manage the investigation groups
- Conduct regular briefing and debriefing with the investigators involved
- Update the AICC

3.2 Coordination with Security Agency

- Confirm with the Police regarding the wreckage security arrangement, provision of Police escort, information on witnesses, and accident site photography

3.3 Coordination with Rescue Agency

- Perform, or assign a person to perform, accident site risk management
- Confirm with the rescue force commander on the hazardous areas and their marking

3.4 Coordination with Foreign Investigators

- Liaise with the Accredited Representatives
- Convene opening meeting and conduct the necessary briefing (e.g. on transport, logistics and administrative arrangements) after Accredited Representatives and their advisers have arrived
- Assign the foreign participants to the investigation groups

3.5 Coordination with Owner/Operator of aircraft

- Liaise with senior representative of the owner or operator of the aircraft concerned on the following, directly or through the investigation groups:
  - Remove CVR/FDR/QAR, if not already done
  - Obtain flight crew's particulars
  - Obtain copies of flight crew's licences, log books and general declaration
  - Obtain copies of all documents on board the aircraft (e.g. certificate of registration, certificate of airworthiness, flight manual, operations manual, technical log, deferred defect log, load sheet, weight and balance schedule, fuel log)
  - Obtain passenger and cargo manifests (to note any dangerous goods)
  - Arrange for medical examinations and interviewing of the flight crew
  - Arrange for recovery of aircraft wreckage from the sea (if judged necessary), in the case of a sea crash
  - Arrange to move the wreckage to another location for storage or continuing examination, if necessary

## 4. Accident Investigation Command Centre (AICC)

4.1 Actions of the AICC

- Compose and send notifications by the quickest means to the relevant States and request for nomination of Accredited representatives

  - State of Registry
  - State of the Operator
  - State of Manufacturer
  - State of Design
  - ICAO

- Coordinate with the Accredited Representatives on their arrival details
- Alert all the AAIB volunteer investigators
- Arrange for the security of the AICC, where necessary
- Liaise with the Rescue Coordination Centre in the case of a sea crash
- Maintain a register of participants (sample registration form in Appendix 1 to Chapter 6)
- Assist in making accommodation and transport arrangements for the foreign participants
- Issue AAIB's guidelines for foreign participants (see Appendix 2 to Chapter 9) and require these participants to acknowledge receipt
- Arrange for all non-AAIB participants to sign a Non-Disclosure Agreement (see Appendix 3 to Chapter 9), as necessary
- Issue credentials to non-AAIB participants
- Coordinate with the IIC and crisis management centre on regular and timely release of information to NOK and media and on facilitating NOK to visit the accident site, if needed
- Request for external assistance, as necessary
- Activate sea salvage company (e.g. SMIT), if necessary

4.2 The AICC will monitor the following:

- Casualty information
- Media reports (to make copy of printed reports and to record TV news)

4.3 The AICC will provide secretariat service to the investigation team and handle the following:

- Take minutes of the investigation meetings and keep records of the attendance

- Prepare for the IIC any necessary information, updates, etc., to MOTC
- Liaise with the investigation cell of the Crisis Management Team and prepare any necessary updates
- Draft any necessary press release

4.4 The AICC will carry out the following in coordination with the relevant investigation groups:

- Arrange for aerial photography of accident site, if necessary
- Arrange for underwater photography prior to recovery of wreckage
- Arrange for video recording of wreckage removal or recovery
- Arrange for wreckage storage and transporting of wreckage to storage site
- Maintain log of receipt of all documents/items received by the investigation team as evidence
- Maintain log of activities and events
- Recall an aeromedically trained investigator to liaise with the coroner for autopsy reports

4.5 The AICC will provide other facilities and logistics support, as necessary

- Replenish consumables such as PPE kits, batteries, sample bottles, etc., and any requirements as advised by the investigators

## 5. Actions of investigation groups

5.1 Structure group

- Document damages
- Document positions and conditions of control surfaces, conditions of wings, fuselage, etc.
- Identify and record/photograph/videotape wreckage pieces and important evidence (e.g. material failures, ground tracks made before the impact, fire/explosion marks)
- Take measurements and note locations of marks, tracks, etc.
- Arrange with the AICC for survey (including aerial survey) of the site and map out the wreckage distribution
- Initiate preparation for wreckage recovery (for a sea crash)

5.2 Recorder group

- Inspect and record/photograph/videotape the conditions of the recorders when they are found
- Rinse and immerse recorders in fresh water if they are recovered from the water
- Transport the recorders to the AAIB recorder laboratory
- Inspect and document in detail the conditions of recorders
- Read out the recorders as soon as possible
- Arrange for the recorders to be read out by the recorder laboratory of an appropriate overseas investigation agency if the reading out is beyond the capability of the usual facilities

5.3 Flight operations group:

- Obtain crew particulars, and impound licences, log books and general declaration, if not already done
- Impound all documents on board the aircraft, including certificate of registration, certificate of airworthiness, flight manual, operations manual, MEL/CDL, Jeppesen charts, technical log, bug card, load sheet, passenger and cargo manifests, notice to commander on dangerous goods, NOTAMs, etc., including scraps of paper.
- Examine and record/photograph/videotape the settings, readings and positions of control levers, instruments, switches, circuit breakers, indicators, flight/ engine controls, etc., in the cockpit
- Interview flight crew members, survivors and witnesses as necessary
- Obtain operator's crew scheduling and crew training records

5.4 Powerplant group

- Examine and record/photograph/videotape the positions and conditions of engines and components, including positions of engine controls, pushrods, cranks, thrust reversers, etc.
- Examine and record/photograph/videotape the positions and conditions of engine controls, circuit breakers, switches, etc., in the cockpit.
- Collect POL (fuel, oil and hydraulic fluids) samples from the engines
- Remove and examine POL filters and magnetic chip detectors
- Review engine maintenance records
- Arrange for shop inspection of engine and engine functional checks, where necessary
- Arrange for teardown of engine, if necessary

5.5 Systems group:

- Arrange for pressure vessels (oxygen bottles, hydraulic accumulators, etc.), oleos, tyres and dangerous goods to be rendered safe after noting their conditions (e.g. pressure readings)
- Examine and record/photograph/videotape the positions and conditions of the various aircraft systems, including positions of switches, circuit breakers, rods, joints, hinges, actuators, wirings, control surfaces, etc.
- Examine and record/photograph/videotape fire marks and perishable evidence
- Collect POL (fuel, oil, hydraulic fluids) samples from the aircraft or wreckage and also from the handling agent's facilities.
- Obtain the relevant aircraft systems manuals for reference

5.6 Maintenance records group:

- Obtain aircraft maintenance records, including maintenance packages, technical log, deferred defect log, MEL, configuration deviation log, aircraft/ engine modification log books, etc.
- Obtain relevant maintenance manuals
- Interview maintenance personnel, if necessary
- Review aircraft maintenance records

5.7 Air traffic services group:

- Arrange for interview of the air traffic controllers involved
- Impound ATC communications tapes, radar recordings, etc.
- Arrange to listen to the ATC recordings and obtain transcription of the recordings
- Impound operations log and maintenance records of navigational aids, etc., if necessary
- Arrange for flight checking of navigational aids, if necessary
- Obtain NOTAMs, meteorological records, etc.
- Obtain copies of the licences and roster of the air traffic controllers involved

5.8 Survival factors group:

- Impound cabin safety related operations log, manuals and documents
- Inspect and record/ photograph/ videotape the conditions of the aircraft for crashworthiness investigation (e.g. fuselage structure, emergency egress doors, seats and seat belts, overhead compartments, emergency lighting system)

- Examine and record/ photograph/ videotape the conditions and use of emergency equipment (e.g. oxygen masks, emergency exits)
- Gather information on the interaction between flight and cabin crews and among cabin crew members
- Obtain the seating plan and injury records of the passengers
- Interview firefighters, crew members, passengers, survivors, witnesses, etc.

6. **Analysis and report writing**

- Issue safety recommendations to the relevant organisations, if there are immediate safety concerns
- For an accident, prepare and issue Preliminary Report within 30 days
- Analyse data gathered (e.g. formulation and proof of hypotheses)
- Formulate/issue safety recommendations
- Coordinate with the Accredited Representatives to draft the Final Report
- Invite comments on the draft Final Report, allowing a 60 days comment period:
    - State that instituted the investigation
    - State of Registry
    - State of the Operator
    - State of Manufacturer
    - State of Design
    - States that participated in the investigation
- Issue an interim statement on the progress of the investigation if the Final Report cannot be released within 12 months
- Complete the Final Report
- Disseminate Final Report to the States and organisations involved:
    - State that instituted the investigation
    - State of Registry
    - State of the Operator
    - State of Manufacturer
    - State of Design
    - States that participated in the investigation
    - States that provided relevant information, significant facilities or experts
    - States that suffered fatalities or serious injuries to its citizen
    - ICAO, if the maximum certificated take-off mass of the aircraft is above 5,700 kg

- Make public the Final Report
- For an accident, send Accident Data Report to ICAO if the maximum certificated take-off mass of the aircraft is above 2,250 kg
- For a serious incident, send Incident Data Report to ICAO if the maximum certificated take-off mass of the aircraft is above 5,700 kg

| | | |
|---|---|---|
| **SECTION 5** | **:** | **INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 8** | **:** | **INVESTIGATION PROCEDURE FOR COMMERCIAL** |
| **APPENDIX 2** | | **TRANSPORT AIRCRAFT INCIDENT** |

*This procedure is applicable to the investigation of a commercial transport aircraft incident (non air traffic services related), other than a serious incident, when the Chief investigator of Accidents (CI) has become aware of it and has caused an investigation to be carried by an investigator-in-charge (IIC). For such occurrence, 2 investigators (engineering, operations) would normally be deployed.*

1. **Actions to be taken by IIC**

- Proceed to the aircraft as soon as possible with the DO kit bag
- Gather as much information about the incident as possible
- Decide, basing on information gathered, if ATC recordings and other relevant material need impounding and if ATC personnel involved need to undergo medical examinations
- Arrange to impound all maintenance records
- Arrange for removal of power from the CVR/ FDR/ QAR, if installed, as soon as possible
- Retrieve and impound the CVR/FDR/QAR at first opportunity
- Take steps to preserve, through photography or other means, any evidence of a transitory nature (e.g. before it is washed away by rain water) or which might be removed, effaced, lost or destroyed
- Interview or obtain statements from the flight crew members
- Obtain flight crew's particulars and copies of their licences and log books
- Interview or obtain statements from cabin crew members, if necessary
- Interview or obtain statements from witnesses
- Obtain the names and contacts of other witnesses for future communications
- Obtain copies of all documents on board the aircraft (e.g. certificate of registration, certificate of airworthiness, flight manual, operations manual, technical log, deferred defect log, load sheet, weight and balance schedule, fuel log)
- Obtain passenger and cargo manifests (to note any dangerous goods)
- Notify, if necessary, the States concerned of the incident and request for nomination of Accredited Representatives

- State of Registry
- State of the Operator
- State of Manufacturer
- State of Design

- Liaise with respective Accredited Representatives accordingly

2. **The investigation would focus on areas that are relevant, which depends on the nature of the incident**.

2.1 Aircraft structure, systems and powerplant

- Examine and record/photograph/videotape the conditions of the aircraft structure and systems involved
- Examine and record/photograph/videotape the settings, readings and positions of control levers, instruments, circuit breakers, switches, indicators, flight/ engine controls, etc., in the cockpit
- Identify and record/photograph/videotape important evidence (e.g. material failures, ground tracks, switch positions, etc.)
- Take measurement and note locations of marks, tracks, etc.
- Collect POL (fuel, oil, hydraulic fluids) samples from the incident aircraft
- Interview maintenance personnel, if necessary
- Obtain the relevant aircraft systems and engine manuals for reference
- Obtain and review aircraft and engine maintenance records
- Arrange for testing of aircraft and engine component, if necessary
- Arrange for metallurgical examination, if necessary

2.2 Flight operations

- Interview flight crew members and witnesses as necessary
- Obtain crew scheduling and training records
- Read out CVR/ FDR

3. **Analysis and report writing**

- Issue safety recommendations to the relevant organisations, if there are immediate safety concerns

- Analyse data gathered (e.g. formulation and proof of hypotheses)
- Formulate/issue safety recommendations
- Coordinate with respective Accredited Representatives to draft Final Report
- Invite comments on the draft Final Report, allowing a 60 days comment period:

    - State of Registry
    - State of the Operator
    - State of Manufacturer
    - State of Design
    - States that participated in the investigation

- Issue an interim statement on the progress of the investigation if the Final Report cannot be released within 12 months
- Complete the Final Report
- Disseminate Final Report to the States and organisations involved:

    - State of Registry
    - State of the Operator
    - State of Manufacturer
    - State of Design
    - States that participated in the investigation
    - State that provide relevant information, significant facilities or experts
    - ICAO if the maximum certificated take-off mass of the aircraft is above 5,700 kg

- Make public the Final Report
- Send Incident Data Report to ICAO if the maximum certificated take-off mass of the aircraft is above 5,700 kg

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 8** | **: INVESTIGATION PROCEDURE FOR GENERAL** |
| **APPENDIX 3** | **AVIATION AIRCRAFT ACCIDENT OR SERIOUS INCIDENT** |

*This procedure is applicable to the investigation of a general aviation aircraft accident or serious incident. For such occurrence, 3 investigators (engineering, operations and recorder) would normally be deployed.*

1. **Actions on receipt of notification**

- AAIB Duty Officer (DO) to:
  - Inform the Chief investigator of Accidents (CI) and activate other investigators as necessary
  - Proceed to the occurrence site or the aircraft as soon as possible with the DO kit bag
  - Gather as much information about the occurrence as possible
  - Confirm with ATS that ATC recordings and other relevant material are impounded
  - Arrange for ATC personnel involved to undergo medical examinations
  - Arrange to impound all maintenance records
- CI to appoint investigator-in-charge (IIC) and advisers

2. **Actions of the DO on site:**

2.1 The DO shall assume the responsibility of the IIC until the arrival of the IIC. He should carry out the following (with the help of other investigators who have turned up) pending the arrival of the IIC:

- Identify himself to the Police, and assist the Police officer-in-charge in ensuring that the occurrence site or the aircraft is properly secured
- Identify himself to the rescue force commander (who will be from the aerodrome authority if the occurrence site is at the airport, or who will be from the police if the site is outside the airport) and provide advice to him as necessary (e.g. to advise on preservation of evidence for investigation purposes)
- Arrange for removal of power from the CVR/FDR, if installed, as soon as possible
- Retrieve and impound the recorders at first opportunity

- Make a preliminary survey of the site and note the wreckage condition and debris distribution
- Coordinate with the rescue force commander and other on-site personnel to identify hazardous areas, have them marked, and implement any necessary accident site hazards control measures
- Take steps to preserve, through photography or other means, any evidence of a transitory nature (e.g. before it is washed away by rain water) or which might be removed, effaced, lost or destroyed

2.2 The DO will brief the IIC when the latter arrives on site. The IIC will take over the tasks in paragraph 2.1.

3. **Investigator-in-charge (IIC)**

3.1 Actions of IIC

- Walk through the site and obtain a briefing by the rescue force commander
- Assign an investigator to obtain statements from the pilots, to accompany them for their medical examinations (with a Police escort if necessary) and to interview them, if possible
- Assign an investigator to obtain statements from eyewitnesses and arrange for interview
- Gather the names and contacts of witnesses for future communications
- Remind all investigation personnel of the possible safety hazards on site
- Decide on the investigation groups that need to be formed and assign investigators as group chairmen to set up the investigation groups
- Organise the on-site tasks (taking measurements of marks, tracks, etc.)
- Carry out the necessary briefing (e.g. regarding arrangements on coordination with other parties concerned, manpower, and equipment needed)
- Manage the investigation groups
- Conduct regular briefing and debriefing with the investigators involved
- Maintain log of receipt of all documents/items received by the investigation team as evidence
- Maintain log of activities and events
- Request for external assistance, as necessary
- Liaise with the Rescue Coordination Centre in the case of a sea crash
- Activate sea salvage company (e.g. SMIT), if necessary
- Arrange for video recording of wreckage removal or recovery

3.2 Coordination with Security Agency

- Confirm with the Police regarding the wreckage security arrangement, provision of Police escort, information on witnesses, and accident site photography

3.3 Coordination with Rescue Agency

- Perform, or assign a person to perform, accident site risk management
- Confirm with the rescue force commander on the hazardous areas and their marking

3.4 Coordination with Foreign Investigators

- Liaise with the Accredited Representatives
- Convene opening meeting and conduct the necessary briefing (e.g. on transport, logistics and administrative arrangements) after Accredited Representatives and their advisers have arrived
- Assign the foreign participants to the investigation groups

3.5 Coordination with Owner of aircraft

- Liaise with owner of the aircraft concerned on the following:
  - Obtain pilots' particulars
  - Obtain copies of pilots' licences, log books
  - Obtain copies of all documents on board the aircraft (e.g. certificate of registration, certificate of airworthiness, flight manual, operations manual, load sheet, weight and balance schedule, fuel log)
  - Obtain passenger details, if applicable
  - Arrange for recovery of aircraft wreckage from the sea (if judged necessary), in the case of a sea crash
  - Arrange to move the wreckage to another location for storage or continuing examination, if necessary

3.6 Coordination with Foreign Investigators

- Notify the States concerned of the occurrence and request for nomination of Accredited Representatives

- State of Registry
- State of the Operator
- State of Manufacturer
- State of Design
- ICAO (if the maximum certificated take-off mass of the aircraft is above 2,250 kg or if the aircraft is a turbojet-powered aeroplane)

- Liaise with the Accredited Representatives accordingly
- Issue AAIB's guidelines for foreign participants (see Appendix 2 to Chapter 9) and require these participants to acknowledge receipt
- Arrange for all non-AAIB participants to sign a Non-Disclosure Agreement (see Appendix 3 to Chapter 9), as necessary
- Issue credentials to non-AAIB participants

4. **Conduct of investigation:**

4.1 Aircraft structure, systems and powerplant

- Document damages
- Document conditions of aircraft structure and systems involved
- Examine and record/ photograph/ videotape the settings, readings and positions of control levers, instruments, switches, circuit breakers, indicators, flight/ engine controls, etc., in the cockpit
- Identify and record/photograph/videotape important evidence (e.g. material failures, ground tracks, switch positions, etc.)
- Take measurements and note locations of marks, tracks, etc.
- Collect POL (fuel, oil, hydraulic fluids) samples, if necessary
- Obtain the relevant aircraft and engine manuals for reference
- Obtain and review aircraft and engine maintenance records
- Arrange testing of aircraft or engine component, if necessary
- Arrange for metallurgical examination, if necessary
- Interview maintenance personnel, if necessary
- Initiate wreckage recovery (for a sea crash)
- Record conditions of recorders when found and rinse and immerse recorders, if installed, in fresh water when recovered from the water
- Read out CVR/ FDR

4.2 Air traffic services:

- Arrange for interview of the air traffic controllers involved
- Impound ATC communications tapes, radar recordings, etc.
- Arrange to listen to the ATC recordings and obtain transcription of the recordings
- Impound operations log and maintenance records of navigational aids, etc., if necessary
- Arrange for flight checking of navigational aids, if necessary
- Obtain NOTAMs, meteorological records, etc.
- Obtain copies of the licences and roster of the air traffic controllers involved

4.3 Survival factors group:

- Inspect and record/ photograph/ videotape the conditions of the aircraft for crashworthiness investigation (e.g. fuselage structure, emergency egress doors, seats and seat belts)
- Examine and record/ photograph/ videotape the conditions and use of emergency equipment (e.g. oxygen masks, emergency exits)
- Obtain the seating plan and injury records of the passengers
- Interview firefighters, crew members, passengers, survivors, witnesses, etc.

## 5. Analysis and report writing

- Issue safety recommendations to the relevant organisations, if there are immediate safety concerns
- For an accident, prepare and issue Preliminary Report within 30 days
- Analyse data gathered (e.g. formulation and proof of hypotheses)
- Formulate/issue safety recommendations
- Coordinate with the Accredited Representatives to draft the Final Report
- Invite comments on the draft Final Report, allowing a 60 days comment period:
  - State that instituted the investigation
  - State of Registry
  - State of the Operator
  - State of Manufacturer
  - State of Design
- States that participated in the investigation
- Issue an interim statement on the progress of the investigation if the Final Report cannot be released within 12 months

- Complete the Final Report
- Disseminate Final Report to the States and organisations involved:
  - State that instituted the investigation
  - State of Registry
  - State of the Operator
  - State of Manufacturer
  - State of Design
  - States that participated in the investigation
  - States that provided relevant information, significant facilities or experts
  - States that suffered fatalities or serious injuries to its citizen
  - ICAO, if the maximum certificated take-off mass of the aircraft is above 5,700 kg

- Make public the Final Report
- For an accident, send Accident Data Report to ICAO if the maximum certificated takeoff mass of the aircraft is above 2,250 kg
- For a serious incident, send Incident Data Report to ICAO if the maximum certificated takeoff mass of the aircraft is above 5,700 k

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 8** | **: INVESTIGATION PROCEDURE FOR GENERAL** |
| **APPENDIX 4** | **AVIATION AIRCRAFT INCIDENT** |

*This procedure is applicable to the investigation of a general aviation aircraft incident (non air traffic services related), other than a serious incident, when the Chief investigator of Accidents (CI) has become aware of it and has caused an investigation to be carried by an investigator-in-charge (IIC). For such occurrence, 2 investigators (engineering, operations) would normally be deployed.*

1. **Actions to be taken by IIC**

- Proceed to the aircraft as soon as possible with the DO kit bag
- Gather as much information about the incident as possible
- Decide, basing on information gathered, if ATC recordings and other relevant material need impounding
- Arrange to impound all maintenance records
- Arrange for removal of power from the CVR/ FDR, if installed, as soon as possible
- Retrieve and impound the CVR/ FDR at first opportunity
- Take steps to preserve, through photography or other means, any evidence of a transitory nature (e.g. before it is washed away by rain water) or which might be removed, effaced, lost or destroyed
- Interview or obtain statements from pilots
- Obtain pilots' particulars and copies of pilots' licences and log books
- Interview or obtain statements from witnesses
- Notify, if necessary, the States concerned of the incident and request for nomination of Accredited Representatives
  - State of Registry
  - State of the Operator
  - State of Manufacturer
  - State of Design
- Liaise with respective Accredited Representatives accordingly

2. **The investigation would focus on areas that are relevant, which depends on the nature of the incident**.

2.1 Aircraft structure, systems and powerplant

- Examine and record/photograph/videotape the conditions of the aircraft structure and systems involved
- Examine and record/photograph/videotape the settings, readings and positions of control levers, instruments, circuit breakers, switches, indicators, flight/ engine controls, etc., in the cockpit
- Identify and record/photograph/videotape important evidence (e.g. material failures, ground tracks, switch positions, etc.)
- Take measurement and note locations of marks, tracks, etc.
- Collect POL (fuel, oil, hydraulic fluids)
- Interview maintenance personnel, if necessary
- Obtain the relevant aircraft systems and engine manuals for reference
- Obtain and review aircraft and engine maintenance records
- Arrange for testing of aircraft systems, engines and components, if necessary
- Arrange for metallurgical examination, if necessary

2.2 Flight operations

- Interview pilots and witnesses as necessary
- Obtain crew schedule and training records of the pilots

3. **Analysis and report writing**

- Issue safety recommendations to the relevant organisations, if there are immediate safety concerns
- Analyse data gathered (e.g. formulation and proof of hypotheses)
- Formulate/issue safety recommendations
- Draft the Final Report
- Invite comments on the draft Final Report, allowing a 60 days comment period:
  - State of Registry
  - State of the Operator
  - State of Manufacturer
  - State of Design
  - States that participated in the investigation

- Issue an interim statement on the progress of the investigation if the Final Report cannot be released within 12 months
- Complete the Final Report
- Disseminate Final Report to the States and organisations involved:
  - State of Registry
  - State of the Operator
  - State of Manufacturer
  - State of Design
  - States that participated in the investigation
  - States that provided relevant information, significant facilities or experts
  - ICAO, if the maximum certificated take-off mass of the aircraft is above 5,700 kg

- Make public the Final Report
- Send Incident Data report to ICAO if the maximum certificated take-off mass of the aircraft is above 5,700 kg

| | | |
|---|---|---|
| **SECTION 5** | **:** | **INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 8** | **:** | **INVESTIGATION PROCEDURE FOR AIR TRAFFIC** |
| **APPENDIX 5** | | **SERVICES RELATED SERIOUS INCIDENT** |

*This procedure is applicable to the investigation of a purely air traffic services (ATS) related serious incident (e.g. loss of separation). For such occurrence, 2 investigators (operations and recorder) would normally be deployed. When necessary, external assistance will be sought.*

1. **Actions on receipt of notification**

- AAIB Duty Officer (DO) to:
  - Inform the Chief investigator of Accidents (CI) and activate other investigators as necessary
  - Proceed to the aircraft, if necessary
  - Gather as much information about the occurrence as possible
  - Confirm with ATS that ATC recordings and other relevant material are impounded
  - Arrange for ATC personnel involved to undergo medical examinations
- CI to appoint investigator-in-charge (IIC) and advisers

2. **Actions to be taken by IIC**

2.1 Aircraft not landing in State

- Alert operator concerned to secure the CVR/FDR when the aircraft has landed at destination
- Inform the States of Registry and the State of the Operator concerned of the occurrence and seek their assistance in securing the CVR/FDR recordings from the operator
- Arrange with operator and/or the States concerned for interview of flight crew members and obtain copies of flight crew licences, crew schedule and training records

2.2 Aircraft landing in State

- Liaise with the local representative of the operator to secure the CVR/ FDR
- Liaise with the local representative of the operator to round up the fight crew members for medical examination and interview
- Obtain copies of flight crew licences and log books
- Obtain crew scheduling and training records
- Obtain copies of the relevant documents in the cockpit (e.g. technical log, deferred defect log, MEL, etc)

2.3 Coordination with Air Traffic Services

- Arrange for interview of the air traffic controllers involved
- Impound ATC communications tapes, radar recordings, etc.
- Arrange to listen to the ATC recordings and obtain transcription of the recordings
- Impound operations log and maintenance records of navigational aids, etc., if necessary
- Arrange for flight checking of navigational aids, if necessary
- Obtain NOTAMs, meteorological records, etc.
- Obtain copies of the licences and roster of the air traffic controllers involved

2.4 Coordination with Foreign Investigators

- Notify the States concerned of the occurrence and request for nomination of Accredited Representatives
  - State of Registry
  - State of the Operator
  - State of Manufacturer
  - State of Design
  - ICAO (if the maximum certificated take-off mass of the aircraft is above 2,250 kg or if the aircraft is a turbojet-powered aeroplane)
- Liaise with the Accredited Representatives accordingly

3. **Analysis and report writing**

- Issue safety recommendations to the relevant organisations, if there are immediate safety concerns
- Analyse data gathered (e.g. formulation and proof of hypotheses)
- Formulate/issue safety recommendations
- Coordinate with the Accredited Representatives to draft the Final Report
- Invite comments on the draft Final Report, allowing a 60 days comment period:
  - State that instituted the investigation
  - State of Registry
  - State of the Operator
  - State of Manufacturer
  - State of Design
  - State that participated in the investigation

- If the Final Report cannot be released within 12 months, IIC to issue an interim statement on the progress of the investigation
- Complete the Final Report
- Disseminate the Final Report to the States and organisations involved:
  - State that instituted the investigation
  - State of Registry
  - State of the Operator
  - State of Manufacturer
  - State of Design
  - States that participated in the investigation
  - States that provided relevant information, significant facilities or experts
  - ICAO (if the maximum certificated take-off mass of the aircraft is above 5,700 kg)

- Make public the Final Report
- Send the Incident Data Report to ICAO if the maximum certificated take-off mass of the aircraft is above 5,700 kg

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 8** | **: INVESTIGATION PROCEDURE FOR AIR TRAFFIC** |
| **APPENDIX 6** | **SERVICES RELATED INCIDENT** |

*This procedure is applicable to the investigation of a purely air traffic services (ATS) related incident (e.g. loss of separation, not involving any aircraft hardware or equipment), other than a serious incident, when the Chief investigator of Accidents (CI) has become aware of it and has caused an investigation to be carried by an investigator-in-charge (IIC). For such occurrence, 2 investigators (operations and recorder) would normally be deployed. When necessary, external assistance will be sought.*

## 1. Actions to be taken by IIC

1.1 Aircraft not landing in State

- Alert operator concerned to secure the CVR/ FDR when the aircraft has landed at destination
- Inform the States of Registry and the State of the Operator concerned of the occurrence and seek their assistance in securing the CVR/ FDR recordings from the operator
- Arrange with operator and/or the States concerned for interview of flight crew members and obtain copies of flight crew licences, crew schedule and training records

1.2 Aircraft landing in Myanmar

- Liaise with the local representative of the operator to secure the CVR/ FDR
- Liaise with the local representative of the operator to round up the fight crew members for medical examination and interview
- Obtain copies of flight crew licences and log books
- Obtain crew scheduling and training records
- Obtain copies of the relevant documents in the cockpit (e.g. technical log, deferred defect log, MEL, etc)

1.3 Coordination with Air Traffic Services

- Arrange for interview and medical examination of the air traffic controllers involved
- Impound ATC communications tapes, radar recordings, etc.

- Arrange to listen to the ATC recordings and obtain transcription of the recordings
- Impound operations log and maintenance records of navigational aids, etc., if necessary
- Arrange for flight checking of navigational aids, if necessary
- Obtain NOTAMs, meteorological records, etc.
- Obtain copies of the licences and roster of the air traffic controllers involved

1.4 Coordination with Foreign Investigators

- Notify, if necessary, the States concerned of the occurrence and request for nomination of Accredited Representatives
  - State of Registry
  - State of the Operator
- Liaise with the Accredited Representatives accordingly

2. **Analysis and report writing**

- Issue safety recommendations to the relevant organisations, if there are immediate safety concerns
- Analyse data gathered (e.g. formulation and proof of hypotheses)
- Formulate/issue safety recommendations
- Draft the Final Report
- Invite comments on the draft Final Report, allowing a 60 days comment period:
  - State of Registry
  - State of the Operator
  - State that participated in the investigation
- If the Final Report cannot be released within 12 months, IIC to issue an interim statement on the progress of the investigation
- Complete the Final Report
- Disseminate Final Report to the States and organisations involved:
  - State of Registry
  - State of the Operator
  - States that participated in the investigation
  - State that provided relevant information, significant facilities or experts
  - ICAO (if the maximum certificated take-off mass of the aircraft is above 5,700 kg)
- Make public the Final Report
- Send Incident Data Report to ICAO if the maximum certificated take-off mass of the aircraft is above 5,700 kg

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 9** | **: INVESTIGATION MEETINGS** |

## 1. Need for coordination meetings

1.1 In a major investigation, especially one in which foreign accredited representatives and their technical advisors are participating, the investigation team needs to be organised properly to ensure smooth and effective execution of the investigation tasks. Regular coordination meetings of the investigation team will be necessary.

1.2 **Members of the media, attorneys, insurers, NOK and persons representing claimants are to be excluded from the coordination meetings.**

1.3 A member of the Secretariat/Support group will usually serve as Secretary of the coordination meetings.

## 2. Inaugural meeting

2.1 The investigator-in-charge (IIC) shall, at the earliest opportunity when most of the accredited representatives and advisors have arrived, convene an inaugural meeting of the investigation team for the following purposes:

- To introduce the IIC himself and the Deputy IIC, if designated, and other AAIB members.
- To get the investigation team members to introduce themselves (including the accredited representatives and their advisers, and the coordinators of the participating external organisations and agencies).
- To introduce the investigation group chairmen (who will usually be AAIB investigators) and organise the investigation participants into the investigation groups.
- To convey the administrative and logistics arrangements.
- To set the ground rules for the AAIB investigation.
- To remind all participants that the investigation legislation in State is the Air Navigation (Investigation of Accidents and Incidents) Order.
- To highlight the entitlement of non-AAIB participants.
- To highlight the obligations of non-AAIB participants, especially as regards information or documents obtained during the investigation.

- To brief on all known and potential hazards and safety procedures.
- To provide a status summary of the investigation efforts.
- To announce the date/time for the next progress meeting.

2.2 A sample IIC opening statement for the inaugural meeting is at **Appendix**

2.3 Guidelines on participation in AAIB investigation for non-AAIB participants are at

**Appendix 2**. These should be distributed to the non-AAIB participants.

2.4 A sample format for the non-AAIB participants to acknowledge their entitlement and obligations is at **Appendix 3**.

2.5 Following the inaugural meeting of the investigation team, the group chairmen will carry on their planning discussion with their members.

## 3. Progress meetings during field investigation phase

3.1 The IIC will convene a progress meeting (typically once a day in the evening) for the following purposes:

- Each investigation group to provide a summary update of their activities and key findings, if any.
- Work planning for the following day.
- Preparation for press conference for the day, if necessary.

3.2 The accredited representatives and the representative/coordinator of each of the organisations participating in the investigation are expected to be present at the progress meetings.

3.3 The various investigation groups may be requested to present a summary of their factual data reports or field notes at a progress meeting before the groups are disbanded.

## 4. Coordination meetings after field investigation phase

4.1 These may be convened as decided by the IIC.

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 9** | **: SAMPLE IIC OPENING STATEMENT AT INAUGURAL** |
| **APPENDIX 1** | **INVESTIGATION MEETING** |

**IIC's OPENING STATEMENT**

Ladies and Gentlemen,
Good morning/ afternoon/ evening.
*Welcoming*

1. First of all, I would like to welcome you to the investigation team. We are here to investigate the accident involving [airline, flight #, aircraft type] that crashed at [location], at [time, if available] on [date]. My name is _____ and I am the investigator-in-charge. My deputy is _____.

2. I would also like to introduce my other AAIB investigators. They are:

Mr …
Mr …

*Guidelines for participants*

3. I have distributed our guidelines on participation in AAIB investigation (see *Appendix 2 to Chapter 9*) that addresses several pertinent AAIB procedures regarding the conduct of aircraft accident investigations. Please read the guidelines and make sure that you understand all of the information given. We appreciate your cooperation in adhering to the guidelines. Please bear in mind that these guidelines are not intended to be all-encompassing. If you have any questions concerning procedures during the investigation or believe that you will not be able to follow a procedure, please see me.

4. If you have not completed a Registration Form and an Acknowledgement Form on Entitlement and Obligations of your participation, please see the [Secretary of the meeting].

5. You may wish to note that the legislation that governs investigation in Myanmar is the Myanmar Aircraft Act and Myanmar Aircraft Accident and Incident Investigation Rules, which is in line with the Annex 13 Standards and Recommended Practices.

6. The AAIB allows the participation in its accident investigations of those organisations or agencies whose employees, functions, activities, or products were involved in the accident and which can provide suitable qualified technical personnel to actively assist in the field investigation. Therefore, you may be asked to describe your qualifications and the qualifications of the individuals you nominate to participate in this investigation. The AAIB may require a person to leave the investigation team if it is determined that he is not in a position to contribute knowledge or skills that could be relevant to the investigation.

7. Each participating organisation will have to appoint a person to supervise the members of his organisation and coordinate with me and his accredited representative. This coordinator should possess sufficient authority within his organisation to be able to make decisions on behalf of his organisation during this field phase of the investigation. He will be the AAIB's direct and official point-of-contact for the organisation and, therefore, should maintain contact with me at all times while we are here. Please fill in the investigation team registration form, if you have not done so, so that we will have your contact numbers.

*Identification passes*

8. Each member of the investigation team will be given an AAIB identification badge allowing entry to the AAIB Accident Investigation Command Centre. The badge may have to be exchanged at the Police Command Post on site for a Police security pass before you can access the accident site. Please wear the AAIB badge and/or the Police pass at all times when you are on site. Please also remember to return to us your badge and other relevant items issued to you before you leave the field investigation.

*Safety on site*

9. As you know, an aircraft accident site can be a very dangerous environment. So please be very careful when you are working on or near the accident site and wear appropriate protective clothing and gloves, boots, goggles, and the like. No smoking on site, of course. You may also not be admitted onto the accident site if you have not been suitably immunised. Please also be prepared for possible psychological effects that a tragedy such as this accident can have on you.

*Investigation groups*

10. Ladies and Gentlemen, before I explain the grouping of the investigation participants, I would like all of us to introduce ourselves, giving our names, organisations and job titles or speciality areas.

11. [After the introduction] Thank you, Ladies and Gentlemen. Now, I would like to introduce you to the various investigation groups.

12. At this stage, we will have the following investigation groups, namely: [Power Plant Group, Systems Group, Structure Group, Maintenance and Record Group, Weather Group, Recorder Group, Operations Group, Human Factors Group, ATC Group, Cabin Safety Group, etc.]

13. The group chairmen are investigators from the AAIB. I am going to call out their names now. Please stand up when your names are called:

| | |
|---|---|
| Power Plant Group | Mr/Dr … |
| Systems Group | Mr/Dr … |
| Structure Group | Mr/Dr … |
| Maintenance and Record Group | Mr/Dr … |
| Weather Group | Mr/Dr … |
| Recorder Group | Mr/Dr … |
| Operations Group | Mr/Dr … |
| Human Factors Group | Mr/Dr … |
| ATC Group | Mr/Dr … |
| Cabin Safety Group | Mr/Dr … |
| | MMr/Dr … |

14. Participants from the various organisations will be assigned to the appropriate investigation groups. Please decide which area you are able to best contribute and note the group you would like to participate in. Please report to the chairman of the group you would like to be in after this meeting.

15. If the organisations' coordinators wish to bring in additional members from their organisations to assist the investigation team, please let me know beforehand.

*Progress meetings*

16. We will have daily progress meetings to share the facts that we have gathered during the course of the day, and to plan for subsequent investigation activities. The timing of the meetings will be notified to you.

17. I would like the accredited representatives and the various organisations' coordinators to be present at these meetings.

*Confidentiality of information*

18. The AAIB will disseminate to the public all information regarding the accident at the appropriate times.

19. Please refrain from discussing the accident in public, or giving information about it to the media. I would like to remind you of your obligations in this regard as highlighted in your Acknowledgement Form on Entitlement and Obligations.

*Closing*

20. Are there any questions?

21. Ladies and Gentlemen, I thank you for your attention and cooperation and I hope we will have a smooth investigation.

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 9**<br>**APPENDIX 2** | **: GUIDELINES ON PARTICIAPTION IN AAIB FIELD INVESTIGATION** |

## GUIDELINES ON PARTICIPATION IN AAIB FIELD INVESTIGATION
### For Non-AAIB Participants

1. To verify your eligibility to participate in the AAIB investigation with your accredited representative (if you are from the State of Registry, the State of the Operator, the State of Design or the State of Manufacture) or with the investigator-in-charge (for State participants or if you are not from any of the above-mentioned States).

2. To complete an AAIB Registration Form and indicate a way for you to be contacted.

3. To update the AICC if there are changes to the particulars provided during the initial registration.

4. To wear your AAIB identification badge, if given.

5. To sign the Acknowledgement Form on Entitlement and Obligations of your participation.

6. To bear in mind that the legislation that governs investigation in Myanmar is Myanmar Aircraft Act and Myanmar Aircraft Accident and Incident Investigation Rules which is in line with Annex 13 Standards and Recommended Practices.

7. To abide by the procedures and instructions of the AAIB or the IIC.

8. To be suitably immunised before you may be admitted onto the accident site.

9. To be responsible for your own safety, and wear appropriate protective clothing.

10. To maintain contact with the leader of your organisation and/or your accredited representative at all times.

11. To provide to the AAIB or the IIC with all relevant information available to you.

12. To inform the IIC (or the AICC), the leader of your organisation and/or and your accredited representative when you are leaving the field investigation.

13. To return to the AICC the AAIB identification badge and other relevant items issued to you before you leave the field investigation.

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 9**<br>**APPENDIX 3** | **: FORMAT FOR ACKNOWLEDGEMENT OF ENTITLEMENT AND OBLIGATIONS** |

**ACKNOWLEDGEMENT FORM ON ENTITLEMENT AND OBLIGATIONS**

(To be completed in duplicate. One copy is for the Investigator-in-charge and one copy is for the investigation participant.)

**Section 1: <u>Authorisation to participate by Investigator-in-charge (IIC)</u>**

This is to confirm that, (Name) _____ of (Organisation) _____, whose signature appears in Section 3 below, is authorised to participate in the following AAIB investigation in his/her capacity as **Accredited Representative / Adviser / Expert / Others** (delete accordingly):

| | |
|---|---|
| Aircraft type: | Aircraft registration: |
| Location: | Date of occurrence: |

Name of IIC: _____

Signature of IIC: _____

**Section 2: <u>A participant's entitlement and obligation</u>**

| **General** | |
|---|---|
| Entitlement: | Obligations |
| • To participate to the extent as authorised by the IIC.<br>Note: Participation of States other than the State of Registry, the State of the Operator, the State of Design and the State of Manufacture may be limited to those matters which entitled such States to participate. | • To participate in the investigation under the control and supervision of the IIC.<br>• To provide the AAIB with all relevant information available to him/her.<br>• Not to divulge information on the progress and the findings of the investigation without the express consent of the IIC.<br>• To adhere to security and accident site access procedures and to wear an appropriate security pass issued or arranged by the AAIB.<br>• To abide by the health /safety (H&S) procedures implemented by the IIC or his/her H&S advisors. |

| **Accredited Representative** | |
|---|---|
| Entitlement | Obligations |
| • To visit the scene of the accident/incident.<br>• To examine the wreckage.<br>• To obtain witness information and suggest areas of questioning.<br>• To have full access to all relevant evidence as soon as possible.<br>• To receive copies of all pertinent documents.<br>• To participate in read-outs of recorded media.<br>• To participate in off-scene investigative activities such as component examinations, technical briefings, tests and simulations.<br>• To participate in investigation progress meetings including deliberations related to analysis, findings, causes, contributing factors and safety recommendations.<br>• To make submissions in respect of the various elements of the investigation. | • To supervise his/her Advisers, allowing them to participate in the investigation only to the extent necessary to make his/her participation effective. |

| **Advisor** | |
|---|---|
| Entitlement | Obligations |
| • To be permitted to participate in the investigation to the extent necessary to enable the effective participation of the Accredited Representative. | • To participate in the investigation under the supervision of his/her Accredited Representative. |

| **Expert** (appointed by a State having suffered fatalities or serious injuries to its citizens) | |
|---|---|
| Entitlement: | Obligations |
| • To visit the scene of the accident/incident.<br>• To have access to the relevant factual information, which is approved for public release by the AAIB, and information on the progress of the investigation.<br>• To receive a copy of the Final Report. | |

**Section 3: <u>Acknowledgement by Accredited Representative / Advisor / Expert / Others</u>**

By placing my signature hereon, I acknowledge that I have read and understood my entitlement and obligations as described in Section 2 above.

Name: _____

Signature: _____

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 10** | **: FLIGHT RECORDER READ-OUT** |

1. The investigator-in-charge (IIC) shall make effective use of flight recorders in the investigation of an accident or incident.

2. The AAIB has no a flight recorder read-out facility. The AAIB has multilateral MOUs between ASEAN countries and between ASEAN and China. If the read-out need is beyond the capability of the MOU facility, the IIC shall arrange for the read-out of the flight recorders at other facilities as soon as possible. In choosing a read-out facility available from other States, considerations should be given to the following:

a. The capabilities of the read-out facility
b. The timeliness of the read-out
c. The location of the read-out facility

3. In general, the IIC may consider using the read-out facilities in Australia, Canada, China, France, Singapore, Taiwan, the UK and the US.

4. The investigator or adviser assigned to supervise the reading out of the flight recorders shall control the number of people participating in the read-out and transcription process. The relevant investigation group (typically the Recorder group or the Flight Operations group) shall verify the read-outs and transcription before seeking the IIC's clearance for the read-outs and transcripts to be released to the other investigation groups for reference.

5. The investigator-in-charge (IIC) shall make effective use of available ground-based recordings in the investigation of an accident or incident.

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 10**<br>**APPENDIX 1** | **: GUIDELINES FOR FLIGHT RECORDER READ-OUT AND ANALYSIS** |

## 1. Choice of facility

The AAIB may request assistance from any State that, in its opinion, can best serve the investigation. The manufacture facture's standard replay equipment and playback software, which is typically used by airlines and maintenance facilities, is not considered adequate for investigation purposes. Special recovery and analysis techniques are usually required if the recorders have been damaged.

1.1 Facilities for the read-out of flight recorders should have the following capabilities:

(a) The ability to disassemble and read out recorders that have sustained substantial damage;
(b) The ability to play back the original recording / memory module without the need for the use of a manufacture's copy device or the recorder housing that was involved in the accident or incident;
(c) The ability to manually analyze the raw binary waveform from digital tape flight data recorders;
(d) The ability to enhance and filter voice recordings digitally by means of suitable software; and
(e) The capability to graphically analyze data, to derive additional parameters not explicitly recorded, to validate the data by cross-checking and other analytical methods to determine data accuracy and limitations.

## 2. Participation by the State of Manufacture (or Design) and the State of the Operator

The State of Manufacture (or Design) has airworthiness responsibilities normally required to read out and analyze flight information. Since flight recorder information can often reveal airworthiness problems, the State of Manufacture (or Design) should have a representative present when the flight recorder read-out and analysis.

The State of the Operator has regulator responsibilities regarding the flight operation and can provide insights into operational issues which may be specific to the operator.

3. **Recommended procedures**

The flight data recorder and the cockpit voice recorder should be read out by the same facility, in determining timing and synchronization.

(a) Flight recorders should not be opened or powered up and original recordings should not be copied.

(b) The Facility at which the flight recorders are read out for another State should be given an opportunity to comment on the Final Report in order to ensure that the characteristics of the flight recorder analysis have been taken into account.

(c) The Facility at which the flight recorders are read out may require the expertise of the aircraft manufacturer and the operator in order to verify the calibration data and validate the recorded information.

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 11** | **: SPECIALISED EXAMINATIONS AND TESTING** |

## 1. **General**

1.1 Specialised examinations may include component testing, examination using scanning electron microscope, chemical analysis, systems testing, flight testing (with an actual aircraft or in a simulator), complete or partial reconstruction of the aircraft or specific systems.

1.2 Laboratory examination and testing generally entails the use of specialised equipment not available in the fields and often beyond the capability of an aircraft maintenance facility. Consideration should be given to using the component manufacturer's facilities where specialised equipment and trained personnel are readily available.

1.3 For flight testing in a simulator, the aircraft manufacturer's facilities may have to be considered.

1.4 Laboratory testing should not be limited to standards tests. In addition to testing for compliance with appropriate specifications, it is sometimes necessary to determine the actual properties of the specimen (such as metal, material, fuel and oil).

1.5 The investigator-in-charge should assign an investigator to supervise the specialised examination and testing, or delegate the supervision to a suitable person (e.g. an accredited representative or one of his advisors, or an official of a foreign accident investigation authority).

1.6 Where necessary, non-disclosure agreement with the examination or testing service providers should be worked out.

## 2. **Documentation**

2.1 A test plan should be formulated for the test to be conducted. As far as possible, the test plan should identify the following:

- Item/system to be tested
- Objective of the test
- Test venues

- Test methods
- Test equipment
- Test conditions
- Test procedures
- Test schedule
- Responsibilities of the various parties
- Data to be collected from the test

2.2 Adequate records should be kept and reports compiled for the examination or testing. Photographs should be taken. Videotaping of the examination process should also be consider.

3. **Record of Local Approved Maintenance Organization**

| No. | AMO Name | NDT (D1) | Aircraft Type Approval |
|---|---|---|---|
| 1. | Myanmar National Airlines (Myanmar) | PT, MT, ET,UT,RT | ATR 72 Series (Up to Multiple C Check), 24000FC 8 Year Check) (Base & Line Maintenance) Embraer ERJ 190 (Up to Intermediate checks and MIDC checks) (Base & Line Maintenance) Boeing 737-800 (Up to 12 A Checks) (Line Maintenance) Cessna 208B (Up to Multiple A and C Check) (Base & Line Maintenance) C5,C6, C14, C16, C18,D1 |
| 2. | Yangon Aircraft Engineering Co.Ltd (Myanmar) | PT,UT, ET,MT, RT | ATR 72 -100/200/212A series (Up to multiple C Check, 12 Year Check and 24000 Cycle Check) (Base & Line Maintenance) C5,C6, C14, C16, D1 |
| 3. | Myanmar Airways International (Myanmar) | PT (Using field kit) | A 319/A320/A321 (Fitted with IAE V2500 or CFM 56) Line Maintenance D1 |

| No. | AMO Name | NDT (D1) | Aircraft Type Approval |
|---|---|---|---|
| 4. | Air Thanlwin Limited (Myanmar) | ET (level Ⅱ) | ATR 72 Series Up to multiple C Check (Line & Base Maintenance) C5,C6, C14, C16, C18,D1 |
| 5. | Golden Myanmar Airlines (Myanmar) | - | ATR 72-212A (Aeroplanes above 5700kg) Up to 4A Check & 1 Year Check (Line Maintenance) |
| 6. | Air KBZ (Myanmar) | - | ATR 72 Series (Up to and including of Multiple A Check, 3000FL/ 6000FL Tasks of 24000FL Check and 4000FH Check) (Base & Line Maintenance) |
| 7. | Myanmar Aviation Academy (Myanmar) | - | Diamond DA 40 (Aeroplanes 5700kg & Below) (Up to 2000 Hours Inspection) (Line Maintenance) Diamond DA 42 (Up to 2000 Hours Inspection) (Line Maintenance) |
| 8. | Air Myanmar Aviation Services (Myanmar) | - | Airbus Helicopters AS 350 (Up to and including 72 months Inspection) (Base & Line Maintenance) Agusta AB 139/ AW 139 (Up to and including 600FH/ 2 year Inspection) ( Line Maintenance) |
| 9. | Mann Yadanapon Airlines Co.Ltd (Myanmar) | - | ATR 72-212A 600 Series ( Line Maintenance) C5 |

Local= 9Nos.
NTD

Radio graphic-RT, Liquid Penetrant-PT, Magnetic-MT, Ultra-Sonic-UT, Eddy Current-ET, Thermograph-TT

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 11** | **: COMPONENT TESTING** |
| **APPENDIX 1** | |

1. **General**

1.1 When choosing a system and components for specialised 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 will 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 will be obtained by using as many of the original system component as possible.

2. **Information pertinent to failed parts or components to be examined**

2.1 Each component should be tagged with its name, part number, serial number and the accident identifier. The investigators 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.

2.2 When investigators forward 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 a detailed history of the parts or components and their own suspicions, if any. The information in respect of a part or component may include the following:

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

2.3 The information provided by the investigator is intended only as a guideline to the specialist carrying out the examinations who should, nevertheless, explore all relevant aspects.

## 3. Transporting of parts or components

3.1 Components should be packed to minimise damage during transport. Particular care should be taken to ensure that fracture surfaces are protected by appropriate packing material so that they are not damaged by mating surfaces coming into contact with each other or with other parts.

3.2 Whenever possible, powerplants 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.

3.3 Smaller and lighter components may be shipped in the same manner with more than one to a box but in a manner which will prevent them from coming into contact with one another.

3.4 Very light units may be packaged in heavy corrugated pasteboard cartons with sufficient packing material to prevent damage from mishandling during transport.

3.5 The investigators should label all boxes and cartons appropriately and should make an inventory list for each container.

## 4. Notes and test results

4.1 Notes concerning the specialised examinations should be kept by the facility personnel, and the results should be recorded on the standard forms used by the facility for such work. The investigator supervising the work should also take notes.

4.2 Prior to conducting the examinations, the supervising investigator should brief the investigators and the facility personnel involved on the type and extent of the examinations and tests to be carried out and review with them the test procedures to ensure their adequacy.

4.3 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 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.

4.4 Following completion of the examinations, the supervising investigator should review and discuss the results with the investigators and the facility personnel. When there is agreement that the data gathered present a true and factual picture of the component's condition and capabilities, the notes and test results should be reproduced to serve as a record of the examination and testing of the system or component.

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 11** | **: FRACTURE INVESTIGATION** |
| **APPENDIX 2** | |

Reference: "Understanding How Components Fail" by Donald J Wulpi, published by the American Society for Metals

1. Listed below are ten general areas of inquiry in any fracture investigation. Although these areas could be interrelated, the sequence in which these areas are considered is not important.

(a) Surface of fracture

- What is the fracture mode? For example, shear, cleavage, intergranular, fatigue.
- Are the origins of the fracture visible? Are they located at the surface or below the surface?
- How many fracture origins are there? The answer concerns the relative magnitude of the actual stress to the actual strength of the part at the location of failure.
- Is there evidence of corrosion, paint or some other foreign material on the fracture surface? Possibility of a pre-existing crack prior to the fracture?
- What is the relation of the fracture direction to the direction of the stress that caused the fracture and to the normal or expected fracture direction?
- Was the stress unidirectional or was it reversed in direction? Is the assumption regarding the operation of the mechanism correct?

(b) Surface of part

- What is the contact pattern on the surface of the part and on the surface of the mating parts?
- Has the surface of the part been deformed by loading during service or by damage after fracture?
- Is there any evidence of damage on the surface of the part from manufacture, assembly, repair or service? For example, tool marks, grinding damage, poor welding or plating, arc strikes, corrosion, wear, pitting fatigue, fretting.

(c) Geometry and design

- Are there any stress concentration related to the fracture?
- Is the part intended to be relatively rigid, or is it intended to be flexible?

- Does the part have a basically sound design?
- How does the part and its assembly work?
- Is the part dimensionally correct?

(d) Manufacturing and processing

- Are there internal discontinuities or stress concentrations that could cause a problem?
- Wrought metal - Does it contain serious seams, inclusions, or forging problems such as end grain, laps or other discontinuities that could have an effect on performance?
- Casting - Does it contain shrinkage cavities, cold shuts, gas porosity, or other discontinuities, particularly near the surface of the part?
- Weld - Was the fracture through the weld itself or through the heat-affected zone in the parent metal adjacent to the weld? If through the weld, were gas porosity, undercutting, under-bead cracking, lack of penetration, or other problems a factor? If through the heat-affected zone adjacent to the weld, how were the properties of the parent metal affected by the heat of the welding?
- Heat treatment - Was the treatment properly performed? Evidence of inadequate heat treatment like too shallow or too deep a case depth, excessive decarburisation, very coarse grain size, overtempering, undertempering, and improper microstructure?

(e) Properties of the material

- Are the mechanical properties of the metal within specified range?
- Are the specifications proper for the application?
- Are the physical properties of the metal proper for the application? For example, coefficient of thermal expansion (for close-fitting parts), density, melting point, thermal and electrical conductivity.

(f) Residual and applied stress relationship

(g) Adjacent parts

- What was the influence of adjacent parts on the failed part? Possibility that the fractured part may not be the primary or original failure?
- Were fasteners tight?

(h) Assembly

- Is there evidence of misalignment of the assembly?
- Is there evidence of inaccurate machining, forming, or accumulation of tolerances?
- Did the assembly deflect excessively under stress?

(i) Service conditions

- Were there any unusual occurrences such as strange noises, smells, fumes, or other happenings that could help explain the problem?
- Is there evidence that the mechanism was over speeded or overloaded?
- Is there evidence that the mechanism was abused during service or used under conditions for which it was not intended?
- Did the mechanism or structure receive normal maintenance with the recommended materials (e.g. lubricants)?
- What is the general condition of the mechanism?

(j) Environmental reactions

- What chemical reactions could have taken place with the part during its history (manufacturing, shipping, storage, assembly, maintenance and
- service)? For example, exposure to hydrogen (during acid pickling, electroplating, etc.), exposure to corrosive environment.
- To what thermal conditions has the part been subjected during its existence? For example, abnormally high temperature, localised electrical arcing, grinding damage, adhesive wear, frictional heat.

| **SECTION 5 : INVESTIGATION CONDUCTED BY AAIB** |
|---|
| **CHAPTER 11 : MEDICAL AND AUTOPSY EXAMINATIONS**<br>**APPENDIX 3** |

1. The investigator-in-charge shall arrange expeditiously for medical examination (including toxicological examination) of the crew and, where appropriate, passengers and aviation personnel involved by a medical practitioner. Preferably, a medical practitioner experienced in accident investigation should be used.

2. The investigator-in-charge shall also arrange expeditiously for complete autopsy examination of fatally injured flight crew and, where necessary, fatally injured passengers and cabin attendants by a pathologist. If a pathologist experienced in accident investigation is not available, the IIC should consider assigning aviation medicine trained Investigators of Accidents to liaise with and assist the pathologist.

3. The investigator-in-charge shall also require the crew, passengers and aviation personnel involved to undergo such other tests (including a breathalyzer test) as he considers necessary for the purposes of the investigation.

4. Guidance material related to medical, toxicological and autopsy examinations is available in the ICAO Manual of Civil Aviation Medicine (Doc 8984) and Manual of Aircraft Accident Investigation (Doc 6920).

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 11** | **: BIRD STRIKE** |
| **APPENDIX 4** | |

Reference: "Information on Bird Strike" compiled by Ong SweeChoon, filed in AIB/OPS/BIRD.

1. **Investigating occurrences involving bird strikes**

1.1 If possible, invite a local ornithologist to the occurrence site to assist in an investigation involving a bird strike. The ornithologist will be able to advise, among other things, whether additional tasks need to be performed, such as getting evidence from live birds at the site.

1.2 It may be necessary to examine a carcass and compare it with live individuals near an accident site to determine whether dead individuals have disproportionately more parasites, were contaminated with chemicals or had diseases. This may provide clues to the possible environmental issues within the airport and its surroundings.

1.3 If an ornithologist is not on site to advise, the following suggestions should be considered:

(a) Record the following information:
- Date and time of the bird strike
- Location of the bird strike. Provide a layout or map if available.
- Weather condition

(b) Take photographs of all bird carcasses and their body parts before these are disturbed. Where possible, take the photographs with a suitable sized ruler to provide a reference to estimate the size of the bird. The photographs should include parts of the aircraft which had been impacted by the birds. If there are live birds present in the vicinity, photographs should be taken of these live birds as well, for future reference purposes.

(c) Threat all bird carcasses and parts with caution, as they may carry diseases or parasites. Always use protective gloves and tweezers or tongs when picking up bird carcasses and parts. Wear face masks and/or eye protection as appropriate.

(d) Preserve the specimen of the damaged bird by wrapping it and all its parts in a sterile plastic bag or container and keep it in a freezer as soon as possible. Collect every feather, beak, feet or any parts that may be part of the carcass. If the bird had been reduced to a pulpy mess (such as being ingested through the engine), all remnants of the bird tissues should be collected.

(e) Look out for any ring tags that the bird might be carrying on its leg. Take close-up photographs of the ring tags. Keep the ring tags with the rest of the bird carcass.

(f) Inspect the aircraft, the runway/taxiway and the accident/incident site for any remnants of other bird carcasses. There may be more than one bird involved.

(g) Always practise good hygiene and observe basic safety measures when collecting bird remains. After completing the gathering of the remains, wash hands thoroughly, including any equipment used for collecting the remains. Masks, gloves and disposable items used during the gathering of the remains should be disposed of properly.

1.4 Sending bird remains (even an entire bird) to a local ornithologist may not be a problem. However, there may be some shipping constraints when bird remains need to be sent overseas for identification, and the following should be noted:

(a) For a whole bird, pluck a variety of feathers, such as feathers from the breast, back, wing and tail. It is neither necessary nor desirable to send the whole carcass.

(b) For a partial bird, collect a variety of feathers with obvious colour or pattern.

(c) Where only the feathers are available, send all material found.

(d) Do not cut feathers from birds. The down at the base of the feather is needed for identification.

(e) Do not use any sticky substances with the feathers collected, such as tape or glue.

(f) Place the remains in a re-sealable bag. If remains are fleshy or moist, the material can be folded in paper towel or coffee filters. Use more than one re-sealable bag as appropriate.

(g) When only a small amount of material is available, wipe the impact area with paper towel and send all material/entire paper towel in a re-sealable bag. If necessary, spray the area with alcohol or water to loosen the material for collection.

2. **Where to get help to identify the birds**

2.1 Ornithologists can identify the type of birds from the samples collected, such as feathers, beak, feet and bone fragments. The size of the bird, date and time of the bird strike will also be helpful.

2.2 If the bird had been reduced to a pulpy mess, the tissue sample may need to be analysed to identify the bird.

2.3 If the local ornithologists cannot identify the bird species, consider sending the bird remains to an overseas facility such as the Feather Identification Laboratory of the Smithsonian Institution in the US.
Telephone number of the Laboratory: (202)-633-0801

2.4 To ship any bird remains to the Feather Identification Laboratory, the following shipping addresses are to be used:

| By post (for routine/non-urgent cases): | By courier (for urgent cases): |
|---|---|
| Feather Identification Laboratory | Feather Identification Laboratory |
| Smithsonian Institution | Smithsonian Institution |
| NHB, E600, MRC 116 | NHB, E600, MRC 116 |
| P.O. Box 37012 | 10th & Constitution Ave., NW |
| Washington, DC 20013-7012 | Washington, DC 20560-0116 |
| United States of America | United States of America |

2.5 It should be noted that the database at the Feather Identification Laboratory of the Smithsonian Institution is for birds identified in the US. For birds outside the US, additional information may be needed to assist the laboratory as required.

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 12** | **: WRECKAGE IN WATER** |

## 1. Locating the wreckage

1.1 For aircraft crash at sea, the investigator-in-charge (IIC) should try to obtain the best technical expertise available. The Navy, Maritime and Port Authority, marine salvage services and accident investigation of other States known to have experience in this field (e.g. US NTSB, UK AAIB, Canada TSB) should be consulted. Advice may also be obtained from people (e.g. fishermen) with local knowledge of sea beds and currents, etc.

1.2 The first step is to ascertain the most probable point of impact basing on floating wreckage, witness reports, search and rescue reports and radar recordings. Buoys should be positioned at the estimated point of impact.

1.3 If the water is shallow (less than 60 m), search methods using divers can be effective. If the wreckage is located in deeper water, or conditions make it difficult to use divers, use of the following equipment should be considered:

- Underwater equipment used to locate underwater locating devices on the flight recorders.
- Underwater videos and cameras.
- Side-scan sonar equipment.
- Manned or unmanned submersibles.

## 2. Decision to recover the wreckage

2.1 The circumstances and location of an accident will determine whether salvage of the wreckage is practicable. In most cases, wreckage should be recovered if it is considered that the evidence it might provide would justify the expense and effort of a salvage operation.

2.2 A decision to discontinue recovery operation should be made in consultation with the parties concerned (the accident airline in particular).

## 3. Wreckage distribution

3.1 Once the wreckage has been located, a chart plotting the wreckage distribution should be prepared. In shallow waters, this can be achieved by divers. In deep waters, underwater video cameras from remotely controlled submersibles may be used.

3.2 The state of the various pieces of wreckage, their connection by cables or pipes, the cutting of these connections for the salvage operations, etc., should be recorded before lifting the various pieces of wreckage from the bottom. As divers will not be experienced in accident investigation, they will need detailed briefings.

## 4. Preservation of the wreckage

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 it.

4.2 Once the wreckage has been recovered, its components should be thoroughly rinsed with fresh water. It may be convenient to hose the wreckage as it is raised out of the water prior to it being lowered onto the salvage vessel. Freshwater rinsing does not stop all corrosion 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 will provide additional corrosion protection; fracture surfaces should then be given a coat of corrosion preventives such as oil or inhibited lanolin.

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.

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.

## 5. Precautionary measures

5.1 When recovering the wreckage, consideration should be given to deflating tyres and pressure containers as early as possible. Corrosion of magnesium wheel assemblies can progress rapidly to the extent that the wheel assemblies become safety hazards. Other pressure containers should be discharged as soon as their contents have been evaluated.

5.2 The operation of recovery equipment and the supervision of salvage personnel should be left to the salvage contractor. The investigator may provide advice on how to attach cables, hooks, etc., to the wreckage to ensure that it is not unnecessarily damaged during the recovery.

5.3 When salvage barges, which are equipped with large machinery, hoists, cables, nets, rigging equipment, etc., are used, investigators should exercise caution and, in particular, should remain clear of equipment and sling loads.

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION ACTIONS** |
| **CHAPTER 12** | **: DEBRIS TAGGING AND DOCUMENTATION** |
| **APPENDIX 1** | |

1. **Debris data system**

1.1 Proper records should be kept of the items found from the recovery operation. The records should contain details related to each piece, such as recovery location, extent and type of damage, photographs, sketches, and the manufacturer's engineering drawings showing the part's location on the aircraft.

1.2 A debris data management team should be set up to systematically record all the wreckage pieces recovered. The team should be headed by an AAIB investigator or a member of the Structures Sub-group. The team should comprise or be supported by members of the Structures Sub-group, who will examine the debris items to try to identify the portions of the aircraft where they may have come from.

2. **Tagging of wreckage pieces**

2.1 All large and small wreckage items recovered from the sea that are identifiable and considered significant should be tagged for reference. The tag should carry a reference number and the following information:

- Location where the wreckage piece was found
- Date/time of the recovery
- The recovery team involved

2.2 If necessary, colour-coded tags may be used to readily identify the different zones of the debris field from which the items have been recovered. For example, the debris fields may be divided into the Red, Green and Yellow Zones and red, green and yellow tags are then used respectively for the items recovered from these zones.

2.3 Tags are usually attached to the items promptly upon recovery and before the items are transported to the shore or storage area. Nevertheless, items found and brought in by other parties (e.g. volunteers) may not carry any tags.

## 3. Logging into a debris database

3.1 After the specialists of the data management team has examined the items and identified the portions of the aircraft where they have come from, the items are assigned a log number for input into a debris database together with any other details and sketches or photographs. The log number is written on the wreckage piece itself and on a separate tag that is to be attached to the piece.

3.2 It is possible that one tagged item may spawn many more log numbered items. For example, during salvage and reconstruction efforts it may occasionally become necessary to cut or separate objects (previously tagged as a whole) into more than one piece; some objects may have been extracted from an entangled group of debris (recovered and tagged as a unit); pieces may have been received in a bag, net or box full of other items with one tag assigned to the container; or some parts may have broken during handling and transport. In all of these situations, the recovery position information on the original tag must be transferred to the log numbered tags assigned to the separated objects

3.3 For easier referencing, a classification system for the log numbers may be created. For example, the following nomenclature was used by NTSB for the TWA 800 wreckage (XX denotes the number assigned to an individual piece):

| | |
|---|---|
| LF-XX | Left fuselage |
| RF-XX | Right fuselage |
| LW-XX | Left wing |
| RW-XX | Right wing |
| H-XX | Horizontal stabilizer (both sides) |
| LE-XX | Left elevator |
| RE-XX | Right elevator |
| V-XX | Vertical stabilizer |
| R-XX | Rudder |
| CW-1XX | Wing centre section - upper skin |
| CW-2XX | Wing centre section - lower skin |
| … | |
| CWS-10XX | Wing centre section - rear spar |
| CWS-11XX | Wing centre section - butt line zero rib |
| FBM-XX | Floor beam |
| LG-XX | Landing gear |

| **SECTION 5 : INVESTIGATION CONDUCTED BY AAIB** |
|---|
| **CHAPTER 13 : CABIN SAFETY INVESTIGATION** |

1. To assist investigators in investigating cabin safety related accidents and incidents, the following guidelines are attached for reference.

Appendix 1: Checklist for documenting cabin condition
Appendix 2: Checklist for information to be gathered from cabin crew
Appendix 3: Checklist for information to be gathered from passengers

2. The information gathered may be used in conjunction with the information gathered by other investigation groups (medical, human factors and operations) to determine the cause of the injuries and the survival aspects of the accidents and incidents, as well as to develop related recommendations.

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 13 APPENDIX 1** | **: CHECKLIST FOR DOCUMENTING CABIN CONDITION** |

1. **General information**
   - Weather conditions
   - Engineering drawing of interior that depicts seat layout, seat pitch galleys, lavatories and emergency exit(s)

2. **Damage to cabin interior**
   - Document overall condition of cabin (e.g. intact, broken apart, fire damaged).
   - Location of debris such as galley equipment, seats, luggage and areas with indication of fire or smoke damage.
   - Use photographs to supplement written report.

3. **Cabin crew and passenger seats**
   - Manufacturer, model number, serial number, date of manufacture and rated loads.
   - Evidence of impact.
   - Description of the integrity of tie-downs and rails.
   - Measurement and description of the deformation/separation of seats and tie-downs.
   - Location of child restraint system (CRS), seat-loaded cargo, stretchers and bassinets.

4. **Seat belts and shoulder harnesses**
   - Seat belt manufacturer, model number, serial number, date of manufacture and rated loads.
   - Condition of seat belts and seat belt extensions (e.g. damaged, detached, intact and cut).

5. **Stowage compartments**
   - Describe damage to storage areas, such as overhead bins, closets and compartments.
   - Condition of latching mechanisms for storage areas.

6. **Carry-on luggage**
   - Location of carry-on luggage found in cabin (e.g. overhead bins, underseat storage, closets and piled near exits)

7. **Communication**
   - Conduct functional check of the PA system.
   - Conduct functional check of the interphone system.
   - Describe the positions of switches for emergency evacuation alarm systems (cockpit and cabin).
   - Describe the positions of switches for the emergency lighting systems (cockpit and cabin).
   - Describe the content of the pre-departure safety briefing and how the information is conveyed to passengers (PA system, recording, or video demonstration).
   - In what language(s) was the briefing conducted?
   - Describe the airline's procedures for exit row briefing.

8. **Exits**
   - Describe the location of all exits (cockpit and cabin). Were they open or closed?
   - Describe the location of emergency exit hatches.
   - Describe the deployment of ropes, tapes or inertia reels.
   - Describe the damage to exit and surrounding fuselage.
   - Describe the position of arm/disarm lever or girt bar.
   - Describe the position of exit opening handle.
   - Describe the condition of power-assist device (record pressure, if appropriate).
   - Describe the assist space available at exit.
   - Measure the height of the exit sills above the terrain if the aircraft has an unusual attitude.

9. **Evacuation slides and/or slide/rafts**
   - Position of the device (deployed, stowed, inflated, deflated, removed from aircraft).
   - Name of manufacturer, date of manufacture, model number, serial number, Technical Standard Order (TSO) number, and date of last overhaul.
   - Describe any damage to the slide.

10. **Emergency equipment**

- Using a cabin crew manual as a guide, document the location and condition of emergency equipment in the cabin:
- Flashlights
- Megaphones
- Fire extinguishers
- Protective breathing equipment (PBE)
- Crash axe/pry bar
- Portable oxygen bottles
- First aid kits
- Medical kits
- Defibrillator
- Emergency location transmitters (ELT)
- Protective gloves
- Smoke barriers
- Smoke detectors
- Lavatory waste bin automatic extinguishers
- Emergency lights
- Floor proximity lighting system

11. **Accidents involving water contact**

- Document the condition and location of:
  - Life rafts or slide/rafts
  - Life vests
  - ELT
  - Water conditions at time of accident (wave height, swell height and temperature)
  - Survival kits

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 13**<br>**APPENDIX 2** | **: CHECKLIST OF INFORMATION TO BE GATHERED FROM CABIN CREW** |

1. **General information**

- Weather conditions
- List of cabin crew members
- Passenger manifest with names and seat assignments of occupants (including lap-held infants)
- Cabin crew member manual (used to determine emergency procedures, cabin layout and emergency equipment location)
- Cabin crew member training records (initial, transition and recurrent)
- Safety briefing card
- Engineering drawing of interior that depicts seat layout, seat pitch galleys, lavatories and emergency exit(s)

2. **Cabin crew member**

- Name, business address and phone number
- Gender, age, height and weight
- Operational experience on the accident aircraft type in hours or years
- Work category-cabin crew member, purser, lead crew member, etc.
- Number of different aircraft types/models that the cabin crew member is qualified on
- Medical history and medication taken at the time of the event
- Current medical condition and medication taken at time of the interview
- Experience as a cabin crew member (in years) with current carrier/previous carrier
- Flight and duty schedule 72 hours prior to the event
- Food and beverage consumed during the 24 hours period before the occurrence
- Sleep/wake cycle for the 7 day period before the occurrence
- Travelling time to airport
- Were you injured? Describe your injuries. When and how were you injured?

3. **Pre-flight/in-flight activities**

- Describe the pre-flight crew briefing. What was covered? Who are present? Who conducted the briefing?
- Describe any cabin system(s) that was unserviceable at the beginning of, or during the flight?
- Describe observations of, or interaction with, maintenance, ground service personnel and flight crew that may be pertinent to the investigation.
- Describe the location of passengers with special needs/children travelling alone.
- Describe the location of infant/child restraint system(s).
- Describe the location of passengers with disabilities.
- Describe the passenger safety briefing. Were passengers attentive to the briefing?
- Describe the amount and stowage of carry-on baggage.
- Describe your pre-departure cabin activities.
- Was alcohol served before/during the flight? If yes, approximately how many drinks did you serve?
- When did you prepare your emergency exit(s) for departure?
- Where were you seated for take-off and landing?
- Describe the type of seat restraint system used at your jump-seat.

4. **Occurrence information**

- Describe if and how you were informed of a problem. If briefed by the Captain, what information were you given? If briefed by another crew member, what information were you given?
- Describe your location during occurrence.
- Describe if and how the passengers were informed of a problem? What was their reaction?
- Describe the pre-occurrence preparations (i.e. type of warning, cabin preparation).
- Describe the occurrence.
- Describe the impact.
- Describe the emergency commands you used, if any.
- Describe the passenger reaction to your commands.
- Describe the passenger's brace positions.
- Describe your brace position.
- Describe the security of cabin furnishings in your area.
- Describe any difficulties you may have had with your seat/seatbelt/shoulder harness.

- Describe any safety or emergency equipment you used. Why and how did you use it? Was it effective?
- Describe your view of the cabin. If your view was obstructed, please explain.

5. **Evacuation**

- How did you decide to evacuate?
  - Captain's order?
  - Personal judgment?
  - Evacuation alarm?
  - PA announcement?
  - Firefighter's order?

- Describe the evacuation.
- Which exit(s) did you open?
- What was your assigned exit(s)?
- If you did not open an exit, explain why.
- Did you have a direct view of your primary/secondary exits from your jump-seat?
- Did you assess the conditions? How?
- Were there any difficulties assessing outside conditions? Opening the exit? Deploying or inflating the evacuation slide? If yes, please describe
- Did the emergency lights operate? Which emergency lights did you observe?
- Describe the illumination inside/outside the aircraft.
- Describe passenger reactions during the evacuation (calm, panic, etc.).
- Did the passengers attempt to take carry-on baggage during the evacuation?
- Did you have passengers' assistance at your exit? How did the passengers assist?
- Describe any problems with the passengers during the evacuation.
- Describe any difficulties with passengers with special needs or children travelling alone.
- Approximately how long did the evacuation take? What is the estimate based on? (Note: Time estimates may be unreliable)
- Did you see other cabin crew members evacuate the aircraft? Which exits did they use?
- Did you take emergency equipment with you? Which equipment? How was it used?
- Describe the flight deck crew activities outside the aircraft.
- Describe the rescue/fire fighting activities.

- Were you injured? Describe your injuries and how they were sustained.
- Were you transported to a hospital or medical facility?
- Approximately how long did the rescue efforts take?
- Describe your clothing and its suitability for the evacuation.

6. **Training**

- Describe your initial and annual emergency/safety training.
- Did your training include basic instructions in aerodynamics and aircraft performance?
- When was your last evacuation drill? Describe the drill. How often is the drill conducted?
- When was your last door drill? Describe the drill. How often is the drill conducted?
- Describe your fire fighting training.
- Describe your initial and annual ditching training.
- Do you participate in a wet ditching drill? Describe the drill.
- Describe your practical training with respect to the use of emergency/safety equipment.
- Did you participate in crew resource management training with pilots or other members of your company? Explain.
- Did your training prepare you for what happened?

7. **Turbulence**

- Describe your company's crew communication procedures for turbulence.
- Describe the crew communication procedure used in this event.
- Were you warned before you experienced the turbulence? How?
- Was the seatbelt sign on? If yes, for how long?
- Were passengers seated when the seat belt sign was on?
- Were you seated at your cabin crew member assigned seat? If you were not seated, why not?
- Where were you when the turbulence occurred?
- What announcement was made regarding the turbulence? Were passengers instructed to remain seated? When were the announcements made?
- Were there problems with stowing equipment before or after the turbulence event?
- Were you injured? Describe your injuries. Were you able to assist others following the turbulence?
- Describe injuries that you observed in other crew members or passengers.

8. **Smoke/ Fire/ Fumes**

- When did you become aware of smoke fire, or fumes?
- Where did you first observe smoke or fire? Describe what you saw and/or smelled (colour, density and odor)
- Where were you when you first became aware of fumes?
- Did the conditions increase, decrease or change during the occurrence?
- Did you have difficulty breathing? Did you use PBE or other protection?
- Did you have problems communicating with other crew members or passengers? If yes, describe the problems
- Did you use fire-fighting equipment? Describe.

9. **Ditching/Inadvertent water landing**

- Were there any problem deploying, inflating or boarding the slide/rafts or life rafts?
- Did you move a slide/raft or life raft from one location to another? Describe any difficulties
- What type of personal flotation device did you use? From where did you obtain it?
- Did you have any problems obtaining it or using it?
- What personal flotation devices did passengers use?
- Did passengers have any problems obtaining or donning their life preservers? (adults/infants/children)
- Who commanded the lift raft or slide/raft that you boarded? Were there other crew members in that raft?
- Describe the rescue operation.
- Describe sea survival procedures that were used.
- Did you retrieve an ELT? If yes, from where? Was the ELT used?

10. **Additional comments**

- Based on your experience, can you suggest any improvements to procedures or equipment?
- Do you have any further information that you think you may assist in the investigation of this occurrence?
- Do you know of any passengers who would like to or could provide information?

| | | |
|---|---|---|
| **SECTION 5** | **:** | **INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 13** | **:** | **CHECKLIST OF INFORMATION TO BE GATHERED** |
| **APPENDIX 3** | | **FROM PASSENGERS** |

1. **Personal data**

- Name, gender, age, height and weight
- Address
- Phone number
- Occupation
- Seat number and location
- Aviation experience
- Any disability that could impair egress from the aircraft
- Languages spoken
- Were you injured? Describe your injuries. When and how were you injured?

2. **Pre-flight preparations**

- Describe the weight, size and stowage of your carry-on baggage.
- Describe the clothing and footwear that you were wearing when the accident occurred.
- Was there a pre-departure safety briefing? How was it provided (i.e. pilot, cabin crew member, video or other means)? Did you understand the safety briefing?
- Did you read the safety card?
- Did you understand the information on the safety card?
- Did you note the locations of more than one exit near your seat?
- Were you seated adjacent to an emergency exit?
- Were you briefed prior to departure on the operation of the exit? If yes, by whom?
- Describe the observations of maintenance, ground service personnel (de-icing) or flight crew that might be pertinent to the investigation.

3. **Occurrence information**

- How and when did you first become aware of a problem? Where were you when you first became aware of a problem?
- How did the crew prepare you for the emergency? Were you given instructions over the PA system? By an individual crew member? Shouted instructions?

- Did you hear any shouted commands? If yes, what did you hear? Did the information help you?
- Did you brace for impact? Describe your brace position.
- Were you travelling with infants/children? How were they restrained? Were there any problems?
- How tightly was your seat belt fastened? Did you have any problems releasing your seat belt? If yes, describe them
- Did you remove your shoes? Why? If you did not remove them, did they stay on during the impact and evacuation?
- Describe the impact sequence. What happened to you during the impact sequence?
- Did anything happen to your seat during impact?
- Did you remain seated until the aircraft stopped?

4. **Evacuation**

- Which exit did you use? Why?
- Did you encounter problems reaching your exit? If yes, describe.
- Did you attempt to take anything with you when you left the aircraft? If yes, what did you take?
- Did you assist anyone during the evacuation?
- Did anyone assist you?
- Did you open an exit? If so, which one? Did you experience difficulty operating or using the exit?
- Did you notice any lights on in the cabin? Where?
- Approximately how long did it take you to evacuate the aircraft? What is your estimate based on?
- What did you see when you got out of the aircraft?
- Did help arrives quickly? Describe the rescue efforts.
- Did a rescuer assist you? How?
- Did you sustain any injury? If yes, please describe your injury and, if known, its causes.

5. **Turbulence**

- Where were you when the turbulence occurred?
- Was your seat belt fastened? If not, whey not?

- Was the seat belt sign on?
- Did you hear any announcement regarding seat belts? If yes, describe what you heard.
- Who do you think made the announcement(s)? Flight deck crew and/or cabin crew members(s)?
- Were you injured? Describe your injuries. Were you given first aid by a cabin crew member or passenger?
- If you were travelling with an infant/child, what happened to the infant/child? How were they restrained?

6. **Smoke/ Fire/ Fumes**
   - When did you become aware of smoke, fire, or fumes?
   - Where did you first observe smoke or fire? Describe what you saw and smelled (colour, density, odor)
   - Where were you when you first became aware of fumes?
   - Did the conditions increase, decrease or change during the occurrence?
   - Did you have difficulty breathing? If yes, what action did you take to protect yourself?
   - Did you observe fire-fighting procedures? Describe.

7. **Ditching/Inadvertent water contact**
   - What types of flotation devices were available?
   - Did you obtain a life preserver?
   - Where was it stored?
   - Did you have a problem retrieving it?
   - Did you put it on?
   - When did you inflate it?
   - Did it work properly?
   - If you were travelling with an infant or child, was a life preserve provided for the child?
   - Did you use the seat bottom cushion as a flotation device? Describe how the cushion was used and its effectiveness.
   - Did you board a life raft or slide/raft
   - Were there any difficulties?

- Describe the type of raft you boarded.
- What equipment in the life raft (slide/raft) was used?
- How many people were in the life raft?
- Describe the water conditions.
- Describe any sea survival procedures that were used.
- Describe the weather conditions.
- Describe the rescue effort.

8. **Additional comments**

- Based on your experience, can you suggest any improvements to procedures or equipment?
- Do you have any further information that you think may assist in the investigation of this occurrence?

9. **Others**

- Reports of follow-up component tests
- Photographs
- Written statements

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 14** | **: OCCURRENCES INVOLVING UNLAWFUL INTERFERENCE** |

1. If, in the course of an investigation into an accident or incident, it becomes known or is suspected that an act of unlawful interference was involved, the investigator-in-charge shall, after consultation with the Chief investigator of Accidents and the Union Minister, immediately inform the Police or take steps to ensure that the aviation security authorities of other States concerned are informed.

2. Unless otherwise directed, the IIC will continue his technical investigation in parallel with any security investigations that may be initiated by the relevant authorities. This is because there may still be other issues than security to be looked into by the IIC and in respect of which safety lessons can be drawn.

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 15** | **: PROVISION OF INFORMATION TO ACCIDENT VICTIMS AND THEIR FAMILIES** |

1. The provision of family assistance should be separate from the accident investigation. The investigator-in-charge (IIC) must remain focused on the investigation of the accident.

2. However, the IIC should bear in mind that the AAIB has a responsibility to provide relevant and timely information to the families of the victims and the accident survivors. The IIC should be aware of the concerns of the families and survivors and anticipate the need to provide, through the appropriate channels (e.g. public relations, airlines, Police), information to the families and survivors on issues of immediate concern, such as the release of personal effects held as part of the investigation, and progress on the investigation.

3. If any personal effects need to be retained by the investigators for aircraft accident investigation purposes, the investigators shall coordinate with the party concerned (the protection of personal effects is usually the responsibility of the aircraft operator concerned in conjunction with the Police).

4. The IIC may also need to facilitate visits through the appropriate channels to the accident site by the families of the victims. However, it shall be noted that there will be occasions when visits to the accident site are impractical for accessibility reason. Visits to the site may also be restricted by the Police.

5. During visits to the accident site by the families of the victims, whether the investigators will be required to brief the families will have to be coordinated in advance. In the longer term, the investigators may also need to provide the families and the survivors through the appropriate channels from time to time with updates on the progress of the investigation. The investigators shall be circumspect as to the information to be given to the families.

6. Some families and survivors may consider that they should be entitled to listen to the cockpit voice recording and to have access to a transcript of the cockpit voice recording. Such requests shall not be acceded to as disclosure of cockpit voice recordings and transcripts is contrary to the international Standards in Annex 13 and to the provisions in Myanmar Aircraft Accident and Incident Investigation Rules.

7. To shield the IIC from a large number of direct inquiries, the IIC should if necessary arrange for an officer to be the liaison person for such inquiries.

8. The expectation of the accident victims or their families (e.g. dissemination of timely information) should be borne when communicating with them. The following actions may also have to be considered:

(a) To remind accident victims and their families that an investigation results in safety recommendations based on the causes, contributing factors and conclusions of the investigation, and that these safety recommendations are aimed at preventing a repetition of such a tragedy, not at determining any blame or liability.

(b) To reassure accident victims and their families that neither political bias nor cultural orientation nor economic considerations will affect the conclusions of the investigation.

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 16** | **: PUBLIC RELATIONS** |

1. Public relations will be handled by the Department of Civil Aviation (DCA). The AAIB and the investigator-in-charge (IIC) will support the information needs of the Department of Civil Aviation (DCA).

2. When the Crisis Management Team (CMT) is in operation following a major occurrence, the AAIB and the investigator-in-charge will support the public relations activity of the CMT through the Department of Civil Aviation (DCA).

**Release of information**

3. Examples of information that may be needed/ considered for release to the public are:

Initial (field investigation) phase

- Brief description of the accident
  - Aircraft's flight number, nationality and registration marks
  - History of the flight
  - Weather condition at the time of the accident, etc.
- Nature of the injuries sustained by the persons on board (especially the flight and cabin crew members)
- Damage sustained by the aircraft and other properties
- Completion of search and rescue operation
- Whether the CVR and FDR have been recovered
- Arrangement for the reading out of the CVR/FDR
- Size of the accident site
- Securing of the accident site
- Distribution of wreckage and debris pieces
- Aircraft's airworthiness
- Name of the investigator-in-charge appointed by the Chief investigators of Accidents
- Participants of the investigation team (number, nationality, agencies/ organisations/ companies)
- Organisation of the investigation team
- Progress of the investigation
- Updated factual information

Analysis phase

- Progress of the investigation
- Safety recommendations being contemplated
- Important milestones of investigation (e.g. follow-up meetings in particular areas of investigation)

Final phase

- Release of Final Report
- Safety recommendations made

**Handling of media by the AAIB**

4. As far as possible, all media enquiries received should be re-directed to the Department of Civil Aviation (DCA).

5. If making a statement by the AAIB is unavoidable, this should be made only by the investigator-in-charge or the Chief investigator.

6. In making a statement, NEVER say "No comment" and NEVER speculate. The following types of statement may be judiciously used, a applicable:

"We are currently in the data gathering stage."
"We are investigating all aspects."
"We will look into all the areas, for example, aircraft maintenance, flight operations, air traffic control, airport operations, weather, ..."
"We would like to appeal for eyewitnesses to come forward."
"I am sorry I cannot comment at this stage on whether ..."

**Visit of accident site**

7. From time to time, there may be requests for visit of the accident site by the media. Such requests will be coordinated by the Aviation Security section of DCA. The IIC will facilitate such requests. Where necessary, the IIC will specify a safety distance from the aircraft wreckage or debris.

**Public notification of investigation**

8. There may be times when information pertaining to the circumstances of an accident or incident needs to be sought from members of the public. A public notice that an investigation is taking place and to invite input from members of the public should be considered.

9. A sample public notice of investigation is given in **Appendix 1**.

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 16** | **: SAMPLE PUBLIC NOTICE OF INVESTIGATION** |
| **APPENDIX 1** | |

**NOTICE**

**CIVIL AIRCRAFT ACCIDENT INVESTIGATION**

Notice is hereby given, pursuant to Myanmar Aircraft Act and Myanmar Aircraft Accident and Incident Investigation Rules, that an investigation under the said Order is taking place into the circumstances and causes of the accident to [*aircraft type/model*], [*registration number*], which occurred [*at/near* _____] on [*date*].

Members of the public who have information which they believe may relate to the circumstances, causes or contributing factors of the accident are invited to write as soon as possible and preferably by [*date*] to:

Chief investigator of Accidents
Aircraft Accident Investigation Bureau (AAIB) of Myanmar
Ministry of Transport and Communications
Yangon Int'l Airport, Mingaladon Township
Yangon, Myanmar,11021

Date:

| | |
|---|---|
| **SECTION 5** | **: INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 17** | **: AIDE-MEMOIRE FOR INVESTIGATOR-IN-CHARGE** |

The aide-memoire below serves to assist the investigator-in-charge (IIC) in ensuring that the key tasks are not overlooked during the hectic moments following a major occurrence. This aide-memoire is not exhaustive and is not intended to be a detailed checklist of things-to-do, but a reminder of the major tasks.

1. Notification to other States and ICAO

2. Security of site

3. Setting up the Accident Investigation Command Centre (AICC)

4. Liaise with the rescue force commander

5. Survey of accident site for biological hazards

6. Gathering basic information about the occurrence as soon as possible

7. Linking up with accredited representatives

8. Getting the investigation groups organised

9. Investigation meetings and periodic briefing and debriefing of the investigation team

10. Recovery of CVR/ FDR/ QAR

11. Medical examination of crew members

12. Interview of crew members

13. Deploying an aeromedically trained investigators to liaise with the coroner

14. Activation of sea salvage company (e.g. SMIT, SEMCO) (for sea salvage)

15. Keep abreast of activities of the investigation groups and their findings

16. Updating the Chief investigator, the AICC and the Crisis Management Directorate

17. Assistance to victims and their families

18. Issuance of safety recommendations, if applicable

19. Preparation and issue of Preliminary Report (ADREP P) within 30 days

| | | |
|---|---|---|
| **SECTION 6** | **:** | **COORDINATION WITH CRISIS MANAGEMENT TEAM** |
| **CHAPTER 1** | **:** | **COORDINATION WITH DCA OF MYANMAR CRISIS MANAGEMENT GROUP** |

1. For aircraft accidents of a more serious nature (e.g. involving fatalities), DCA may set up a Crisis Management Group (CMG). The DCA OF Myanmar CMG will be located at the DCA OF Myanmar Crisis Management Centre. The CMG will assume the role of Crisis Manager. Ministry of Transport and Communications (MOTC) will be represented in the DCA OF Myanmar CMG.

2. MOTC may also set up a Transport Crisis Management Group (TCMG) that will be chaired by PS (MOTC).

3. The DCA OF Myanmar CMG will have the following groups:

- Coordination Group
- Information Management Group
- Accident Investigation Group
- Service Support Team

4. The Accident Investigation Command Centre (AICC) will serve as the investigator-in-charge's (IIC) link with the DCA OF Myanmar CMG. The AICC should liaise and coordinate with CMG's Accident Investigation Group on exchanges of accident information.

| | |
|---|---|
| **SECTION 6** | **: COORDINATION WITH CRISIS MANAGEMENT TEAM** |
| **CHAPTER 2** | **: FREQUENTLY ASKED QUESTIONS** |

The investigators should be aware of the questions that may be asked arising from an accident. Such questions provide a guide as to the facts that they can help gather for the purpose of dealing with the public or releasing information on the accident. The following is a list of possible FAQs.

First 10 key questions (after confirmation of the accident):

1. Which airline does the aircraft belong to? What was the flight number? What was the aircraft type? Age of the aircraft?
2. What time did the accident occur?
3. Where did the aircraft crash (exact location)? Could the exact position of the crash site be pin-pointed on a map? How deep is the water (for sea crash)?
4. Where was the aircraft heading?
5. What was the problem with the aircraft before the accident?
6. What was the number of passengers on board (POB)? Passengers' manifest? Breakdown of crew and passengers? Breakdown of passengers according to nationalities?
7. What is the number of fatalities? How many people survived?
8. Have the black boxes been found?
9. How was the weather condition at the time of the accident?
10. What was the cause of the accident?

Other possible questions:

11. Was the aircraft intact or broken into pieces?

12 Details of the pilots (e.g. age, experience, flying hours that they have clocked, medical status, etc.

13. What hospitals were the causalities sent to?
14. Were there any VIPs on board?
15. Was the aircraft carrying any dangerous goods?
16. Were there any radioactive substance on board?
17. Did the pilot alert the control tower before the accident?
18. When did the first rescue vehicle respond? When did the first ambulance arrive?
19. What equipment were used in the rescue operations?
20. What other agencies were involved in the rescue operations?
21. How many men were deployed for the rescue operations?
22. Who heads the rescue operations?
23. When was the last time the aircraft was checked? Results of the check available?
24. Is the Minister visiting the accident site?
25. Can the press visit the accident site?
26. A description of the damages to the aircraft.
27. Have the next-of-kins or relatives been notified? How can they get in touch with the airlines?
28. How is the aircraft being removed from the accident site?
29. When will the airport be reopened?

| | |
|---|---|
| **SECTION 7** | **: CUSTODY OF AIRCRAFT AND WRECKAGE** |
| **CHAPTER 1** | **: ACCESS TO AND REMOVAL OF AIRCRAFT** |

## 1. Custody of aircraft and wreckage

1.1 When an accident or serious incident has occurred, the aircraft, its parts, aircraft wreckage, or any contents of the aircraft will come under the custody of the AAIB.

## 2. Requests from other States

2.1 If a request is received from the State of Registry, the State of the Operator, the State of Design or the State of Manufacture that the aircraft, its contents, or any other evidence remain undisturbed pending inspection by an accredited representative of the requesting State, the IIC shall take all necessary steps to comply with the request, so far as this is reasonably practical and compatible with the proper conduct of the investigation, provided that the aircraft may be removed to the necessary extent as indicated in paragraph 3.3 below and provided that it does not result in undue delay in returning the aircraft to service where this is practicable.

## 3. Access to Aircraft

3.1 No person other than the Chief investigator, the AAIB investigator-in-charge, the AAIB investigators and officers or an authorised person shall have access to the aircraft involved in the accident or serious incident, the contents thereof or the site of the accident or serious incident.

3.2 No person shall move or interfere with the aircraft, its contents or the site of the accident or serious incident except under the authority of the Chief investigator, the Deputy Chief investigator of Accidents or the investigator-in-charge.

Note: “authorised person” means:

(a) any person authorised by the Chief investigator or the investigator-in-charge either generally or specifically to have access to any aircraft involved in an accident or a serious incident and includes any police officer or any officer of customs; and

(b) in relation to an accident involving a military aircraft belonging to the Myanmar Armed Forces, includes any person authorised by the Chief of Air Force.

3.3 Nevertheless, the aircraft involved in an accident or a serious incident may be removed or interfered with to such extent as may be necessary for all or any of the following purposes:

(a) extricating persons or animals;

(b) removing any mail, valuables or dangerous goods carried by the aircraft;

(c) preventing destruction by fire or other cause;

(d) preventing any danger or obstruction to the public, air navigation or to other transport; and if the aircraft is wrecked in water, the aircraft or any contents thereof may be removed to such extent as may be necessary for bringing the aircraft or its contents to a place of safety.

## 4. Removal of Aircraft

4.1 If the aircraft involved in the accident or serious incident is likely to be a danger or obstruction to the public, air navigation or to other transport, the Chief investigator or the investigator-in-charge (IIC) may order the owner, operator or hirer of such aircraft to remove it to such place as the Chief investigator or the IIC shall indicate.

4.2 In the absence of the owner, operator or hirer or when the owner, operator and hirer fail to comply with the order by the Chief investigator of Accidents or the IIC to remove the aircraft, the Chief investigator or the IIC shall be empowered to remove or cause the removal of the aircraft. The Chief investigator or the IIC will not be liable for any damage occurring to the aircraft during its removal.

*Note*: The removal of aircraft after an accident or incident at the airport will usually be handled by the Airport Operator.

## 5. Preservation of evidence

5.1 If there is a need to move the aircraft or pieces of the wreckage to another location before the completion of the field investigation, every effort to photograph the aircraft or wreckage should be made prior to disturbing the items.

*Note*: The moving of aircraft after an accident or incident at the airport to another location for continuation of the field investigation will usually be handled by the Airport Operator, with the AAIB providing direction.

## 6. Continued retention of parts by the AAIB

6.1 If any wreckage parts or aircraft equipment need to be removed from site and retained under the AAIB's custody, the owners of the parts or equipment should be informed and proper records should be kept.

## 7. Examination of aircraft and wreckage by other investigating authorities

7.1 Other investigating authorities in Myanmar (e.g. Coroner, Police, DCA OF Myanmar) may also need to examine the aircraft and wreckage for their own investigation purposes. The AAIB will facilitate such examinations.

7.2 If such an investigating authority needs to possess any part for its investigation, the AAIB will facilitate the "loaning" of the part. The authority shall be accountable for the safekeeping and condition of the part and shall return to the AAIB as soon as possible. Appropriate "loan" agreement shall be executed and proper records and photographic evidence shall be kept.

| | |
|---|---|
| **SECTION 7** | **: CUSTODY OF AIRCRAFT AND WRECKAGE** |
| **CHAPTER 2** | **: REMOVAL OF GOODS AND PASSENGER BAGGAGE** |

## 1. Authorisation for the removal of goods and passenger baggage

1.1 No person shall remove any goods or passenger baggage from the aircraft involved in an accident or serious incident in Myanmar, or to release any goods or passenger baggage from the custody of the Chief investigator of Accidents or the investigator-in-charge (IIC) without the concurrence of the Chief investigator or the IIC.

## 2. Supervision and clearance for the removal and customs clearance of goods and passenger baggage

2.1 Even when the Chief investigator or the IIC has authorised the removal of goods and passenger baggage, the removal of goods or passenger baggage will still be subject to the supervision of a police officer not below the rank of investigator of police.

2.2 Furthermore, the release of goods or passenger baggage from the custody of the Chief investigator or the IIC will still be subject to clearance by or with the consent of an officer of customs, if the aircraft has come from a place outside Myanmar.

2.3 After the Chief investigator or the IIC has given the necessary authorisation, it shall be the responsibility of the airline concerned to arrange with the Police and the ICA/Customs Department for the removal and customs clearance of goods and passenger baggage, etc. The IIC shall, if necessary, remind the airline concerned.

| | |
|---|---|
| **SECTION 7** | **: CUSTODY OF AIRCRAFT AND WRECKAGE** |
| **CHAPTER 3** | **: RELEASE OF AIRCRAFT AND WRECKAGE FROM AAIB'S CUSTODY** |

1. If the retention of the aircraft involved in an accident or incident, parts of the aircraft or aircraft wreckage, or any contents of the aircraft is no longer necessary for the purposes of an investigation, the Chief investigator of Accidents shall release custody of the aircraft, parts, wreckage or contents.

2. The aircraft, parts of the aircraft or aircraft wreckage, or any contents of the aircraft may be released to the following person or persons:

(a) if the aircraft is a Myanmar aircraft,

(i) the owner of the aircraft, parts, wreckage or contents;
(ii) where the owner is dead, his personal representative; or
(iii) a person authorised in writing by the owner or his personal representative to take custody on his behalf;

(b) in any other case, to the person or persons designated by the State of Registry or the State of the Operator, as the case may be.

3. To enable the person or persons concerned to take possession of the aircraft or aircraft wreckage, etc., the AAIB will facilitate access by such person or persons to the aircraft or aircraft wreckage, etc. If the aircraft or aircraft wreckage, etc., lies in an area for which it is impractical for such person or persons to be granted access, the AAIB will facilitate the removal of the aircraft or aircraft wreckage, etc., to a point where access can be given.

4. When releasing the aircraft or aircraft wreckage, etc., to the designated person or persons, a record shall be kept of the items released; and the recipients of the items shall be asked to acknowledge receipt by signing on the relevant record.

5. If a person to whom custody of the aircraft, parts, wreckage or contents is to be released refuses to take custody thereof or fails to take custody within a reasonable period, the aircraft, parts, wreckage or contents may be disposed of in such manner as the Chief investigator deems fit.

| | |
|---|---|
| **SECTION 8** | **: INVESTIGATION REPORT** |
| **CHAPTER 1** | **: PRELIMINARY REPORT** |

## 1. Issue of Preliminary Report

1.1 Basic factual and circumstantial information on an accident is usually available within the first two to four weeks of the investigation. A Preliminary Report using the ECCAIRS software shall be compiled for reporting such preliminary information to the ICAO.

1.2 The investigator-in-charge (IIC) shall, unless an Accident Data Report has already been sent, send the Preliminary Report within 30 days of the accident, to the ICAO States identified in paragraph 2.1 below if the accident involved:

(a) aircraft of a maximum certificated take-off mass of more than 2,250 kg; or

(b) aircraft of a maximum certificated take-off mass of 2,250 kg or less and when airworthiness or matters considered to be of interest to other ICAO States are involved.

*Note*: If an accident investigation can be completed and the Accident Data Report can be compiled within 30 days of the date of the accident, there is no need to send a Preliminary Report. In such cases, besides sending the Accident Data Report to the ICAO, the IIC shall also send the Accident Data Report to the ICAO States which normally would have received the Preliminary Report.

1.3 Preliminary Reports are not required to be completed for incidents.

## 2. Dissemination of Preliminary Report

2.1 The Preliminary Report shall be sent to the following parties:

- State that instituted the investigation
- State of Registry
- State of Occurrence
- State of the Operator
- State of Design
- State of Manufacture
- Any State that have provided relevant information, significant facilities or experts

- ICAO (email address: ADREP@icao.int), only in the case where the aircraft is of a maximum certificated take-off mass of more than 2,250 kg

## 3. Means of Dispatch

3.1 The Preliminary Report may be sent by fax, e-mail or airmail.

3.2 When matters directly affecting safety are involved, the Preliminary Report shall be sent as soon as the information is available and by the most suitable and quickest means possible.

## 4. Use of ECCAIRS

4.1 ICAO is recommending the use of the European Coordination Centre for Aviation Incident Reporting System (ECCAIRS) software package for the reporting of occurrences. The ECCAIRS reporting system is based on the ICAO ADREP standards, which can be used to collect, exchange, integrate and analyse aviation related accident and incident reports.

4.2 The AAIB is using ECCAIRS to send Preliminary Report to ICAO.

| | |
|---|---|
| **SECTION 8** | **: INVESTIGATION REPORT** |
| **CHAPTER 2** | **: DRAFTING OF THE FINAL REPORT** |

## 1. Draft Final Report

1.1 The investigator-in-charge (IIC) is responsible for drafting the Final Report. He shall send a copy of the Draft Final Report to the following States as soon as possible to invite their comments on the draft Final Report:

- State that instituted the investigation
- State of Registry
- State of Occurrence
- State of the Operator
- State of Design
- State of Manufacture
- State that participated in the investigation

1.2 The IIC may also send the Draft Final Report to the operator, through the State of the Operator, and to the organisations responsible for the type design and the final assembly of the aircraft, through the State of Design and the State of Manufacture, to enable the recipients to submit comments on the Draft Final Report, either through their respective States or to the IIC directly.

1.3 The IIC may also send the Draft Final Report to the persons whose reputation may be affected by the investigation report or to their next-of-kin if these persons are deceased.

1.4 The IIC will give the parties mentioned in paragraphs 1.1 to 1.3 above 60 days to comment on his Draft Final Report. (*Note*: The length of the comment period starts on the date on which the Draft Final Report is sent out.)

1.5 If comments are received from the States concerned within 60 days as requested, the IIC shall consider the comments and amend as necessary the Draft Final Report to include the substance of the comments received. If the IIC does not agree with a comment, he shall inform the State concerned, and if desired by that State, append the comment to the Final Report.

1.6 If no comments are received by the deadline set by the IIC and no extension of time has been requested and agreed upon, the IIC may proceed to finalise the Final Report and submit it to the Ministry of Transport for information.

1.7 When sending out the Draft Final Report for comments, the IIC shall remind the recipients in writing that they shall not circulate, publish, disclose or give access to the Draft Final Report without his express consent.

## 2. Format and contents of the Draft Final Report and Final Report

2.1 The Draft Final Report and the Final Report of the investigation into an occurrence should follow the ICAO format in **Appendix 1**. The format is to facilitate the presentation of the reports in a convenient and uniformed manner for easy reference by readers. However, the format may be adapted to the circumstances of the accident or incident.

2.2 The detailed format of the body of the Draft Final Report or the Final Report is given in **Appendix 2**.

2.3 Tips for the formulation of the statement of the causes are given in **Appendix 3**.

2.4 In preparing a Final Report or a Draft Final Report according to the above format, the following is to be noted:

(a) The Final Report and the Draft Final Report shall state that the sole objective of the investigation of an accident or incident shall be the prevention of accidents and incidents and it shall not be the purpose of this activity to apportion blame or liability.

(b) All information relevant to an understanding of the factual information, analysis and conclusions shall be included under each appropriate heading or sub-heading.

(c) Where information in respect of any of the items in the "Factual information" section is not available or is irrelevant to the circumstances leading to the accident, a note to this effect should be included under the appropriate sub-headings.

(d) Records listed in Annex 13 paragraph 5.12 of Annex 13 (see paragraph 5 of Section 10 Chapter 1 of this Handbook) shall be included in the Draft Final Report and the Final Report only if pertinent to the analysis of the accident or incident. Parts of the records not relevant to the analysis shall not be disclosed.

(e) The names of the persons involved in the accident or incident shall not be disclosed.

3. **Detail analysis of comments recorded of draft final report**

The detail analysis of comments recorded and the subsequent decision-making process is as follows;

- Draft Final Report sent to other States
- Other States provide comments
- IIC analyses comments

  extra factual?

  extra analysis?

  extra recommendation?
- Changes to final report?
- IIC to advise Head of AAIB
- AAIB to approve or not changes
- Amend the final report

| | |
|---|---|
| **SECTION 8** | **: INVESTIGATION REPORT** |
| **CHAPTER 2** | **: OVERALL FORMAT OF THE FINAL REPORT** |
| **APPENDIX 1** | |

The overall format of the Final Report (including Draft Final Report) is as follows:

**TITLE**

The Final Report begins with a title comprising:

Name of the operator
Manufacturer and model of the aircraft
Nationality and registration marks of the aircraft
Place and date of the accident

The following statement on the objective of the investigation as spelt out in Annex 13 shall also be incorporated:

"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"

**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
Organisation of the investigation
Authority releasing the report and date of publication
Brief summary of the circumstances leading to the accident

**BODY**

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

1. Factual information
2. Analysis
3. Conclusions
4. Safety recommendations
5. Safety action

Each heading may consist of a number of sub-headings as outlined further in **Appendix 2**.

**APPENDICES**

Materials and any other pertinent information considered necessary for the understanding of the report will be included as appropriate.

| | |
|---|---|
| **SECTION 8** | **: INVESTIGATION REPORT** |
| **CHAPTER 2** | **: DETAILED FORMAT OF THE BODY OF THE FINAL** |
| **APPENDIX 2** | **REPORT** |

The detailed format for the body of the Final Report (including Draft Final Report) is as follows:

## 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 of 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 the injuries sustained in the accident.

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 *Personal information*[1].

(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] The names of the persons involved in the accident or incident shall not be disclosed

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.

1.12 *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. Medical information related to flight crew licences should be included in 1.5 on Personal 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 *Organisational 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 limited to, organisational 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.

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 describe the results under the appropriate sub-headings 1.1 to 1.18.

## 2. ANALYSIS

Analyse, as appropriate, only the information documented in "1 Factual information" and which is relevant to the determination of conclusions and causes.

## 3. CONCLUSIONS

3.1 *Findings*. List the findings established in the investigation. Include the following preamble before listing the findings:
"From the evidence available, the following findings are made. These findings should not be read as apportioning blame or liability to any particular organisation or individual."

3.2 *Causes*. List the causes established in the investigation. Causes are those events which alone, or in combination with others, resulted in injuries and damage. A cause is an act, omission, condition or circumstance which if eliminated or avoided would have prevented the occurrence or would have mitigated the resulting injuries or damage. The list of causes should include both the immediate and the deeper systemic causes. See **Appendix 3** for tips on formulation of the statement of the causes.

3.3 *Contributing factors*. List the contributing factors established in the investigation.

## 4. SAFETY RECOMMENDATIONS

State any recommendations made for the purpose of accident prevention.

## 5. SAFETY ACTION

Identify safety actions already implemented.

| | |
|---|---|
| **SECTION 8** | **: INVESTIGATION REPORT** |
| **CHAPTER 2** | **: STATEMENT OF THE CAUSES** |
| **APPENDIX 3** | |

1. There are a number of ways to present the statement of the causes. The causes may be listed chronologically or they may be prioritised in terms of primary causes and contributing causes. Whichever way, the causes should be presented in a logical order, bearing in mind that all causes should be presented.

2. When we are certain of a cause, a definite statement should be used. If we are only reasonably sure of a cause, a qualifying word such as “probable” or “likely” should be used.

3. In lieu of a statement of the causes, the causes may be expressed under another heading, such as conclusions, significant findings, significant factors, causal factors or causal findings. This approach is particularly useful when systemic causal factors were involved.

4. When there is insufficient evidence to establish why an accident occurred, there should be no hesitation in stating that causes remain undetermined. The most likely scenario may be stated provided that a qualifier, such as “likely” or “probable”, is included. However, a list of possible causes should not be given.

5. The causes or significant failures or contributing/significant factors should be formulated with preventive action in mind and linked to appropriate safety recommendations. They should also be formulated in such a way which minimises as much as possible the implication of blame of liability. However, we should not refrain from reporting a cause merely because blame or liability might be inferred from the statement of that cause.

| | |
|---|---|
| **SECTION 8** | **: INVESTIGATION REPORT** |
| **CHAPTER 3** | **: TIMEFRAME FOR COMPLETION OF INVESTIGATION** |

1. ICAO recommends that, in the interest of accident prevention, the Final Report of an investigation should be released in the shortest possible time and, if possible, within 12 months.

2. However, it is noted from our own experience and the experience of the major investigation authorities that the 12 months timeframe for the completion of an investigation can be difficult to achieve, even if the case concerned is not complex. It may not always be possible for the investigator-in-charge (IIC) to dictate the pace of the investigation. He often has to depend on the cooperation and time availability of the parties involved. Thus, the reasons for needing more than 12 months for the investigation may include the following:

- Dependence on the parties involved to provide data, explanation, opinion, test results, feedback, inputs, etc.
- Difficulties for scheduling interviews (especially when the interviewees live overseas) and aircraft inspection (without demanding that the operator ground the aircraft just for this purpose).
- Difficulty in arranging for a time that is convenient to all the parties concerned for testing/inspection, discussion, meeting, analysis, testing, etc., especially when overseas parties are involved.
- Difficulty in arranging/contracting a test facility (especially one that is located overseas) to perform testing.
- New aircraft type/equipment/system being involved.
- New safety issues being unearthed (e.g. fuel icing, fuel explosion)
- Need for more thorough or more in-depth investigation as determined in the course of the investigation. For example, when evidence of fatigue is discovered, there would be a need to investigate into the causes of the fatigue (e.g. wear and tear, manufacturing defect).
- High quality of investigation wished by the investigators, necessitating more evidence collection effort , more discussions during the analysis stage of the investigation, more effort in the drafting of the investigation report and more intense vetting of the draft investigation report.

3. In view of the above, while the IIC will bear in mind ICAO's recommended investigation completion timeframe, a more realistic investigation timeframe will be as follows:

(a) General aviation
- No fatality - 12 months
- With fatality - 18 months

(b) Commercial transport
- Non-major - 18 months
- Major but no fatality - 24 months
- With fatality - 30 months

(c) Air traffic control
- Simple cases - 12 months
- More complicated cases - Refer to (a) and (b) above

4. The completion status of the investigation will be reviewed during the AAIB departmental meeting.

5. The following has to be noted if an investigation is targeted to take more than a year to complete:

(a) Safety recommendations can be made at any stage during the course of an investigation. They need not be made only at the completion of an investigation.

(b) During the first year of the investigation, the IIC shall prepare for release established factual information and indicate the progress of the investigation in a timely manner. Thereafter, the IIC shall make an interim statement publicly available on each anniversary of the occurrence, detailing the progress of the investigation and any safety issues raised.

| | |
|---|---|
| **SECTION 8** | **: INVESTIGATION REPORT** |
| **CHAPTER 4** | **: ACCIDENT DATA REPORT** |

1. When the Final Report of the investigation of an accident involving an aircraft of a maximum certificated take-off mass of more than 2,250 kg has been completed, an Accident Data Report shall be compiled using the ECCAIRS software.

2. The purpose of this Accident Data Report is to provide ICAO with accurate and complete information regarding the accident, including factors (causes) and safety recommendations.

3. The investigator-in-charge shall send the Accident Data Report to the ICAO (email address:ADREP@icao.int)

4. If an accident investigation can be completed and the Accident Data Report can be compiled within 30 days of the date of the accident, there is no need to send a Preliminary Report. In such cases, besides sending the Accident Data Report to the ICAO, the investigator-in-charge shall also send the Accident Data Report to the ICAO States which normally would have received the Preliminary Report.

5. If some of the information in the Preliminary Report was not correct or was incomplete, this should be reflected in the Accident Data Report in order for the ICAO to update the Preliminary Report information accordingly.

6. If an investigation is reopened, the information previously reported should be corrected by a new Accident Data Report.

7. Upon request, the AAIB will provide other States with pertinent information additional to that made available in the Accident Data Report.

8. The AAIB is using ECCAIRS to send Accident Data Report to ICAO.

| | |
|---|---|
| **SECTION 8** | **: INVESTIGATION REPORT** |
| **CHAPTER 5** | **: INCIDENT DATA REPORT** |

1. There is no obligation to conduct an investigation into an incident. However, if an incident is significant enough to warrant an investigation (e.g. in the case of a serious incident), and if the incident involves an aircraft of a maximum certificated take-off mass of more than 5,700 kg, then an Incident Data Report shall be compiled using the ECCAIRS software.

2. The investigator-in-charge shall send the Incident Data Report to the ICAO (email address: ADREP@icao.int) as soon as is practicable after the investigation.

*Note*: A copy of the Final Report of the investigation of the incident will also be sent to ICAO if the Final Report has been released.

3. If an investigation is reopened, the information previously reported should be corrected by a new Incident Data Report.

4. Upon request, the AAIB will provide other States with pertinent information additional to that made available in the Incident Data Report.

5. The AAIB is using ECCAIRS to send Incident Data Report to ICAO.

| | |
|---|---|
| **SECTION 8** | **: INVESTIGATION REPORT** |
| **CHAPTER 6** | **: RELEASE OF FINAL REPORT** |

## 1. Release of the Final report

1.1 When the investigator-in-charge (IIC) has completed the Final Report of an investigation of an accident or incident, he shall inform the Chief investigator of Accidents.

1.2 The IIC shall disseminate the Final Report with minimum delay to the following parties:

- State that instituted the investigation
- State of Registry
- State of Occurrence
- State of the Operator
- State of Design
- State of Manufacture
- State that has participated in the investigation
- States that have provided relevant information, significant facilities or experts
- States that have suffered fatalities or serious injuries to its citizens
- ICAO (email address ADREP@icao.int), only in the case where the aircraft is of a maximum certificated take-off mass of more than 5,700 kg
- The operator, directly or through the State of the Operator
- The organisations responsible for the type design and the final assembly of the aircraft, directly or through the State of Design and the State of Manufacture
- Persons whose reputation may be affected by the investigation report
- Next-of-kin (if applicable)

1.3 The Chief investigator shall make the Final Report publicly available by having it posted on the AAIB website as soon as possible.

## 2 . Interim statement or report

2.1 If the Final Report cannot be made publicly available within 12 months, the AAIB will release, during the first year of the investigation, established factual information and indicate the progress of the investigation in a timely manner and will make an interim statement publicly available on each anniversary of the occurrence, detailing the progress of the investigation and any safety issues raised.

2.2 If the State conducting the investigation does not make the Final Report or an interim statement publicly available within a reasonable timeframe, other States participating in the investigation are entitled to request in writing from the State conducting the investigation express consent to release a statement containing safety issues raised with such information as is available. If the State conducting the investigation gives express consent or does not reply to such a request within 30 days, the State making the request should release such a statement after coordinating with participating States.

| | |
|---|---|
| **SECTION 8** | **: INVESTIGATION REPORT** |
| **CHAPTER 7** | **: SAFETY RECOMMENDATIONS** |

## 1. Safety recommendation

1.1 A safety recommendation shall in no case create a presumption of blame or liability for an accident or incident.

## 2. Safety recommendations arising from a State investigation

2.1 The Chief investigator of Accidents or the investigator-in-charge (IIC) may recommend to ICAO and the relevant persons and authorities, including those in other Contracting States, any preventive action that the IIC considers necessary to be taken promptly to enhance aviation safety. The Chief investigator or the IIC may make the recommendations at any stage of the investigation. They do not need to wait till the completion of the investigation to make the safety recommendations. Intended safety recommendations shall also be included in the Draft Final Report.

2.2 The Chief investigator shall cause a safety recommendation to be communicated to the relevant person or authority in State. The IIC will be the person who will communicate the safety recommendation to the relevant person or authority in State.

2.3 The IIC will address the safety recommendations made to relevant persons and authorities in other Contracting States to the accident investigation authorities of the respective Contracting States. The IIC may address to these authorities as soon as the safety recommendations are made.

2.4 The IIC will address to ICAO the safety recommendations made to ICAO, including where ICAO documents are involved. The IIC may address to ICAO as soon as the safety recommendations are made.

Note: When Final Reports contain safety recommendations addressed to ICAO, these reports must be accompanied by a letter from the IIC outlining the specific action proposed.

2.5 The Chief investigator, the IIC and the AAIB do not have the power to enforce the safety recommendations. Nevertheless, the IIC will monitor the progress of the action taken in response to the safety recommendations and update the Secretary of the Recommendations Status Review Panel accordingly.

2.5.1 In respect of safety recommendations made to a person or authority in Myanmar, the person or authority concerned is required under Myanmar Aircraft Accident and Incident Investigation Rules to:

- take those recommendations into consideration and, where appropriate, act upon them;
- provide the Chief investigator with the full details of the measures, if any, that he or it has taken or proposed to take to implement the recommendations (including the schedule of implementation); or
- provide a full explanation as to why no measures will be taken to implement the recommendations.

2.5.2 In respect of safety recommendations made to a person or authority outside Myanmar, Chief investigator, the IIC or the AAIB will endeavour to obtain such information through the accident investigation authorities of the Contracting States concerned.

2.6 Precedence for the issuance of safety recommendations from an accident or incident investigation is given to the State conducting the investigation; however, in the interest of safety, other States participating in the investigation shall be entitled to issue safety recommendations after coordinating with the State conducting the investigation.

2.7 A State conducting the investigation or any other States issuing a safety recommendation shall implement procedures to record the responses to the safety recommendation issued.

2.8 A State that receives a safety recommendation shall implement procedures to monitor the progress of the action taken in response to that safety recommendation.

## 3. Safety Recommendation of Global Concern

3.1 Myanmar issuing a safety recommendation of global concern (SRGC) shall inform ICAO of the issuance of that recommendation and its responses in dated transmittal correspondence, even when the SRGC is not addressed to ICAO.

3.2 ICAO has established a system to make accessible, to all aviation stakeholders and the public, safety recommendations of global concern (SRGC) issued by States, as well as

the responses to the recommendations. ICAO requires States to inform ICAO of SRGCs as well as the responses to the SRGCs.

3.3 ICAO defines a SRGC as 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.

3.4 ICAO's criteria of SRGC are as follows:

- The deficiency underlying the recommendation is systemic and not solely a local issue.
- The probability of recurrence of the accident and the adverse consequences are high.
- The risk to persons, equipment and/or environment is high.
- The urgency for taking effective remedial safety action is high.
- There is a history of recurrence of the relevant deficiency.
- The deficiency underlying the recommendation constitutes a risk to the airworthiness, design, manufacture, maintenance, operation and/ or regulation of the involved aircraft type.
- The deficiency underlying the recommendation constitutes a risk to more than one aircraft type, to more than one operator, to more than one manufacturer and/or to more than one State.
- The mitigation of the risks associated with the deficiency will require coordinated efforts of more than one entity of the air transport industry, such as civil aviation authority(ies), manufacturer(s) and operator(s).

3.5 Examples of SRGC are given in **Appendix 1**.

3.6 In the course of an investigation, the IIC will have to assess if a safety recommendations issued constitutes a SRGC and, if so, to inform ICAO accordingly using the form shown in **Appendix 2**.

| | |
|---|---|
| **SECTION 8** | **: INVESTIGATION REPORT** |
| **CHAPTER 7** | **: EXAMPLES OF SAFETY RECOMMENDATION OF** |
| **APPENDIX 1** | **GLOBAL CONCERN** |

The following are examples of safety recommendation of global concern:

**Australia ATSB Safety Recommendation** to US FAA

B-747, water leak, Bangkok, 7 Jan 2008

The US FAA regulations and associated guidance material did not fully address the potential harm to flight safety posed by liquid contamination of electrical system units in transport category aircraft.

The ATSB considers that the risk of ongoing or emerging design, operation and maintenance issues with the potential to result in liquid contamination of electrical system units in transport category aircraft could be significantly reduced over time by improved regulatory guidance and oversight. For example, existing designs and processes should be monitored for continuing effectiveness while consideration of alternative design principles may be applied to new aircraft designs.

The ATSB recommends that the US FAA take safety action to address this safety issue.

**Brazil CENIPA Safety Recommendation** to the civil aviation regulatory agencies

B-737 / Embraer Legacy, mid-air collision, 29 Sep 2006

CENIPA recommends the civil aviation regulatory agencies to review their regulations concerning the man-machine interface in the aircraft flight control station and/or flight deck, in terms of the positioning of the instruments, warnings and alerts, so as to prevent that inadvertent interactions between the crewmembers and such devices affect the safety of the operation.

These revisions must be in accordance with the development of the requisites in progress in the aeronautical community, among them the Draft Rule § 25.1302 - Installed Systems and Equipment for Use by the Flight Crew, which includes aspects related to the interaction between the crewmembers and the positioning of the instruments, in order to prevent that eventual inadvertent actions affect the operation.

**Canada TSB Safety Recommendation** to the Department of Transport

Airbus A310, loss of rudder in-flight, 06 Mar 2005

The separation of the rudder from Air Transat Flight 961 and the damage found during the post-occurrence fleet inspections suggest that the current inspection programme for Airbus composite rudders may not be adequate to provide for the timely detection of defects. In addition, preliminary tests demonstrating that disbonds can grow due to altitude-related pressure differential suggest that increased attention is warranted to mitigate the risk of additional rudder structural failures. The consequences of a rudder separation include reduced directional control and possible separation of the vertical tail plane.

TSB recommends that the Department of Transport, in coordination with other involved regulatory authorities and industry, urgently develop and implement an inspection programme that will allow early and consistent detection of damage to the rudder assembly of aircraft equipped with part number A55471500 series rudders.

**France BEA Safety Recommendation** to the DGAC

Concord, Gonesse, France, in-flight fire, 25 July 2000

The investigation showed that a shock or a puncture could cause damage to a tank according to a process of transmission of energy from a projectile. Such indirect processes, though known about, are complex phenomena which had never been identified on civil aircraft. Equally, the ignition of the kerosene leak, the possible forward propagation of the flame, its retention and stabilisation occurred through complex phenomena, which are still not fully understood.

The BEA recommends that the DGAC, in liaison with the appropriate regulatory bodies, modify the regulatory certification requirements so as to take into account the risks of tank damage and the risk of ignition of fuel leaks.

**UK AAIB Safety Recommendation** to the US FAA

B 777, engine rollback, London, Heathrow, 17 January 2008

The UK AAIB recommends that the FAA and the EASA consider mandating design changes that are introduced as a result of recommendation 2009-028, developed to prevent ice from causing a restriction to the fuel flow at the fuel oil heat exchanger on Boeing 777 aircraft powered by Rolls-Royce Trent 800 engines.

**U.S. NTSB Safety Recommendation** to the US FAA

DHC-8-400 (Colgan Air), loss of control, 12 February 2009

NTSB recommends that FAA require 14 Code of Federal Regulations Part 121, 135, and 91K operators to review their standard operating procedures to verify that they are consistent with the flight crew monitoring techniques described in Advisory Circular (AC) 120-71A, "Standard Operating Procedures for Flight Deck Crewmembers" and to revise the procedures according to the AC guidance to promote effective monitoring if the procedures are found not to be consistent.

| | |
|---|---|
| **SECTION 8** | **: INVESTIGATION REPORT** |
| **CHAPTER 7**<br>**APPENDIX 2** | **: FORM FOR SUBMISSION OF SAFETY RECOMMENDATION OF GLOBAL CONCERN TO ICAO** |

**SAFETY RECOMMENDATION OF GLOBAL CONCERN (SRGC) — SUBMISSION FORM**

| | | |
|---|---|---|
| **AIRCRAFT** | Registration:<br>Manufacturer:<br>Model: | Operator: |
| **ACCIDENT** ☐<br>**INCIDENT** ☐<br>_____ ☐<br>(if other, please specify) | Date/local time:<br>Location:<br>City/State:<br>Country: | Investigation Authority:<br>Investigation #:<br>Classification: |
| **SRGC number:** | | **SRGC issued at:** (day/month/year) |

**Executive Summary**
(brief history of the occurrence or circumstances associated with the SRGC)

**Deficiency related to the SRGC**

**Safety Recommendation of Global Concern** (see Note below)

**Note:** Use additional sheets to submit the responses to the above SRGC. As per Annex 13, a State that receives safety recommendations shall inform the proposing State, within ninety days of the date of the transmittal correspondence, of the preventive action taken or under consideration, or the reasons why no action will be taken.

| | |
|---|---|
| **SECTION 9** | **: INVESTIGATION CONDUCTED BY ANOTHER STATE** |
| **CHAPTER 1** | **: RECEIPT OF NOTIFICATION OF OCCURRENCE** |

Upon receipt of a notification of an accident or incident to a Myanmar aircraft or an aircraft operated by a Myanmar operator outside Myanmar the Chief investigator shall do the following:

(a) Acknowledge receipt of the notification.

(b) Provide as soon as possible to the State that is investigating the accident or incident with any relevant information he has regarding the aircraft and flight crew involved in the accident or incident and if Myanmar is the State of the Operator, with details of any dangerous goods on board the aircraft.

- Go to the airline
- Ask are there any dangerous goods
- Get copies of dangerous goods manifest
- Forward to the state of occurrence

(c) Inform the State that is investigating the accident or incident whether or not an accredited representative will be appointed, and if an accredited representative is to be appointed, provide the names and contact details and the expected date of arrival of the accredited representative and his technical advisers. (*Note*: The accredited representative may not necessarily have to travel to the State of Occurrence.)

(d) Suggest to the State conducting the investigation to invite the operator to participate, if an accredited representative will not be appointed.

| | |
|---|---|
| **SECTION 9** | **: INVESTIGATION CONDUCTED BY ANOTHER STATE** |
| **CHAPTER 2** | **: APPOINTMENT OF ACCREDITED REPRESENTATIVE AND ADVISERS FROM MYANMAR** |

1. The Chief investigator of Accidents may appoint an accredited representative to participate in a foreign accident/incident investigation, and one or more advisers to assist the accredited representative, in the following cases:

(a) where Myanmar is the State of Registry, State of the Operator, State of Manufacture or State of Design of the aircraft involved in the accident or incident; or

(b) where Myanmar has, at the request of the State conducting the investigation, provided information, facilities or experts to the State in connection with the investigation.

2. In particular, in the case of an accident or a serious incident where Myanmar is the State of Registry, the State of the Operator, the State of Design or the State of Manufacture of the aircraft concerned, and when the State conducting the investigation specifically request participation by Myanmar, the Chief investigator will appoint an accredited representative to the investigation.

3. Where Myanmar is the State of Registry or the State of the Operator, the Chief investigator will appoint one or more advisers, proposed by the operator, to assist the accredited representative.

4. Where Myanmar is the State of Design or the State of Manufacture, the Chief investigator may appoint one or more advisers, proposed by the organisations responsible for the type design and the final assembly of the aircraft, to assist the accredited representatives.

5. If the accredited representative needs advisers to assist him, he may propose to the Chief investigator to consider the necessary appointment.

| | |
|---|---|
| **SECTION 9** | **: INVESTIGATION CONDUCTED BY ANOTHER STATE** |
| **CHAPTER 2** | **: SAMPLE PRESS RELEASE ON APPOINTMENT OF** |
| **APPENDIX 1** | **ACCREDITED REPRESENTATIVE AND ADVISERS** |

**SAMPLE PRESS RELEASE**

The Aircraft Accident Investigation Bureau of Myanmar of the Ministry of Transport and Communications has sent a team of specialists to assist in the investigation by [name of foreign investigation authority] of the accident at _____ on _____ involving an [ABC Airlines] [aircraft model] aircraft [e.g. during landing].

The team is led by _____, a senior AAIB investigator, who has been named Myanmar's Accredited Representative in accordance with the procedures of the International Civil Aviation Organisation. Mr. _____ is joined by AAIB specialists in [e.g. aircraft engines, aircraft systems, flight operations and survival factors], plus [an] investigator(s) from [the Civil Aviation Authority of Myanmar, ABC Airlines, etc.].

All information on the progress of the investigation will be released by the [name of foreign investigation authority].

| | |
|---|---|
| **SECTION 9** | **: INVESTIGATION CONDUCTED BY ANOTHER STATE** |
| **CHAPTER 3** | **: TASKS OF MYANMAR'S ACCREDITED REPRESENTATIVE** |

## 1. General

1.1 The accredited representative shall bear in mind that he is a representative of the government of Myanmar.

1.2 The accredited representative shall ensure that he and his advisers act professionally.

1.3 The accredited representative and his advisers:

(a) will provide the State conducting the investigation with all relevant information available; and
(b) shall not divulge information on the progress and the findings of the investigation without the express consent of the State conducting the investigation

## 2. Entitlement of accredited representative and advisers

2.1 The accredited representative is entitled to participate in all aspects of the investigation, under the control of the investigator-in-charge of the State conducting the investigation, in particular to:

- Visit the scene of the accident
- Examine the wreckage
- Obtain witness information and suggest areas of questioning
- Have full access to all relevant evidence as soon as possible
- Receive copies of all pertinent documents
- Participate in readouts of recorded media
- Participate in off-scene investigative activities such as component examinations, technical briefings, tests and simulations
- Participate in investigation progress meetings including deliberations related to analysis, findings, causes and safety recommendations
- Make submissions in respect of the various elements of the investigation

2.2 Advisers assisting the accredited representative are permitted, under the accredited representative's supervision, to participate in the investigation to the extent necessary to enable the accredited representative to make his participation effective.

2.3 However, our participation other than as the State of Registry, the State of the Operator, the State of Design and the State of Manufacture may be limited to those matters which entitled Myanmar to participate.

## 3. Tasks of the accredited representative

3.1 The key tasks of the accredited representative are as follows:

- To request, if necessary, the State of Occurrence to keep the aircraft, its contents, and any other evidence undisturbed pending his arrival and inspection.
- To coordinate with the parties concerned in Myanmar regarding participation of their personnel in the foreign investigation.
- To keep the Accident Investigation Command Centre, if set up, informed of the progress of the field investigation.
- To request for factual data concerning the accident from the State conducting the investigation.
- To coordinate with the parties concerned in Myanmar and provide input and suggestions to the State conducting the investigation.
- To conduct his own analyses basing on the factual data collected.
- To request, where necessary, for progress meetings and analysis discussions with the State conducting the investigation.
- To ensure his advisers are aware of the non-disclosure protocol as per paragraph 1.3(b).
- To disseminate the draft Final Report from the State conducting the investigation to the parties concerned in Myanmar and invite their official comments and to conduct, if necessary, review meetings with these parties as soon as possible.
- To reply to the State conducting the investigation with comments on the draft Final Report, if any, within the deadline given.
- To request, if necessary, for an extension of the deadline to provide comments on the draft Final Report.
- To disseminate the Final Report from the State conducting the investigation to the parties concerned in Myanmar and to highlight the safety recommendations addressed to them, if any.

- To require the parties in Myanmar to whom safety recommendations have been made by the State conducting the investigation in the Final Report to inform him of the preventive action taken or under consideration or the reasons why no action will be taken.
- To inform the Myanmar conducting the investigation of the follow-up action taken by the parties concerned in Myanmar or the reasons why no action will be taken by these parties.

| | |
|---|---|
| **SECTION 9** | **: INVESTIGATION CONDUCTED BY ANOTHER STATE** |
| **CHAPTER 4** | **: POWERS OF MYANMAR'S ACCREDITED REPRESENTATIVES AND ADVISERS** |

1. The accredited representative may, for the purposes of the investigation in which he is participating, exercise all or any of the rights and powers specified in paragraph 1 of Chapter 3 of Section 5 of this Handbook in respect of any aircraft, records, information, documents, objects, witnesses or other evidence in Myanmar or held by any person in Myanmar which or whom the accredited representative considers to be relevant or necessary to the investigation.

2. An advisor shall have the same access rights and powers as the accredited representative, but only to the extent specified by the Chief investigator of Accidents.

| | |
|---|---|
| **SECTION 9** | **: INVESTIGATION CONDUCTED BY ANOTHER STATE** |
| **CHAPTER 5** | **: ACTIONS AT THE ACCIDENT INVESTIGATION COMMAND CENTRE** |

## 1. Setting up of the Accident Investigation Command Centre

1.1 If directed by the Chief investigator of Accidents, an AICC will be set up at the AAIB office.

1.2 The AICC will arrange for an adequate number of telephone and facsimile lines.

## 2. Tasks of the AICC

2.1 The AICC will maintain links with the accredited representative and his team of advisers.

2.2 The AICC also provide the necessary support, in particular:

- To recall the other AAIB investigators.
- To arrange for the security of the AICC, where necessary.
- To keep an event log.
- To monitor accident casualty information.
- To coordinate with the Myanmar operator involved in the accident.
- To request for external assistance, as necessary (e.g. from local agencies and aerospace organisations).
- To liaise with other organisations as necessary.
- To provide other facilities and logistics support, etc., as necessary
- To assist in making travel arrangement for the AAIB investigators.
- To prepare any necessary information, updates, etc., to the MOTC.
- To draft any necessary press release.

| | |
|---|---|
| **SECTION 9** | **: INVESTIGATION CONDUCTED BY ANOTHER STATE** |
| **CHAPTER 6** | **: FOREIGN ACCIDENTS INVOLVING FATALITIES OR SERIOUS INJURIES TO MYANMAR CITIZENS** |

## 1. Appointment of expert

1.1 Where Myanmar is not the State of Registry, the State of the Operator, the State of Design or the State of Manufacture, and its citizens have suffered fatalities or serious injuries in a foreign accident, the Minister may appoint an expert to participate in the foreign investigation.

1.2 The Chief investigator of Accidents may recommend a person for Minister's consideration of appointment as an expert to participate in the foreign investigation.

1.3 If the expert is not an AAIB investigator, the Chief investigator of Accidents will arrange for him to be briefed accordingly.

## 2. Entitlement of the expert

2.1 The Myanmar expert is entitled to:

- visit the scene of the accident;
- 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
- receive a copy of the Final Report.

2.2 The Myanmar expert is not precluded from also assisting in the identification of victims and in meetings with Myanmar's survivors.

| | | |
|---|---|---|
| **SECTION 9** | **:** | **INVESTIGATION REPORT** |
| **CHAPTER 7** | **:** | **SAFETY RECOMMENDATIONS BY ANOTHER CONTRACTING STATE** |

1. **Safety recommendation**

1.1 A safety recommendation shall in no case create a presumption of blame or liability for an accident or incident.

2. **Safety recommendations by another Contracting State**

2.1 Where any safety recommendation has been forwarded to Myanmar by another Contracting State, the Chief investigator shall cause the safety recommendation to be communicated to the relevant person or authority in Myanmar. If a Myanmar accredited representative has been appointed for the related investigation by the Contracting State, he will be the person who will communicate the safety recommendation to the relevant person or authority in Myanmar.

2.2 The person who communicated the safety recommendation to the relevant person or authority in Myanmar will monitor the progress of the action taken in response to the safety recommendations and update the Secretary of the Recommendations Status Review Panel accordingly.

2.3 The Chief investigator shall notify the Contracting State that has forwarded the safety recommendation to Myanmar, within 90 days of the date of the transmittal correspondence, of the preventive action taken or under consideration by the relevant person or authority in Myanmar or the reasons as to why no action will be taken by them.

| **SECTION 10 : DISCLOSURE AND DISPOSAL OF RECORDS** |
|---|
| **CHAPTER 1 : DISCLOSURE OF RECORDS AND INFORMATION** |

1. The accredited representatives from the various States and their advisors taking part in an investigation conducted by the AAIB, as well as the experts who participate by virtue of their States having suffered fatalities, are not allowed to disclose any information on the progress and findings of the investigation without the express consent in writing of the investigator-in-charge (IIC).

2. Likewise, when our investigators are taking part in an investigation conducted by another State, they must not disclose information on the progress of the investigation and findings without the written consent of the IIC concerned. They must also help ensure that non-AAIB personnel taking part in the investigation as advisors to our accredited representative do not disclose such information without proper authorisation.

3. Also, States have an obligation not to circulate, publish or give access to a draft report or any part thereof, or any documents obtained during an investigation of an accident or incident without the express consent of the AAIB, unless such reports or documents have already been published or released by the AAIB.

4. The names of the persons involved in the accident or incident shall not be disclosed to the public by the AAIB.

5. No person is allowed to disclose or make available to any other person any of the following records for any purpose other than an investigation carried out under this Order unless the High Court determines that the benefits resulting from disclosure outweighs the adverse domestic and international impact the disclosure may have on that or any future investigation:

(a) any statement taken from persons in the course of an investigation;
(b) any communication between persons having been involved in the operation of the aircraft;
(c) any medical or private information regarding persons involved in the accident or incident;
(d) any cockpit voice recording and transcript from such recording;
(e) any ATS recording and transcript from such recording;

(f) any cockpit airborne image recording and any part or transcript from such recording;

(g) any opinion expressed in the analysis of information, including flight recorder information.

(h) the draft Final Report of an accident or incident investigation

6. Accordingly, a record referred to in paragraph 5(a)-(h) above may be included in a Final Report or its appendices, or in any other report only when it is relevant to the analysis of the accident or incident. Such parts of the record which are not relevant to the analysis of the accident or incident shall not be included in the Final Report.

7. States shall ensure that requests for records in the custody or control of the accident investigation authority are directed to the original source of the information, where available.

| **SECTION 10 : DISCLOSURE AND DISPOSAL OF RECORDS** |
|---|
| **CHAPTER 2 : DISPOSAL OF RECORDS** |

1. The Chief investigator and an investigator-in-charge are not required to hold aircraft records or factual information concerning an accident or incident beyond such time as is necessary for the completion of the investigation and reports.

2. The records and information referred to in paragraph 1 include:
   (a) photographs;
   (b) written statements; and
   (c) documents pertaining to the accident or incident, the circumstances of the accident or incident, or the aircraft or personnel involved.

3. Such records shall be returned to the persons from whom they were obtained and if not claimed by such persons after a reasonable period, may be disposed of in any manner that the Chief investigator deems fit.

| **SECTION 11 : EXPENSES AND LIABILITY** |
| --- |
| **CHAPTER 1 : INVESTIGATION EXPENSES** |

Any expenses incurred by reason of anything done by the investigator-in-charge or the persons designated to assist him in exercise of any access rights or powers for the purposes of the investigation shall be borne by the owner or operator of the aircraft and be recoverable from either or both of them.

| **SECTION 11 : EXPENSES AND LIABILITY** |
| --- |
| **CHAPTER 2 : EXPENSES FOR REMOVAL OF AIRCRAFT** |

1. Any expenses incurred in removing the accident aircraft shall be borne by the owner, operator or hirer of the aircraft.

2. Where the aircraft is removed by the Chief investigator of Accidents or the investigator-in-charge (IIC) either because of the absence of the owner, operator or hirer of the aircraft, or because of failure by the owner, operator or hirer to comply with the order by the Chief investigator of Accidents or the IIC to remove the aircraft, the expenses incurred in removing the aircraft by the Chief investigator of Accidents or the IIC shall be recoverable from the owner, operator or hirer of the aircraft or all of them.

| | |
|---|---|
| **SECTION 11** | **: EXPENSES AND LIABILITY** |
| **CHAPTER 3** | **: EXPENSES FOR DISPOSAL OF AIRCRAFT AND WRECKAGE** |

1. Any expenses incurred in disposing the accident/incident aircraft, parts, wreckage or contents shall be borne by the owner or operator of the aircraft.

2. If a person to whom custody of the aircraft, parts, wreckage or contents is to be released refuses to take custody thereof or fails to take custody within a reasonable period, the Chief investigator may dispose of the aircraft, parts, wreckage or contents in such manner as he deems fit.

3. The expenses incurred by the Chief investigator in disposing of the aircraft, parts, wreckage or contents shall be recoverable from the owner or operator of the aircraft or both.

| **SECTION 11 : EXPENSES AND LIABILITY** |
| --- |
| **CHAPTER 4 : LIABILITY** |

1. For an accident/ incident in Myanmar the Chief investigator of Accidents and the investigator-in-charge (IIC) will not be liable for any damage done to the accident/incident aircraft during its removal by the Chief investigator of Accidents or the IIC either because of the absence of the owner, operator or hirer of the aircraft, or because of failure by the owner, operator or hirer to comply with the order by the Chief investigator of Accidents or the IIC to remove the aircraft.

2. Similarly, the Chief investigator of Accidents, the IIC, the Investigators assisting the IIC, the Myanmar accredited representative and any of their advisors will also not be liable for any damage done to the accident/incident aircraft (for accident/incident in Myanmar in the course of the investigation, or to any other aircraft or object or evidence required by them in the course of the investigation, where there has been no negligence on their part.

3. Nevertheless, investigators are reminded to exercise due care and to minimise damage to any aircraft or object or evidence in the course of the investigation.

| | |
|---|---|
| **SECTION 12** | **: REOPENING OF INVESTIGATION CONDUCTED BY AAIB** |
| **CHAPTER 1** | **: REOPENING OF INVESTIGATION** |

## 1. Reopening of investigation into an accident or a serious incident

1.1 Only Union Minister has the power to reopen an AAIB investigation into an accident or a serious incident. If evidence has been disclosed after the completion of the investigation which, in his opinion, is new and significant, the Union Minister will be obliged to cause a reopening of the investigation.

## 2. Reopening of investigation of an incident other than a serious incident

2.1 The Chief investigator of Accidents has the power to reopen an AAIB investigation into an incident other than a serious incident. If evidence has been disclosed after the completion of the investigation which, in his opinion, is new and significant, the Chief investigator of Accidents may cause a reopening of the investigation.

| **SECTION 13 : OFFENCES** |
| --- |
| **CHAPTER 1 : OFFENCES** |

1. Any person who contravenes Myanmar Aircraft Act and Myanmar Aircraft Accident and Incident Investigation Rules shall be guilty of an offence:

2. Such person will be liable on conviction to a fine of cancellation, suspension, endorsement or surrender of any license or certificated issued and imprisonment for a term not exceeding 3 months or not exceeding Kyats 50,000 or both.

| **SECTION 14 : LISTS OF CONTACTS** |
|---|
| **CHAPTER 1 : LOCAL ORGANISATIONS** |

| | |
|---|---|
| U Aung Kyaw Tun<br>Director General<br>Department of Civil Aviation | 017533007,<br>017533015,09955158073,095158073 |
| U Kyaw Soe<br>Deputy Director General<br>Department of Civil Aviation | 017533001, 095015001 |
| U Soe Paing<br>General Manager<br>(ANSD) | 017533008,095011703 |
| U Tin Maung Ni<br>Director<br>Admin and Planning | 017533006, 017533009,<br>095034955 |
| U Zaw Min<br>Director<br>Aerodrome Standard s and Safety<br>Division | 017533002, 017533013, 095302236 |
| U Tin Maung Htwe<br>Director<br>Airworthiness Division | 017533003,09795458987 |

U Yan Aung Oo
Deputy Director
Flight Standard Division
017533004, 095123468

U Ye Kyaw
Director
Aviation Security Division
017533011, 095183757

U Win Maw
Director
CNS Division
017533020, 09250183029

U Thein Naing
Director
Air Navigation and Surveillance Division
017533008, 0931785470

U Ne Win
Director
Air Transport Division
017533010, 09420040031

U Myint Htay
Director
Yangon Airport Committee
017533070, 092059679

| | |
|---|---|
| U Wanna<br>Deputy Director<br>Naypyitaw Airport Committee | 095360780 |
| Mandalay OCC | 024027019, Fax.024027018 |
| U Tun Lin Aung<br>Assistant Director<br>Mandalay Airport Committee | 0227023, 092059679 |
| U Sein Thaung<br>Deputy President<br>YACL | 095006016 |
| U Myo Min<br>Assistant General Manager<br>Naypyitaw Airport | 09420778779, 096706104 |
| U Tun Wai<br>Deputy Director<br>Naypyitaw Tower | 0678109045, 09250966041 |
| U Ye Htin Maw<br>Deputy Director<br>Yangon Tower | 017533040, 09421090408 |

U Myo Min Oo 067411040, 0949234991

Assistant Permanent Secretary Fax-067411472

**Meteorological Services Division**

U Win Maw 017533046, 09250954659

Deputy Director

Tower Building

| | |
|---|---|
| **SECTION 14** | **: LISTS OF CONTACTS** |
| **CHAPTER 2** | **: OTHER INVESTIGATION AUTHORITIES** |

1. The table below lists the addresses and contact numbers of the investigation authorities of the ASEAN countries and some major aviation nations. The information is based on ICAO's Flight Safety Information Exchange (FSIX) website (www.icao.int/en/AIA/default.aspx) and on AAIB's contacts with theses authorities.

2. For States not included in the table below, please refer to the FSIX website.

**AUSTRALIA**

Australian Transport Safety Bureau
P O Box 967, Civic Square
Canberra A.C.T. 2608
Australia

Tel: (61) 2 6257 4150 (24 hrs)
Fax: (61) 2 6274 6434
E-mail: atsbasir@atsb.gov.au

**BRAZIL**

Centro de Investigação e Prevenção de Accidentes Aeronauticos - CENIPA
SHIS - QI 05 - Área Especial 12
LAGO SUL
Brasilia - DF - CEP 71615-600
Brazil

Tel: (55) 61 3365 1008
(55) 61 3364 8800
Fax: (55) 61 3365 1004
E-mail: notifica@cenipa.aer.mil.br

**BRUNEI DARUSSALAM**

Department of Civil Aviation
Ministry of Communications
Brunei International Airport
Bandar Seri Begawan BB2513
Brunei Darussalam

Tel: (673) 2 330 142
Fax: (673) 2 331 706
E-mail: dca@pso.brunet.bn

**CAMBODIA**

State Secretariat of Civil Aviation
62 Preah Norodom Boulevard
Phnom Penh
Cambodia

Tel: (855) 12 810 330
(855) 12 878 192
(855) 12 456 443 (24 hrs)
Fax: (855) 23 223 511

**CANADA**

Transportation Safety Board of Canada
200 Promenade du Portage
Place du Centre, 4th Floor
Hull, Quebec
Canada K1A 1K8

Tel: (1) 819 994 4252
(1) 819 997 7887 (24 hrs)
Fax: (1) 819 953 9586
E-mail:airops@tsb.gc.ca

**CHINA**

Office of Aviation Safety
Civil Aviation Administration of China
155 Dongsi Street West
Beijing 100710
China

Tel: (86) 10 6409 1908
(86) 10 6401 2907 (24 hrs)
Fax: (86) 10 6405-2829
E-mail: yf_mao@caac.gov.cn

Aviation Safety Office
East China Administration of CAAC
Hongqiao International Airport
Shanghai, 200335
China

Tel: (86) 21 6268 4101
(86) 1391 666 1870 (24 hrs)
Fax: (86) 21 3216 0050

| | |
|---|---|
| Aviation Safety Office | Tel: (86) 28 8570 2495 |
| Southwest China Administration of CAAC | (86) 1398 060 9004 (24 hrs) |
| Chengdu | Fax: (86) 28 8570 4095 |
| China | |

**FRANCE**

| | |
|---|---|
| Bureau d'Enquêtes et d'Analyses pour | Tel: (33) 1 49 92 72 00 |
| la sécurité de l'aviation civile | (33) 1 48 35 86 54 (24 hrs) |
| Bâtiment 153 | Fax: (33) 1 49 92 72 03 |
| Aéroport du Bourget | E-mail:permanence@bea-org.fr |
| 93352 Le Bourget Cedex | |
| France | |

**GERMANY**

| | |
|---|---|
| Federal Bureau of Aircraft Accidents Investigation | Tel: (49) 531-35480 |
| | Fax: (49) 531-3548246 |
| Hermann-Blenk-Strass 16 | E-mail: box@bfu-web.de |
| 38108 Braunschweig | |
| Germany | |

**HONG KONG**

| | |
|---|---|
| Civil Aviation Department | Tel: (852) 2910-6821 (24 hrs) |
| 1 Tung Fai Road | Fax: (852) 2910-1177 (24 hrs) |
| Lantau | E-mail: aid@cad.gov.hk |
| Hong Kong | |

**INDIA**

Office of the Director General of Civil Aviation

DGCA Complex

Opposite Safdarjung Airport

New Delhi 110003

India

Tel: (91) 11 24620272

(Mon-Fri, 0930-1800 hrs)

(91) 11 24640892

(Sat/Sun weekday after hours)

Fax: (91) 11 24633140

E-mail: das@dgca.nic.in

**INDONESIA**

National Transportation SafetyCommittee

Ministry of Transportation

GedungPerhubungan Lt. 3

Jalan Medan Merdeka Timur No.5

Jakarta 10110

Indonesia

Tel: (62) 21 351 7606

(62) 21 381 1308 Ext 1497

Fax: (62) 21 351 7606

E-mail: knkt@dephub.go.id

**JAPAN**

Japan Transport Safety Board

Ministry of Land, Infrastructure, Transport and Tourism

Kasumigaseki 2-1-2, Chiyoda-ku

Tokyo 100-8918

Japan

Tel: (81) 3 5253 8814

(81) 90 1049 8728 / 8729 (24 hrs)

Fax: (81) 3 5253 1677

E-mail: jtsb_international@mlit.go.jp

**LAO PEOPLE'S DEMOCRATIC REPUBLIC**

Department of Civil Aviation
Wattay International Airport
P O Box 119
Vientiane
Lao People's Democratic Republic

Tel: (856) 21 512161 / 512163
Fax: (856) 21 520237 / 512044
E-mail: laodca@laotel.com

**MALAYSIA**

Chief investigator of Air Accidents
Ministry of Transport
Department of Civil Aviation
Level 1 - 4, Podium Block
27, Persiaran Perdana, Precinct 4
Federal Government Administrative Centre
62618 Putrajaya
Malaysia

Tel: (60) 3 8871 4000
Fax: (60) 3 8871 4069

**MYANMAR**

Aircraft Accident Investigation Bureau (AAIB),Ministry of Transport and Communications
Room No. (7,8,9,10), First Floor,
Three Storeyed Building, Department of Civil Aviation
Yangon International Airport
Mingaladon
Yangon 11021
Myanmar

Tel: (95) 1 7533162
Fax: (95) 1 7533016
E-mail:aungmaw23@gmail.com
aungmaw@dcamyanmar.aero

**NETHERLANDS**

Dutch Safety Board

P O Box 95404

2509 CK The Hague

The Netherlands

Tel: (31) 70 333 7000

(31) 70 333 7072 (24 hrs)

(31) 800 6353 688 (24 hrs)

Fax: (31) 70 333 7077

E-mail: aviation@safetyboard.nl

**NEW ZEALAND**

Transport Accident Investigation Commission

11 Cigna House

40 Mercer Street

P O Box 10-323

Wellington 6143

New Zealand

Tel: (64) 4 473 3112

(64) 4 473 0199 (24 hrs)

Fax: (64) 4 499 1510

E-mail:inquiries@taic.org.nz

**PHILIPPINES**

Aircraft Accident Investigation and Inquiry Board

Civil Aviation Authority of the Philippines

MIA Road

Pasay City 1301

Metro Manila

Republic of the Philippines

Tel: (63) 2 879 9110 / 2 / 3 (OPCEN)

Fax: (63) 2 834 0143 / 831 6215

E-mail: orcc_caap@yahoo.com.ph

**REPUBLIC OF KOREA**

Aviation & Railway Accident Investigation Board

Ministry of Land, Transport and Maritime Affairs

281, Gonghang-Dong, Gangseo-gu

Seoul 157-815

Republic of Korea

Tel: (82) 2 6096 1030

(82) 2 6096 1000 (24 hrs)

Fax: (82) 2 6096 1031

E-mail:araib@korea.kr

**RUSSIA**

InterState Aviation Committee

Air Accident Investigation Commission

22/2/1, BolshayaOrdynka St

119017 Moscow

Russia

Tel: +7 (495) 951 1686

Fax: +7 (495) 953 1145

E-mail: morozov@mak.ru

**TAIWAN**

Aviation Safety Council

11F, No. 200, Sec 3, Beisin Road

Sindian City

Taipei County 231

Taiwan

Tel: (886) 2 8912-7388

(886) 9 3562-8217

(Duty Officer)

Fax: (886) 2 8912 7399

**UNITED KINGDOM**

| | |
|---|---|
| Air Accidents Investigation Branch | Tel: (44) 1 252 510300 |
| Department of Transport | (44) 171 890 5999 |
| Farnborough House | (after office hours) |
| Berkshire Copse Road | (44) 1252 512299 (accident line) |
| Aldershot, Hants GU11 2HH | Fax: (44) 1 252 376999 |
| United Kingdom | E-mail:investigations@AAIB.gov.uk |

**UNITED STATES**

| | |
|---|---|
| National Transportation Safety Board | Communications Centre |
| 490 L'Enfant Plaza East, S.W. | Tel: (1) 202 314 6290 (24 hrs) |
| Washington, D.C. 20594 | Fax: (1) 202 314 6293 |
| United States | E-mail: cc@ntsb.gov |

**VIETNAM**

| | |
|---|---|
| Civil Aviation Administration | Tel: (84) 4 827 3384 |
| 119 Nguyen Son, Long Bien | (84) 4 827 1992 (24 hrs) |
| Gia Lam Airport | (84) 9128 19130 (mobile) |
| Hanoi | Fax: (84) 4 827 1913 |
| Viet Nam | (84) 4 873 2291 (24 hrs) |
| | E-mail: hmtan@caa.gov.vn |

| | |
|---|---|
| **SECTION 15** | **: REFERENCES** |
| **CHAPTER 1** | **: SOURCES OF TECHNICAL INFORMATION** |

Listed below are useful materials that all Investigators of Accidents should familiarise themselves with:

- ICAO Annex 13, 11th Edition, July 2016, Amendment 18 (applicable November 2020)
- ICAO Manual of Aircraft Accident and Incident Investigation (Doc 9756)
- ICAO Manual of Aircraft Accident Investigation (Doc 6920, which is replaced by Doc 9756)
- ICAO Accident Prevention Manual (Doc 9422)
- ICAO Accident/Incident Report Manual (ADREP Manual), 2nd Edition, 1987 (Doc 9156)
- ICAO Manual of Civil Aviation Medicine (Doc 8984)
- ICAO Human Factors Training Manual (Doc 9683)
- ICAO Human Factors Digests
- ICAO Safety Management Manual (Doc 9859)
- ICAO Manual on Accident and Incident Investigation Policies and Procedures (Doc 9962)
- ICAO Policy on Assistance to Aircraft Accident Victims and their Families (Doc 9998)
- ICAO Manual on Assistance to Aircraft Accident Victims and their Families (Doc 9973)
- ICAO Technical Instruction for the Safe Transport of Dangerous Goods by Air (Doc 9284)
- IATA Dangerous Goods Regulations
- ICAO Circular on Hazards at Aircraft Accident Sites (Circular No. 315)
- ICAO Emergency Response Guidance for Aircraft Accidents involving Dangerous Goods (Doc 9481)