



Civil Aviation Authority of Sri Lanka

ACCIDENT INVESTIGATION UNIT POLICY MANUAL

1ST EDITION – 2010

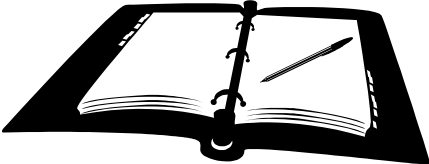



Issued by Civil Aviation Authority of Sri Lanka




CIVIL AVIATION AUTHORITY OF SRI LANKA

ACCIDENT INVESTIGATION UNIT

LIST OF GUIDANCE MATERIAL ISSUED BY THE ACCIDENT INVESTIGATION UNIT

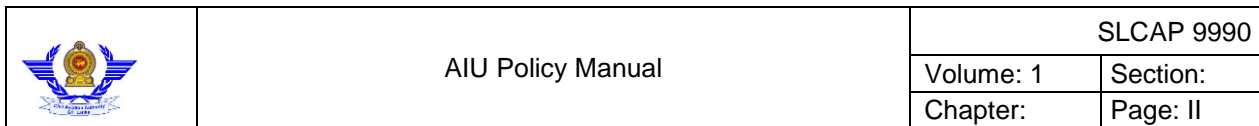
		
<p>AIU POLICY MANUAL (SLCAP 9990)</p>		<p>AIRCRAFT ACCIDENT INVESTIGATION PROCEDURE MANUAL (SLCAP 9999)</p>
		
<p>AIRCRAFT ACCIDENT INVESTIGATION MANAGEMENT SYSTEM (SLCAP 9999_10)</p>		

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This Policy Manual is an internal document of the Accident Investigation Unit. It contains policies relating to the responsibilities and functions of the AAIU for the purpose of guiding the operations and professional development of the AAIU.


Except for material which has been approved for public distribution, the contents of this Manual are not intended to be communicated to persons outside the AAIU without the consent of the Authority.

The Manual will be revised when necessary.

Civil Aviation authority of Sri Lanka

Air Chief Marshal W.D.R.M.J. Goonetilleke
Chairman

27 October 2010

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DEFINITIONS

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

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

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

except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries 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; or

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

c) the aircraft is missing or is completely inaccessible.

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

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

Act – Civil Aviation Act No 14 of 2010.

ADREP - Accident/Incident Data Reporting.

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

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

Aircraft Accident Investigation Board – The Accident Investigation Board appointed by the Authority in terms of Section 56 of the Civil Aviation Act No 14 Of 2010.

Accident Investigation Unit – Unit established in the Civil Aviation Authority of Sri Lanka to coordinate activities related to aircraft accidents and incidents.


Authority - The Civil Aviation Authority of Sri Lanka, established by the Civil Aviation Authority of Sri Lanka Act, No. 34 of 2002.

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.

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

Fatal injury - An injury resulting in death within thirty (30) days of the date of the accident.

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

Incident - An occurrence, other than an accident, associated with the operation of an aircraft other than an accident, 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.

Operator - A person, organization or an enterprise holding an Air Operator Certificate or a Foreign Air Operator Certificate engaged in or offering to engage in aircraft operations, and includes any person who causes or authorizes the operation of an aircraft, whether with or without the control (in the capacity of owner, lessee, or otherwise) of the aircraft.

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

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

Serious incident - An incident involving circumstances indicating that there was a high probability of an accident and is 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.

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

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

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


State of Manufacture - The State having jurisdiction over the organization responsible for the final assembly of the aircraft.

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

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


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

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

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ABBREVIATIONS

AAIB	-	Aircraft Accident Investigation Board
ADREP	-	Accident/Incident Data Reporting
AIG	-	Accident Investigation
AIU	-	Accident Investigation Unit
ATC	-	Air Traffic Control
ATPL	-	Air Transport Pilot Licence
CAASL	-	Civil Aviation Authority of Sri Lanka defined herein as “the Authority”
ECCAIRS	-	European Co-ordination Centre for Aviation Incident Reporting Systems
FDR	-	Flight Data Recorder
ICAO	-	International Civil Aviation Organization
SARP	-	Standards and Recommended Practices

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CHAPTER: 1 ORGANISATION OF INVESTIGATION IN SRI LANKA

1.1 The Accident Investigation Unit

Aircraft accident and incident investigation in Sri Lanka is carried out by the Civil Aviation Authority of Sri Lanka. The Authority will appoint Aircraft Accident Investigation Board (AAIB) in to each accident case by case. The process of investigation is totally independent. The coordination of investigation handles by the AIU of CAASL.

1.2 Responsibilities of the Accident Investigation Unit

- Ensure that primary and secondary legislation relating to aircraft accident and incident investigations are kept up dated to be complaint with international standards and recommended practices specified in the ICAO Annex –13 “Aircraft Accident and Incident Investigations”.
- Develop and maintain systematic written procedures and checklists for the conduct of aircraft accident and incident investigations in compliance with the applicable international standards and recommended practices as advocated by ICAO.
- Promote aviation safety through the independent investigation of accidents and incidents and the identification of safety deficiencies so that accidents may be avoided in future.
- Establish a pool consisting of well-qualified and skilled panel of aircraft accident investigators so that all skills required for accident / incident investigations are properly represented.
- Organize required initial and recurrent training for investigators in the pool for investigation techniques, procedures and practices.
- Serve as the point of contact in the CAA for all matters relating to aircraft accidents or incidents.
- Acquire and maintain Aircraft Accident Investigation Tool Kit for ready use.
- Publish Aircraft Accident/Incident Investigation Reports as directed by the Authority
- Develop strategies for effective management of aircraft accidents and aviation disasters.

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- Maintain a complete, accurate and updated data base of all aircraft accidents and incidents occurred in Sri Lankan's airspace.

1.3 Investigation of accidents and incidents

The Authority will investigate accidents pursuant to the Act and Article 26¹ of the Chicago Convention.

While Article 26 of the Chicago Convention refers to investigation of accident, Annex 13 goes beyond investigation of accidents and prescribes Standards and Recommended Practices for the investigation of incidents as well, in particular serious incidents.

¹ Article 26 of the Chicago Convention states that "In the event of an accident to an aircraft of a contracting State occurring in the territory of another contracting State, and involving death or serious injury, or indicating serious technical defect in the aircraft or air navigation facilities, the State in which the accident occurs will institute an inquiry into the circumstances of the accident, in accordance, so far as its law permit, with the procedure which may be recommended by the International Civil Aviation Organization. The State in which the aircraft is registered shall be given the opportunity to appoint observers to be present at the inquiry and the State holding the inquiry shall communicate the report and findings in the matter to that State."

Thus, the Authority will also investigate serious incidents as recommended by Annex 13 and, where there will be safety lessons to be drawn, incidents that are not classified as serious incidents.

Note: There may be instances where it is not clear-cut as to whether an incident should be classified as a serious incident. Even if such incidents are not classified as serious incidents and if they are likely to offer safety lessons, the Authority will initiate an investigation.

1.4 Organization Structure of AI Unit




1.4.1 Actual Cadre

Designation	Approved carder	Allocation
Manger /Aircraft Accident & Incident Investigation	01	01
Assistant Manager/Aircraft Accident & Incident Investigation	01	01

Members of the Staff - Manager/Aircraft Accident & Incident Investigation (Mgr/AAIL)

Job Functions or Areas of Responsibilities of Mgr/AAIL

1. reviewing the existing legal framework relating to aircraft accidents and incident investigations periodically to ensure that it is adequate and effective enough to satisfy the State's Obligations under the Chicago Convention, International Conventions and Protocols relating to Accident and Incident investigation and other national requirements both current and evolving and initiating necessary action, if revision to existing legislative requirement is found necessary;
2. reviewing the national Operating Regulations regarding aircraft accident and incident investigations periodically to ensure their adequacy for the consistent implementation of the International Standards and Recommended Practices, guidance material in ICAO Documents and other national requirements in conformity the local legislations to maintain a sound State Safety Oversight System;
3. Organizing all administrative, operational and maintenance duties and functions involved, for the efficient conduct of duties and functions of the Section of the CAASL to which the officer is attached. This includes but not limited to assisting the senior management in all such management functions of the section as determination of


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the logistics for the Section, attending to day to day duties and functions, planning, designing, implementation of the annual work plans, programmes and budgeting, data collection, storage, processing, retrieval, disseminations and report writing etc.;

4. determination of manpower requirements in an ongoing basis for the effective discharge of the Section to which the officer is attached and make recommendations for suitable adjustments;
5. Identifying the initial and recurrent training requirements of the personnel engaged in various tasks assigned to the Section and liaising with the relevant sections of the CAASL for their consistent implementation. This includes but not limited to updating the applicable sections in the CAASL Master Training Plan, Development of Annual Training Plans and Annual Training Programmes, conduct of necessary in-house or outdoor training, workshops, seminars etc. for the enhancement of knowledge and awareness of the relevant CAASL staff and industry partners, as and when required;
6. Developing, adopting and promulgating necessary guidance material for the efficient discharge of duties and functions of the Section to which the officer is attached and review and update the existing material in an ongoing basis. This includes the updating of the applicable portions of the CAASL citizen's charter, office manual, official website and sectional library;
7. Entering into agreement with other agencies concerned and involved for efficient conduct of aircraft accident and incident investigations, as and when required;
8. Conducting periodic exercises in relation to aircraft accident investigations and keep the CAASL readiness to handle such situations smoothly;
9. Maintain an effective Accident Victim Relief Programme in close liaison with all operating carriers to be activated following an aircraft accident;
10. Maintain a list of experts who can be mobilized for investigations and updating them with the CAASL rules, procedures and latest techniques involved in investigations; and,
11. performing all activities relating to ICAO Continuous Monitoring Assessment on Aviation Security Oversight centering the ICAO Annex 13 and associated other documents


Job Functions or Areas of Responsibilities of AM/AII

1. Assist the Senior Management reviewing and updating legal framework relating to Aircraft Accident and Incident Investigations;
2. Assist the Senior Management reviewing and updating local operating regulations regarding aircraft accident and incident investigations in conformity with the International Standards and Recommended Practices and Local requirements;
3. Assist the Senior Management to arrange all administrative, operational and maintenance duties and functions involved, for the efficient conduct of the Section of the CAASL to which the officer is attached. This includes but not limited to assisting the senior management in all such management functions of the section as

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determination of the logistics for the Section, attending to day to day duties and functions, planning, designing, implementation of the annual work plans, programmes and budgeting, data collection, processing, retrieval, disseminations and report writing etc.;

4. Assist Senior Management for the determination of manpower requirements for the effective discharge of the Section to which the officer is attached and make recommendations for suitable adjustments for the Section to be in a position to discharge its duties and functions effectively;
5. Assist the Senior Management to identify initial and recurrent training requirements of the personnel engaged in various tasks assigned to the Section and liaising with the other relevant sections of the CAASL for their consistent implementation. This includes but not limited to the conduct of necessary training, workshops, seminars etc. for enhancement of knowledge and awareness of the industry in the subject matter;
6. Assist the Senior Management to develop, adopt and promulgate guidance material for the efficient discharge of duties and functions of the Section to which the officer is attached and review and update the existing material.
7. Assist the Senior Management for the effective conduct aircraft accident and incident investigations as and when required;
8. Any other official duty as may be assigned by the superiors and/or the Chief Executive Officer from time to time.

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1.5 AIU staff and investigators

The CAASL has been identified Part-Time investigators and two administrative support staff. Part time investigators are expected to assist and augment the CAA's capacity to investigate into aircraft accident/incident.

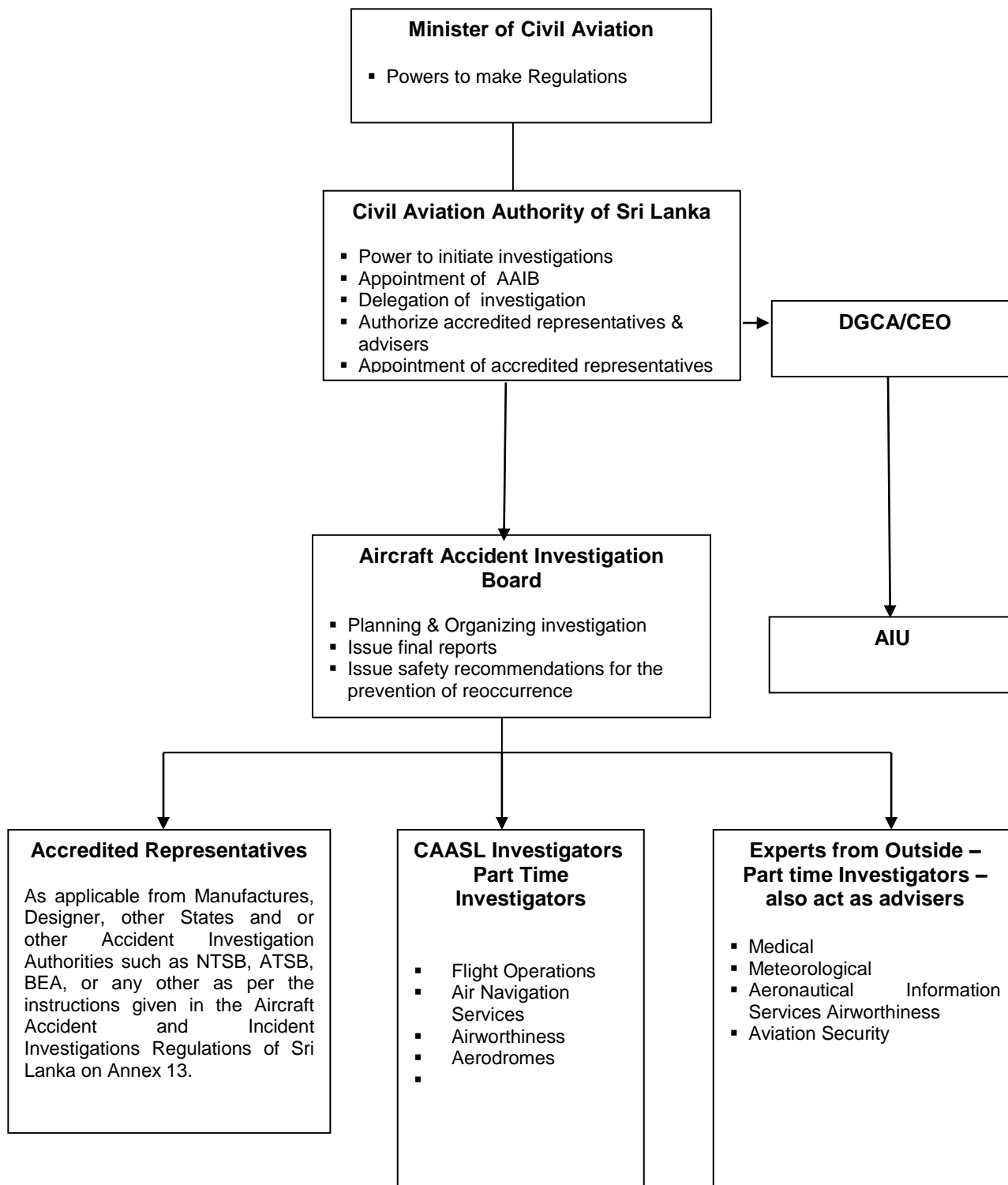
1.6 Aircraft Accident Investigation Board

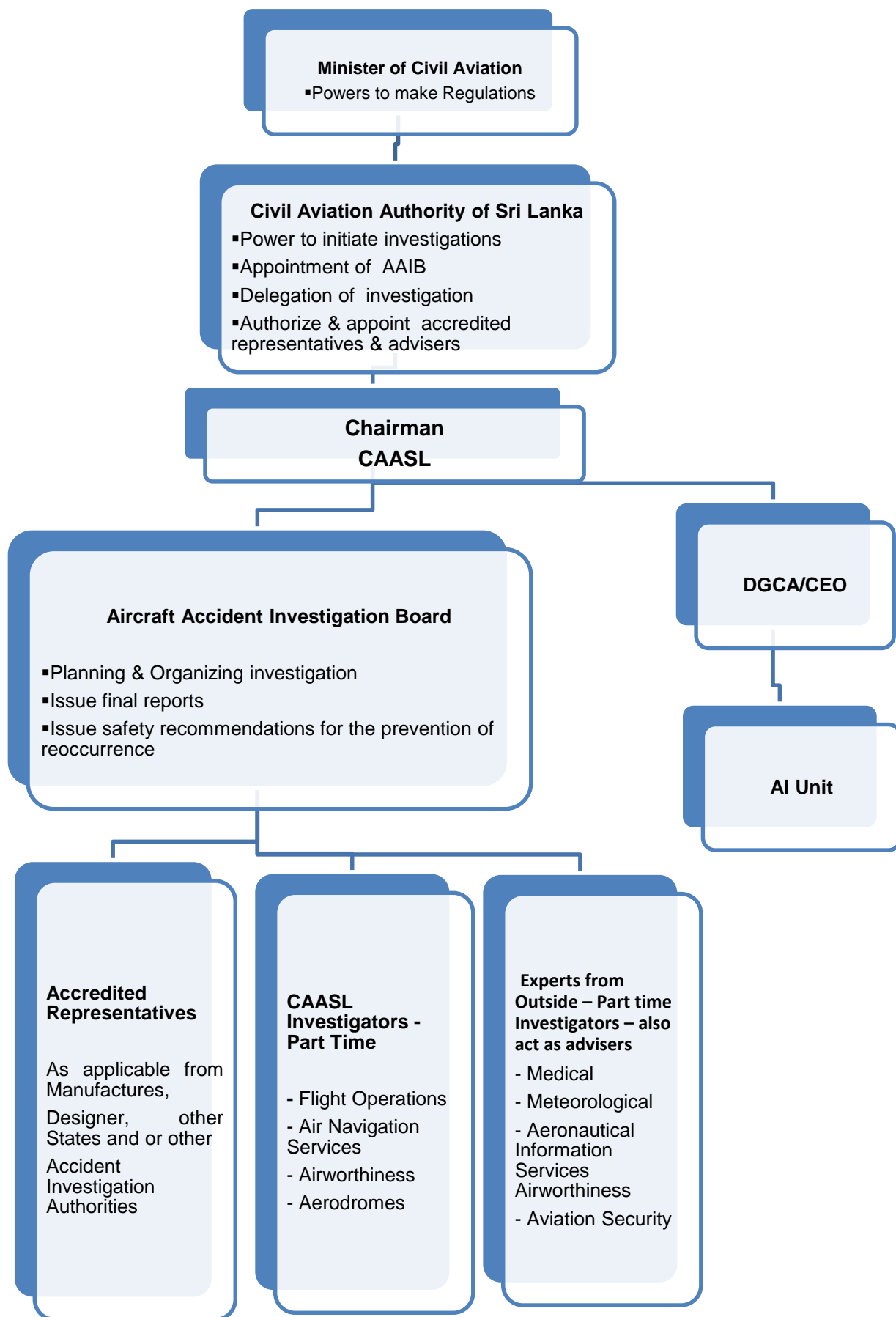
The Authority will select the identified CAASL investigators and appoint Aircraft Accident Investigation Board (AAIB) in to each accident/incident case by case. One of them is appointed as the Chief Investigator. The Chief Investigator concurrently leads the particular investigation. The remaining investigators, who have the Airworthiness, Operations, and Air Traffic Services background will appoint as members of the AAIB depending on their specialty and the nature of the accident/incident. However, the investigation process is totally independent.


1.7 Experts from Outside

The Authority will identify qualified experts from industry and will appoint them as part time investigators as and when necessary. They will be in the discipline of flight operations, Airworthiness, Air Traffic Management, Aviation Medicine and fire services. They are expected to assist and augment the CAA's capacity to investigate into aircraft accident/incident, with the sole view to finding the cause(s), to prevent future accidents. The Authority may call upon the such experts to have their advice depending on the circumstances. Persons to be appointed would serve the Board on voluntary basis.

1.8 The AIU Organization Chart





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1.9 Mission of the AIU of CAASL

The CAASL is the responsible body for the investigation of aircraft accidents and serious incidents to Sri Lanka and any foreign civil aircraft in Sri Lanka. The AIU of CAASL coordinates the investigations. The CAASL may also participate in overseas investigations of accidents and serious incidents involving an aircraft registered in Sri Lanka or aircraft operated by an air operator of Sri Lanka.

The mission of the AIU is to continuously develop and the CAASL's competency for the effective conduct of investigations into aircraft accidents and incidents for the identification of causal factors and make appropriate safety recommendations for accident prevention.

The CAASL will conduct the investigations in accordance with the Civil Aviation Act, Aircraft Accident and Incident Investigation Regulations of Sri Lanka and Annex 13 to the Chicago Convention, which governs how Contracting States of the International Civil Aviation Organisation (ICAO) conduct such investigations.


The CAASL contributes to aviation safety by independently investigating and analysing the circumstances leading to the occurrences of accidents or incidents and by identifying the safety issues and making safety recommendations to address these safety issues. The emphasis of an investigation is on learning to improve future safety and not on establishing blame.

Accident and incident investigation is one of the elements of the State Safety Programme (SSP) which is an integrated set of regulations and activities of a State aimed at improving safety. Attachment F to Annex 13, introduced by Amendment 12 to Annex 13, requires the following:

“The State has established an independent accident and incident investigation process, the sole objective of which is the prevention of accidents and incidents, and not the apportioning of blame or liability. Such investigations are in support of the management of safety in the State. In the operation of the SSP, the State maintains the independence of the accident and incident investigation organization from other State aviation organizations.”

The operations of the AIU are in line with this requirement.

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Through fulfilling investigation obligations under Article 26 of an Annex 13 to the Chicago Convention, the AIU contributes towards the maintenance of the confidence of the aviation industry and the public.


1.10 Objective of Investigation

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

The emphasis of ICAO's objective statement is on remedial action. Any investigation conducted under the provisions of Annex 13 should be separate from any judicial or administrative proceedings to apportion blame or liability.

An aircraft accident suggests hazards or deficiencies in the aviation system. The investigation should identify all immediate and underlying systemic causes of an accident. The investigation should also determine the facts, conditions and circumstances pertaining to the survival or non-survival of the occupants of the aircraft.


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 minimizing injuries to aircraft occupants in future accidents).

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1.11 Investigation by other Authorities in Sri Lanka

Investigation by the AIU of CAASL for the purposes of fulfilling obligation under Article 26 of the Chicago Convention and Annex 13 to the Chicago Convention does not preclude other competent authorities in Sri Lanka. (e.g. Sri Lanka Police, Coroner, judicial authorities) from carrying out their own investigations separately for their own purposes as required and in accordance with the relevant legislation.

To the greatest extent possible, the AIU will coordinate and cooperate with the competent authorities that conduct a parallel investigation. For example, the AIU may need information derived from the identification of victims by the Police or from the pathological examination of the victims by the Coroner.

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1.12 Scope of Investigation

The CAASL will be involved in a civil aircraft accident or serious incident investigation in the following circumstances:

- (a) where the accident or serious incident occurs in within the territory of Sri Lanka (irrespective of the nationality of the aircraft);
- (b) where the accident or serious incident occurs in another Contracting State or non-Contracting State and involves an aircraft registered in Sri Lanka or an aircraft operated by an air operator of Sri Lanka and the State involved is conducting an investigation of the accident or serious incident and the Authority is participating in the investigation;
- (c) where the accident or serious incident occurs in a non-Contracting State and involves an aircraft registered in Sri Lanka or an aircraft operated by an air operator of Sri Lanka, and the non-Contracting State involved does not intend to carry out an investigation of the accident or serious incident in accordance with Annex 13 and the Authority is instituting an investigation;
- (d) where the accident or serious incident involves an aircraft registered in Sri Lanka or an aircraft operated by an air operator of Sri Lanka and the investigation has been delegated to the Authority by another State by mutual arrangement and consent;
- (e) where the accident or serious incident involves an aircraft registered in Sri Lanka and occurs in a location which cannot be definitely established as being in the territory of any State and Authority is instituting an investigation;
- (f) Where Authority is assisting another State or non-Contracting State in the investigation of an accident or serious incident that does not involve an aircraft registered in Sri Lanka or an aircraft operated by an operator Sri Lanka .

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

- (a) in the territory of Sri Lanka; or

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- (b) outside Sri Lanka involving an aircraft registered in Sri Lanka or an aircraft operated by an air operator of Sri Lanka.

The Authority may, delegate the investigation of an accident or serious incident to another State by mutual arrangement and consent. In such a case, the Authority will facilitate to the best of its ability the investigation carried out by that State.

1.13 Investigation Resources

As the air transport industry and the aircraft itself have become more sophisticated, the investigation of a major aircraft accident can be expected to be very complex and may need an investigation team of significant size.

The AIU of CAASL will also make use of other external investigation expertise as and when needed, e.g. metallurgists from the academia and research institutes, human factors consultants, investigators from foreign investigation authorities and, where no conflict of interest is likely, experts from the aviation regulatory authority and-service providers.


1.14 Support from other agencies

The AIU of CAASL also needs other external agencies to provide engineering and logistics support to its investigation, e.g. Police to secure accident site, aircraft maintenance companies to help remove flight recorders and collect fuel/oil samples, ATC to provide communication transcripts and radar and meteorological data. The AIU will make such cooperation by initiating MOU with relevant organizations.

1.15 Funding for major aircraft accident investigations

In case of a major accident or serious incident, the Authority cannot use the budgetary provisions allocated for other functions. In such situations, to carry out investigation a large amount of funds are required and it should be available immediately.

The Authority has identified this problem and Rs.50 Million rupees has reserved and allocated as a separate fund to handle such situations.

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CHAPTER: 2 COMPLIANCE WITH ANNEX 13 STANDARDS

2.1 Implementation of ANNEX 13 Standards

The specifications in Annex 13 apply to investigation activities in respect of accidents and incidents wherever they occurred. It is the AIU's policy to adhere, as far as possible in its investigation of accidents and incidents, to all investigation related Standards contained in Annex 13. The AIU of CAASL will also endeavor to comply with the Recommended Practices spelt out in Annex 13.

Implementation of the Annex 13 Standards and Recommended Practices will be through legislation and/or AIU of CAASL policies and procedures.

If any Annex 13 Standard cannot be complied with, the AIU of CAASL will highlight it and arrange for a notification of difference to ICAO.

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2.2 Review of Amendments to the ANNEX 13

CAASL is the agency in Sri Lanka designated to communicate with ICAO on official matters on behalf of Sri Lanka. As such, the AIU will receive the official ICAO communications concerning Annex 13 amendment.

On receipt of any ICAO communications concerning Annex 13 amendment, AIU will evaluate the information either or forward for comments /evaluation to staff assigned by the Authority. In this regard the guidance and direction is provided in the Management Circular Ref MC-2018-01 issued by DGCA on 3rd March 2018.

Where necessary, the AIU will discuss with the Authority regarding position of Sri Lanka on the Annex 13 amendment. Thereby AIU will communicate the response to any Annex 13 amendment proposal to ICAO.


2.2.1 Notifying ICAO of differences with Annex 13 Standards

When an amendment to Annex 13 has been adopted by ICAO and there are standards that Sri Lanka cannot comply with, the AIU will notify ICAO of the differences between national regulations and practices and Annex 13.

2.2.2 Amendment to legislation, policies or procedures

For Annex 13 amendment that is adopted by ICAO and with which Sri Lanka can comply, the AIU will amend the AIU Policy Manual, Procedure Manual and relevant documents accordingly or initiate appropriate action for the amendment of the legislation and regulations in Sri Lanka.

For amendment to the national legislation, the AIU of CAASL will draft the necessary legislation amendment and seek the concurrence of the Legal Department before proposing the amendment for approval.

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CHAPTER: 3


STAFFING AND TRAINING

3.1 Recruitment of Investigators

Investigators are responsible for carrying out accident/incident investigations. The investigation tasks include gathering, recording and analyzing all available information on accidents and incidents, identifying safety issues, making safety recommendations, determining the causes or contributing factors, and completion of investigation reports. The investigators' work scope will also include formulation and implementation of investigation related policies, administration of a confidential aviation incident reporting system and updating of investigation legislation.

The Authority normally looks for investigators from the pool of people who possess sound educational qualification (e.g. a degree in aeronautical/mechanical/electrical/electronic engineering, a pilot or licensed aircraft maintenance engineer qualification) and industry experience in aviation acquired from civil or military qualification, 10- 15 year experience as a Pilot, Aeronautical Engineer or Aircraft Maintenance Engineer, Flight Operation Officer, Air Traffic Controller, Aviation Medical Practitioner. Preference will be given to those with relevant experience at management or supervisory level and in particular with aircraft accident/incident investigation experience.

The desired qualities of an investigator are: inquisitiveness, logical mind, objectivity, dedication, diligence, patience, perseverance, good interpersonal and communications skills, good leadership and supervisory skills, teamwork, and commitment to excellence.

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3.1.1 Appointment of Investigators

For the purpose of carrying out investigations into accidents and incidents, specialists from CAASL are identified as investigators by the Authority. The Authority will select the identified part- time investigators and appoint Aircraft Accident Investigation Board (AAIB) in to each accident/incident case by case in exercise conferred by paragraph 56 of the Civil Aviation Act No 14 of 2010.

One of them is appointed as the Chief Investigator. The Chief Investigator concurrently leads the particular investigation. The remaining investigators, with who have the Airworthiness, Operations, and Air Traffic Services back ground are appoint as members of the AAIB depending on their specialty and the nature of the accident/incident. However, the Authority will ensure to have at least one experienced investigator assigned into each investigation and provide the required level of experience during an investigation.


The Authority Investigators are act as part-time investigators. The experts from the industry and other organizations are identified to obtain necessary assistance as and when necessary. They are in the discipline of Meteorological, flight operations, Airworthiness, Air Traffic Management, Aviation Medicine and Fire services. The main aim is to obtain their advice during aircraft accident/incident investigation conduct by CAASL as and when necessary. Thus, the Authority may call upon such experts to have their advice depending on the circumstances.

However, the Authority will ensure that whenever experts seconded from other organizations engaged, these experts are relieved from their regular duties of their organizations during the investigation.

The Authority shall establish means to avoid possible conflicts of interest, whenever the Authority uses experts seconded by other organizations as investigators.

3.2 Staffing

The Authority will establish an Aircraft Accident Investigation Board manned by qualified and experienced investigators. The Authority has been trained appropriately qualified personnel in the accident and serious incident investigation techniques required to participate in or to conduct an aircraft accident investigation. When assigned to an accident and serious incident investigation, they will be relieved of their regular duties for the duration of the investigation.

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In case the Authority does not possess its own appropriately qualified personnel to conduct investigation, it will make arrangements through memoranda of understanding [MOUs] with other States or with regional organizations to obtain the necessary personnel in an expeditious manner in the event of an accident. Such Arrangements have made in between CAASL- Sri Lanka with BEA- France and Transport Safety Investigation Bureau- Singapore on Cooperation Relating to Aircraft Accident and Incident Investigation. Also Authority shall make arrangements to call best technical expertise from any source for best outcome of the investigation being conducted.

The Authority will determine the staffing needs in order to have sufficient human resources to meet national and international obligations related to aircraft accident investigations. To accomplish this, the Authority will employ sufficient number of aircraft accident investigators. To this effect, the Authority will also declare vacancies from time to time as applicable after having reviewed the turnover of the investigators in past years and provide adequate training to the investigators as required. The Authority will also develop and provide sufficient number of procedure and guidance materials to the investigators to facilitate their activities in line with the investigations for accidents and serious incidents.


3.3 Investigators

3.3.1 Part time Investigators

Accident investigators must have a university degree in Aviation related field or high school diploma from an accredited aviation technical school as well as specialized training in their area of aviation, knowledge of aviation accident investigations, practices, procedures, and techniques; ATP License, ATC License with endorsements for Radar Approach and Area Sectors.

The minimum qualifications and experience requirements for full-time aircraft accident investigators are;

knowledge and practical experience in civil aviation (as pilot, engineer, air traffic controller or other areas of expertise); most preferable, individuals those who having sound educational qualification and aviation industry experiences 10-15 years as a Pilot, Aeronautical Engineer, Aircraft Maintenance Engineer, Flight Operation Officer, Air Traffic Controller and Aviation Medical Practitioner. (ATPL holders - 15 years in flight safety and for ATC License holders - 15 years)

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3.3.2 Experts from out site

The part-time investigators may be drawn from other specialized government agencies or industry and external organizations like the military, universities, research agencies and institutes and specialized service providers. The minimum qualifications and experience requirements for part-time aircraft accident investigators are;

Sound educational qualifications with a university degree in Aviation related field or high school diploma from an accredited aviation technical school as well as specialized training in their area of aviation, knowledge of aviation accident investigations and aviation industry experiences over 15 as a Pilot, Aeronautical Engineer, Aircraft Maintenance Engineer, Flight Operation Officer, Air Traffic Controller and Aviation Medical Practitioner.


3.4 Qualities of Investigators (as per ICAO DOC. 9756-AN/965 Part I)

Aircraft Accident Investigation is a highly specialized task which should only be undertaken by trained personnel possessing many qualities, not the least important of which are an inquisitive nature, dedication to this kind of work, diligence and patience. The investigator must have a good sound working knowledge of aviation and factors which effect operations as a whole. Technical skill, perseverance and logic are the tools of his / her profession; humility, integrity, and respect for human dignity his guiding rules.

It is not sufficient to nominate as the occasion arises, a person with specialist aviation knowledge as the investigator, for aircraft accident investigation is a specialist task itself. The standard of the investigator assigned to an accident inquiry determines the thoroughness and class of results obtained more than in any other filed of aeronautics, the longer a well-qualified member serves the more expert he / she becomes. At least one experienced investigator is assigned to each inquiry so that a continuing thread of experience may maintain the standards of accident investigation and reporting.

It is desirable that accident investigators have, as a foundation on which to develop their skills, a professional pilot's background, an aeronautical engineering qualification or, as appropriate, experience in specialized areas of aviation such as operations, air traffic control, meteorology, aerodynamic, design, etc.

In order to discharge effectively their duties, it is essential that aircraft accident investigators are provided with suitable statutory powers which should, nonetheless, be used with

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discretion. The investigator will come in contact with many kinds of people the majority of whom recognize the investigator's status and will more often than not feel obliged to offer all assistance they can without the investigator reminding them of the official powers which are vested in him / her. He / She will also encounter members of the general public who are less well acquainted with his / her activity and who may show reticence to be forthcoming with evidence, stemming from a natural desire not to become involved. It may, in these latter circumstances; it may be necessary for the investigator to explain his / her function and to elicit their willing co-operation.

When called to the scene of the accident, the investigator should endeavor to arrive as soon as possible; in his / her dealings with witnesses and other people concerned in the accident, he / she should be prompt in attending appointments and correct in his / her manner, regardless of how he / she may feel personally. Above all, the investigator must be accurate and factual; he / she must observe, interpret and record clearly and accurately at all times, because his / her record of what is seen, heard and done, may well prove to be the only record available, the analysis of which may have far-reaching effects on individual people, aircraft, equipment and aviation safety as a whole.

3.5 Job description of an investigator

Job Descriptions of each investigator are shown in the Appendixes in this Manual. The general Job Description is as shown in below 3.6.

The job tasks of each investigator post are as per the tasks laid down in each event check list of Aircraft Accident Investigation Management System – SLCAP 9999 _10.

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3.6 Aircraft Accident Investigator- Job Description

Title of Post: Aircraft Accident Investigator – Aircraft Accident Investigation Board

Reporting to: Civil Aviation Authority of Sri Lanka

Enforcement Action Authorized: Co-ordination and taking into custody of aircraft accident/incident evidence.


General Information

Since the major portion of the work an accident investigator does will be at the accident scene, this position requires local and overseas travel at short notice with extended overnight stay and irregular working schedules, as the situation demands. Travel may be in aircraft or by ground transportation over rough roads. An incumbent may be exposed to aircraft noise, moving machinery, dust, high voltage electricity, dangerous goods, electromagnetic radiation, extreme weather conditions (approximately 50% of the work is out of doors) and stressful pathological sceneries and conditions etc. Incumbents may have to walk, hike and climb for extended periods of time over moderately rough terrain in a variety of physically challenging conditions including swamps, mountains and/or on concrete or asphalt in adverse topographic, weather, and atmospheric conditions. The incumbent needs to realize the element of possible risks and health hazards due to contaminated items at accident sites. The incumbent may be required to undergo mandatory vaccination against certain diseases on periodical basis. Investigators are required to wear and operate appropriate personal protective equipment, carry all necessary equipment, tools and instruments to document all findings as they may photograph, video tape, make measurements and take notes while at the accident scene.

Nature and scope of duties:

To be able to response or perform investigations effectively to any aircraft accident or incident that may occur in Sri Lanka or to any aircraft registered in Sri Lanka wherever it may be, in compliance with the requirements stipulated by the Civil Aviation Authority of Sri Lanka and in conformity with the standards of ICAO,

Investigators will work under the direction of the Authority and conduct accident/serious incident investigations. This includes assisting in the on-scene portion of the investigation as well as conducting the post-accident research needed to develop the accident sequence of events and proposed probable cause of the accident. This is done through various means including interviewing survivors, reviewing and analyzing flight and maintenance

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records, studying human performance issues and operations, examining engines, systems, instruments and other airplane parts, Including operations, flight recorders, structures, cabin safety, aircraft performance (engineering), airports, air traffic services, and power plant (engines) to try and figure out what caused an accident/incident.

Finally, assist in writing preliminary accident/incident reports and final reports and determines the accident's/incident's "probable cause" and makes recommendations to prevent similar accidents in the future.

Skills and Abilities Required:


- good physical condition to meet the requirements of the job
- skill in the use of computers
- knowledge of General Aviation Flight Operations
- have excellent organizational and technical writing skills in writing reports
- strong communication skills and ability to effectively write English.
- must be assembled and or organized data which taken from the accident scene into logical factual and analytical reports.

Conditions of appointment:

Part time investigators are to assist and augment the CAASL capacity to investigate into aircraft accident, with the sole view to finding the cause(s), to prevent future accidents. Persons to be appointed as part time investigators are would serve on voluntary basis.

Director General of Civil Aviation &
Chief Executive Officer

Civil Aviation Authority of Sri Lanka
No: 152/1, Minuwangoda Road
Katunayake
Sri Lanka

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3.7 Investigators Credentials

For the purpose of carrying out investigations into accidents and incidents, the Authority appoints investigators in to the Aircraft Accident Investigation Board to each accident/incident case by case. In such situations the Authority provide the delegation of power as prescribed in the Act by issuing credentials before initiating investigation duties.

Every Investigator shall before entering upon duties, they will have to sign pledging himself or herself to observe strict secrecy in respect all information disclosed at the investigation and shall by such declaration, pledge himself or herself, not to divulge any such information except;

- a) When required to do so by a court of law
- b) In the performance of duties as a member of the Board or
- c) In order to comply with any provisions of this Act or any regulation or rule made there under.

3.7.1 General Instructions to Investigators

Every investigator of the Aircraft Accident Investigation Board shall before entering upon his/her duties, sign a declaration pledging himself or herself to observe strict secrecy in respect of all information disclosed at the investigation.


Such declaration, pledge himself or herself, not to divulge any such information except;

- When required to do so by a court of law,
- In the performance of duties as a member of the Board; or
- In order to comply with any provisions of this Act or any regulation or rule made thereunder.

It is mandatory that every CAA investigator when engaged in investigation with the industry partners or members of the public outside the CAA premises shall;

- Have his or her valid investigator credentials issued to him/her conspicuously;
- Put on the tabards issued to the investigator;
- Wear Personnel protective equipment, which provided by the Authority


The investigator shall be abide by the conditions of issues contained in the General Instructions to Investigator as described in below.

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Investigators are assigned for aircraft accident investigations and are eligible to receive the Investigators credential, which will be issued after the appointment of Aircraft Accident Investigation Board with regard to each aircraft accident or incident.

The work functions associated with the credentials as follows;

- The Credential provides the holder at all times with unrestricted access to aircraft accident site as prescribed in Section 58 of Civil Aviation Act No 14 of 2010, within the territory of Sri Lanka.
- The powers of investigators shall be in accordance with the Section 58 of the Civil Aviation Act No 14 of 2010.
- Lost or stolen credentials - If the credential is lost, stolen or damaged the inspector should report the occurrence immediately to the CAASL. The matter also be reported to the police.

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3.7.2 Format for Credential

	INVESTIGATOR CIVIL AVIATION AUTHORITY OF SRI LANKA	
 (Name)	
Investigator of Aircraft Accident Investigation Board appointed by this Authority under the Section 56(1) of Civil Aviation Act No 14 of 2010 for the conduct of aircraft accident/ serious incident /incident investigation.		
.....onat.....		
 (Photo)	NIC/PP No: Credential No:00X Issue Date: <div style="text-align: right;"> Chairman, CAA-Sri Lanka </div>	

The undersigned requests and requires to permit the bearer unrestricted access to the accident/incident site, any civil aircraft, aerodrome, air operator's premises, building or workshop or any place where any aeronautical services is provided and to afford the bearer such assistance as may be necessary to perform his/her duties without let or hindrance. The holder is hereby delegated the powers conferred on an Investigator under the above Act. The authority specified herein will remain until this accident investigation is completed, unless withdrawn sooner. (If found, please handover into nearest Police Station of Sri Lanka Police or return to the below address.)


Chairman
 Civil Aviation Authority of Sri Lanka
 No 152/1, Minuwangoda Road, Katunayake

011-2358800
www.caa.lk

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3.7.3 Format for Declaration of observe strict secrecy

	
CIVIL AVIATION AUTHORITY OF SRI LANKA DECLARATION TO OBSERVE STRICT SECRECY	
I,of (Insert full name)(Insert the permanent address)	
<p>As the investigator on the AAIB, of the Civil Aviation authority of Sri Lanka (CAASL) do hereby solemnly pledge that I will observe strict secrecy in respect of all information disclosed at the investigation and shall not to divulge any such information except ;</p> <ul style="list-style-type: none"> • When required to do so by a court of law ; • In the performance of duties as a member of the Board; or • In order to comply with any provision of this Act or any regulation or rule made there under. 	
..... Signature Place & Date
In witness, Name of the Officer Designation Date	

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3.8 Immunization for Investigators

As there are always potential biological hazards at an accident site, all investigators should be appropriately immunized.

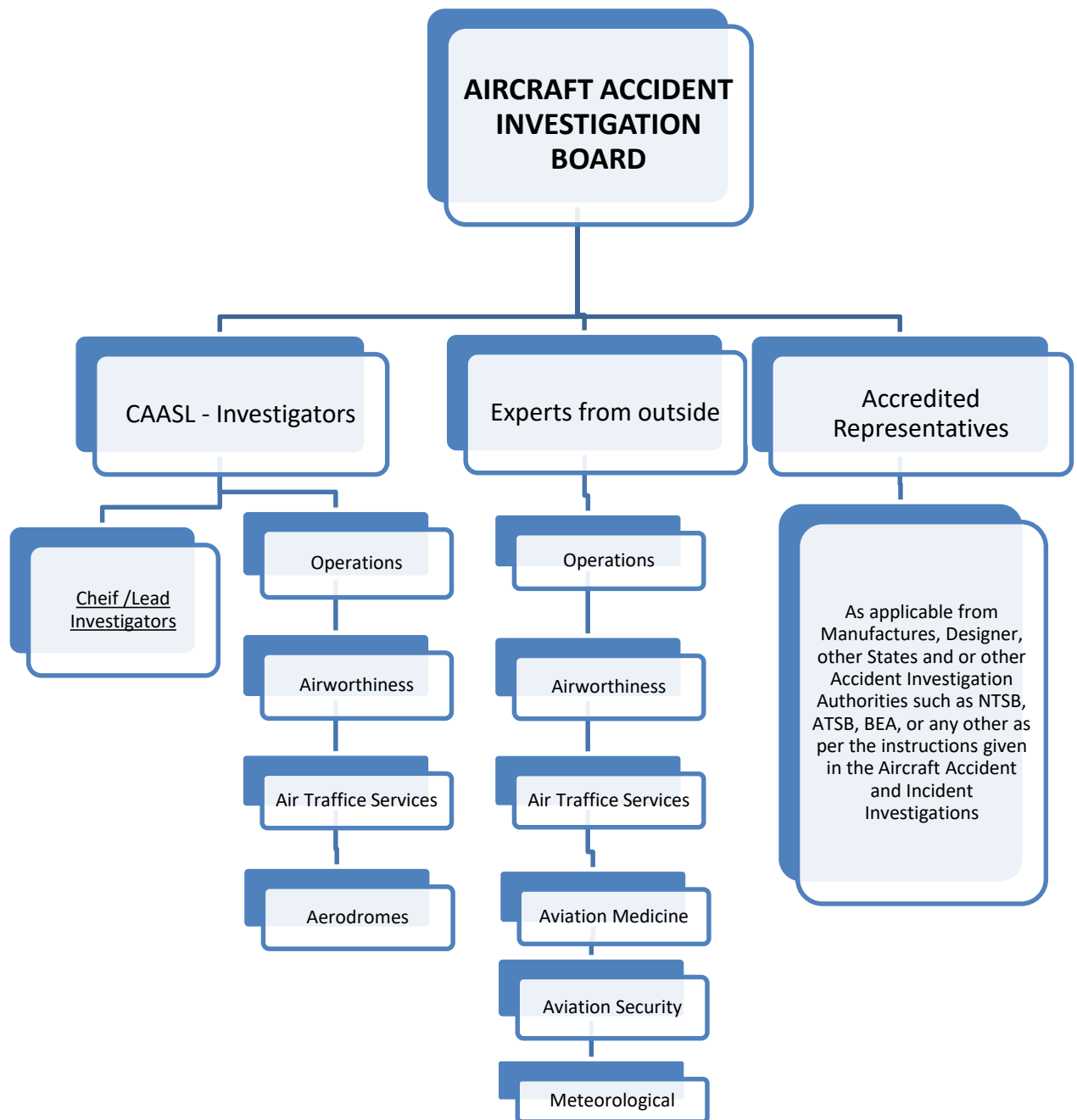
All investigators, full-time or part-time, will be asked to immunize themselves against the following:


- Tetanus
- Hepatitis A
- Hepatitis B
- Influenza

The AAIU will reimburse the investigators for the immunization expenses where the immunization is carried out at designated hospitals or clinics.


3.9 List of Investigators

The List of investigators shown as below;



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Title	Name	Qualification	AAI training received
Chief Investigator	Mr. Atula Jayawickrama	ATC License & Inspector of CAASL	Yes – 2007
	Mr. Ranjith Perera	ATC License & Inspector of CAASL	Yes – 2012
	Capt. L.E. Rathnayake	ATPL & Inspector of CAASL	Yes – 2012
	Capt. N.A. Keil	ATPL & Inspector of CAASL	Yes -2012
	Ms. Romany Lawrence-Hewa	Inspector of CAASL	Yes - 2007 and 2012
	Mr. S.P.B. Wattewewa	CPL & Inspector of CAASL	Yes -2012
Airworthiness	Mr. DAG Jayasuriya	AME & Inspector of CAASL	Yes – 2007
	Mr. H.C. Wimalaratne	Inspector of CAASL	Yes - 2007
	Ms. P.P. Jayawardana	AML & Inspector of CAASL	Yes- 2012
	Mr. S.A.T.D. Senanayake	Inspector of CAASL	Yes- 2012
Air Traffic Services	Mr. Rohan Manukulasooriya	ATC & Inspector of CAASL	Yes- 2012
	Mr. Mahesh De Silva	ATC & Inspector of CAASL	Yes- 2012
Aerodromes	Mrs. S. Casseer	ATC & Inspector of CAASL	Yes- 2012
	Mr. H.M.R. Samanpriya	Inspector of CAASL	Yes- 2012

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CHAPTER :4

TRAINING


4.1 General

The Authority has been identified that investigators require different levels of experience, knowledge and training according to the particular role to which they are assigned. They should receive training commensurate with their responsibilities as an accident investigator, group leader, chief investigator, accredited representative, adviser or expert/specialist. The training guidelines and course syllabi will be planned in such a way that the investigators receive appropriate levels of training that will enable them to perform efficiently in any of the roles assigned to them by the employer.

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

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

In addition to technical skills and experience, an accident investigator requires certain personal attributes such as integrity and impartiality in the recording of facts; ability to analyse facts in logical manner, perseverance in pursuing inquiries, often under difficult or trying conditions and tact in dealing with a wide range of people who have involved in the traumatic experience of an aircraft accident..

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4.2 Training Guidelines

The Authority will appropriately implement the training programme by verifying the type and frequency of training provided (initial, recurrent and specialized) is sufficient to acquire/maintain the required level of knowledge, skills, competence and qualifications in accordance with the duties and responsibilities assigned to each technical staff.

Training a person for aircraft accident investigation involves several phases. It includes;

- Initial/indoctrination training
- On-the-job training
- Basic accident investigation course
- Advanced accident investigation course, supplemented by specialized courses.

On the job training is an ongoing process that continues for many years, there should be sufficient time intervals between each formal course to allow the investigator to consolidate the information and the techniques learned.


Formal courses will be designed to complement on-the-job training by exposing trainee investigators to a cadre of experts who can pass on the details of their specialties to their students. The experts are usually recruited from those with experiences in a particular area of accident investigation. They include experienced investigators, aviation medicine physicians, psychologists, aeronautical engineers and manufacturers' representatives.

4.2.1 Phase 1 – Initial Training

The aim of the initial training is to familiarize investigators with the legislation, procedures and requirements of the Authority. The following subjects will be included in the initial training or indoctrination:

a) Administrative arrangements


- Applicable legislation
 - Civil Aviation Authority of Sri Lanka Act 34 of 2002
 - Civil Aviation Act No. 14 of 2010
 - Aircraft Accident & Incident Investigation Regulations of Sri Lanka
 - Convention on International Civil Aviation

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- International agreements
 - Annex 13 – Aircraft Accident & Incident Investigation
 - ICAO Doc 6920- Manual of Aircraft Accident Investigation
 - ICAO Doc 9422- Accident Prevention Manual
 - ICAO Doc 9756-Manual of Aircraft Accident and Incident Investigation (Part I, III and IV)
 - Human Factors Training Manual (Doc 9683)
 - ICAO Doc 9156 - Accident/Incident Reporting Manual (ADREP Manual)
 - Safety Oversight System (Doc 9734)
 - Safety Management Manual (Doc 9859)
 - Hazards at Aircraft Accident Sites (ICAO Cir 315)
 - Emergency Response Guidance for Aircraft incidents involving Dangerous Goods (Doc 9481)
 - Investigation of Human Factors in Accidents and Incidents (Cir 240)
 - Guidance on Assistance to Aircraft Accident Victims and their Families (Cir 285)
 - Training Guidelines for Aircraft Accident Investigators (Cir 298)
- Cooperation with other agencies
 - Memoranda of understanding with other organizations
 - Liaison arrangements with local and national authorities
 - Foreign investigation authorities
- Civil Aviation Authority of Sri Lanka
 - Aircraft Accident & Incident Investigation Unit of CAASL
 - Organization
 - CAASL Inspectors & Accident Investigation Panel
 - Aircraft accident investigation manuals and procedures
- CAASL Preparedness
 - Accident Investigation Manuals, Tool & Equipment
 - Transport arrangements
 - Ethics and conduct
 - Expenditure control

b) Initial response procedures

- On-call procedures
- Notification of other national authorities and organizations

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- Accident site management and coordination with other agencies
- Securing of records, recordings and samples
- Accident site jurisdiction and security
- Investigator safety including psychological stress
- Recovery of human remains
- Medical examinations of aviation personnel involved and requests for autopsies
- Assistance to Aircraft accident victims and their families

c) Investigation procedures

- Authority and responsibility;
- Size and scope of the investigation;
- Investigation management;
- Use of specialists;
- Parties to the investigation, accredited representatives, advisers and observers; and
- Release of information to the news media


4.2.2 Phase 2 — on-the-job training

Following the initial training, the Authority will provide on-the-job training for investigators. On-the-job training is an ongoing process that continues for many years. During this phase, the investigators will practice the procedures and tasks covered in the initial training, and gain familiarity with investigation techniques. This training will also familiarize them with the investigation tasks at the accident site, the collection of factual information, the analysis of the factual information and the development of the final report. The conduct of on-the-job training often involves more than one experienced investigator and is not limited to investigations within the Sri Lanka.

4.2.3 Phase 3 – Basic Accident Investigation Courses

After completing the initial familiarization training, the aircraft accident investigator who is under training will attend a basic accident investigation course as soon as is practicable. A basic course will have a syllabus that includes following topics;


1. the responsibilities of the Authority, as defined in Annex 13 — Aircraft Accident and Incident Investigation;

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2. the accident site considerations, such as security, hazards, safety precautions, wreckage diagramming, collection of evidence and control of access;
3. the investigators' personal equipment and protective clothing;
4. the examination and recording of the wreckage and witness marks;
5. the range of apparatus available for recording evidence;
6. witness interview techniques;
7. the full range of in-flight recorders and ground-based recorders;
8. the determination of the time and origin of any aircraft fires;
9. crashworthiness and survival aspects;
10. the properties and the modes of failure of materials used in the aircraft structure;
11. the design of aircraft systems and likely modes of failure;
12. aerodynamics and aircraft performance;
13. the examination of power plants;
14. human performance;
15. aviation medicine and pathology;
16. methodology of report writing.

The detail breakdowns of the topics are as follows;

1. General introduction. The history of aircraft accident investigation, international agreements on the conduct of investigations, and the Standards and Recommended Practices (SARPs) adopted by ICAO, Annex 13 — Aircraft Accident and Incident Investigation and other relevant guidance materials.
2. Accident notification procedures.
3. Investigation management.
4. Investigators' equipment.
5. Accident site safety.
6. Protection of evidence.
7. Initial action at the accident site.
8. Information gathering techniques.
9. Communication and recording media.
10. Witness interviews.
11. Recorders.
12. Examination of relevant maintenance documents.

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13. Fires and explosions.
14. Survival aspects.
15. Structures.
16. Systems.
17. Aerodynamics.
18. Power plants.
19. Rotary wing aircraft.
20. Organizational information.
21. Human performance.
22. Determination of the flight crew's suitability for the flight.
23. Methods of analysing the factual information gathered. .
24. Report writing.
25. The news media and public relations.

4.2.4 Phase 4 – Advanced Accident Investigation Courses and Additional Training


Most topics covered in the basic course will also apply to advanced courses. In general, an advanced course is desirable for preparing an investigator for the responsibilities of group leader or chief investigator of a major investigation.

Topics that will be discussed include:

- The provisions of family assistance to those involved in an accident;
- relations with the media
- cataloguing a large number of fragments of wreckage
- management of a large accident site for security, safety and protection of the personnel
- briefings and answers to formal questions for members of government
- the methods of undertaking investigations, that involve both civil and military aircraft
- liaison with the law enforcement authorities in accident involving unlawful interference

Other specific subjects which should be included in advanced courses include:

- techniques used to investigate accident damaged systems that involve specialized technologies such as glass cockpit, fly-by-wire systems, GPS, and (EGPWS)
- reconstruction of evidence from damaged recorders

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- the use of virtual video presentations in large structural reconstructions of wreckage
- the use of computer simulations
- the use of flight simulators

4.2.5 Specialty courses

Specialty courses may be introduced to an investigator at any stage after a basic course. The courses would augment the skills and knowledge acquired by the investigator in order to meet the needs of a particular area of accident investigation that is relevant to their assigned duties. Topics are;


- Helicopter accident investigation,
- Gas turbine engine accident investigation,
- Accident survival aspects
- Fires and explosions
- Human Factor investigation
- Family assistance
- Media relations
- Systems involving specialized technologies (such as glass cockpit, fly-by-wire systems, GPS, electronic flight instrument system (EFIS) and EGPWS).
- Accident/Incident Prevention
- Ground Accident/Incident Prevention
- Human Factors in accident investigation
- Aviation Crisis Communication
- Air Accident Safety Risk Management
- Aircraft Accident Crisis Preparedness
- Accident Site Hazards and Blood borne Pathogens
- Aircraft Maintenance Investigation
- Aircraft Performance Investigation
- Cabin Accident Investigation
- Electronic Systems Investigation
- Fires and explosions Investigation
- Accident Fire Hazard, protection and Investigation
- Underwater Search and Recovery of Flight Recorders
- Investigative Interviewing Techniques
- ICAO Annex 13 Report writing
- ECCAIR Software and End user programme

In case if there is no major accident/serious incident in the territory of Sri Lanka, the Authority will organize a drill/ exercise by participating its investigators.

The list of the accident investigation tools & equipment is shown in Chapter 21 of Aircraft Accident investigation Procedure Manual (SLCAP 9999).

4.3 Training Programme – Aircraft Accident Investigators of CAA – Sri Lanka


TRAINING PROGRAMME- AIRCRAFT ACCIDENT INVESTIGATORS OF CIVIL AVIATION AUTHORITY OF SRI LANKA				
Identification	Area of Training	Data gained (by Training/Workshops - latest year)	Demonstrated (by presentation - latest year)	Scheduled to gain - year/month
	PHASE - 1- INITIAL TRAINING			
PHASE - 1- INITIAL TRAINING	Module - 1 : Administrative Arrangement			
	1.1 Applicable Legislation			
	a. Civil Aviation Authority of Sri Lanka Act 34 of 2002			
	b. Civil Aviation Act No.14 of 2010			
	c. Aircraft Accident & Incident Investigation Regulations of Sri Lanka			
	d. Convention on International Civil Aviation			
PHASE - 1- INITIAL TRAINING	1.2 ICAO Documentation			
	a. Annex 13			
	b. Manual of Aircraft Accident investigation (Doc 6920)			
	c. Accident Prevention Manual (Doc 9422)			
	d. Manual of Aircraft Accident and Incident Investigation (Doc 9756) - Part I & IV			
	e. Human Factors Training Manual (Doc 9683)			

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PHASE - 1- INITIAL TRAINING	f. Accident/Incident Reporting (ADREP)			
	g. Safety Oversight System (DOC 9734)			
	h. Safety Management Manual (Doc 9859)			
	i. Hazards at Aircraft Accident Sites. (Cir 315)			
	j. Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods. (Doc 9481)			
	k. Investigation of Human Factors in Accidents and Incidents (CIR 240)			
	l. Assistance to Aircraft Accident Victims and their families (CIR 285)			
PHASE - 1- INITIAL TRAINING	1.3 Cooperation with other agencies			
	a. MOU with other organizations			
	b. Liaison arrangement with local & national authorities			
	1.4 Accident Investigation Manuals & Procedures			
	a. Aircraft Accident Investigation Procedure Manual(SLCAP 9999)			
	b. AAIU Policy Manual (SLCAP 9990)			
	c. Aircraft Accident Investigation Management System (SLCAP 9999_10)			
	d. Ethics and conduct			

PHASE - 1- INITIAL TRAINING	Module -2 : Initial response procedures			
	a. On-call procedures			
	b. Notification of other national authorities and organizations			
	c. Accident site management & coordination with other agencies			
	d. Securing of records, recordings and samples			
	e. Accident site jurisdiction and security			
	f. Investigator safety including psychological stress			
	g. Recovery of human remains			
	h. Medical Examinations and requests for autopsies			
	i. Family assistance			
PHASE - 1- INITIAL TRAINING	Module - 3: Investigation Procedures			
	a. Authority and responsibility			
	b. Size and scope of the investigation			
	c. Investigation management			
	d. Use of specialists			
	e. Parties to the investigation			
	f. Release of information to the news media			

PHASE - 2- ON THE JOB TRAINING	PHASE - 2- ON THE JOB TRAINING			
	a. Investigation / OJT			
	b. Participation to investigation conduct by other States - as investigators			
	c. Participation to investigation conduct by other States - as observers			
	d. FDR analysis - OJT			
PHASE - 3- BASIC ACCIDENT INVESTIGATION COURSES	PHASE - 3- BASIC ACCIDENT INVESTIGATION COURSES			
	BASIC ACCIDENT INVESTIGATION - Initial			
	BASIC ACCIDENT INVESTIGATION - Recurrent			
	BASIC ACCIDENT INVESTIGATION - Recurrent			
	BASIC ACCIDENT INVESTIGATION - Recurrent			
	<i>General introduction</i>			
	<i>Accident notification procedures</i>			
	<i>Investigation management</i>			
	<i>Investigators' equipment</i>			
	<i>Accident site safety / site hazards</i>			
	<i>Protection of evidence</i>			
	<i>Initial action at the accident site</i>			
	<i>Information gathering techniques</i>			

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	<i>Communication and recording media</i>			
	<i>Witness interviews</i>			
	<i>Recorders</i>			
	<i>Examination of relevant maintenance documents</i>			
	<i>Fires and explosions</i>			
	<i>Survival aspects</i>			
	<i>Structures</i>			
	<i>Systems</i>			
	<i>Aerodynamics</i>			
	<i>Power plants</i>			
	<i>Rotary wing aircraft</i>			
	<i>Organizational information</i>			
	<i>Human performance</i>			
	<i>Determination of the flight crew's suitability for the flight</i>			
	<i>Methods of analyzing the factual information gathered</i>			
	<i>Report writing</i>			
	<i>The news media and public relations</i>			


PHASE - 4- ADVANCED ACCIDENT INVESTIGATION COURSES AND ADDITIONAL TRAINING	PHASE - 4- ADVANCED ACCIDENT INVESTIGATION COURSES AND ADDITIONAL TRAINING			
	ADVANCED ACCIDENT INVESTIGATION - Initial			
	ADVANCED ACCIDENT INVESTIGATION - Recurrent			
	ADVANCED ACCIDENT INVESTIGATION - Recurrent			
	<i>Family assistance</i>			
	<i>Cataloguing a large number of fragments of wreckage</i>			
	<i>Management of a large accident site</i>			
	<i>Briefings and answers to formal questions</i>			
	<i>Methods of undertaking investigations</i>			
	<i>Liaison with the law enforcement authorities</i>			
	<i>Special techniques - Glass cockpit, fly-by-wire system, GPS, EGPWS</i>			
	<i>Reconstruction of evidence</i>			
	<i>Virtual video presentations</i>			
	<i>Computer simulations</i>			
	<i>Flight simulators</i>			

PHASE - 5-SPECIALIZED TRAININGS	PHASE - 5-SPECIALIZED TRAININGS			
	Accident/Incident Prevention			
	Accident/Incident Prevention - recurrent			
	Ground Accident Prevention			
	Human Factors in accident investigation			
	Aviation Crisis Communication			
	Air Accident Safety Risk Management			
	Aircraft Accident Crisis Preparedness			
	Accident Site Hazards and Blood borne Pathogens			
	Aircraft Maintenance Investigation			
	Aircraft Performance Investigation			
	Cabin Accident Investigation			
	Electronic Systems Investigation			
	Fires and explosions Investigation			
	Accident Fire Hazard, protection and Investigation			
	Underwater Search and Recovery of Flight Recorders			
	Investigative Interviewing Techniques			
	ICAO Annex 13 Report writing			
	ECCAIR Software and End user programme			
	ECCAIR Software and End user programme - recurrent			

PHASE - 5- INTERNATIONAL FORUM/SOCIETY	PHASE - 6- INTERNATIONAL FORUM/SOCIETY			
	ISASI			
	IAI Forum			
	APRAST			
	APAC-AIG			
	Asia Pacific Reporting and Programme Ad hoc working Group			

The Authority makes the arrangements to conduct Aircraft Accident Investigation Training or Exercise with participation of investigators.

This training programme reflects training accomplished by the investigators and their future training needs. Based on needs identified from the above plan the Unit will prepare an annual/periodic training plan. The training plan will enable the Accident Investigation Unit to forecast annual budget needs to provide the necessary training of investigators.


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4.4 Periodic Training Plans

The AIU of CAASL normally develops the most recent periodic training plan by time to time and maintains training records for Investigators. The training records will be systematically retained.

Periodic Training Plan – 2011, 2012, 2013 & 2014

No	Meeting, Seminar, Workshop	Organizer of the Meeting , Seminar, Workshop	Country	Duration	Name of the Nominee with Designation
2011	Aviation Crisis Communication Workshop	SAA	Singapore	3 days	PA/AAI
2012				(16-18, May 2012)	
	Accident Investigation workshop	CAASL	Sri Lanka	10 days	CAA Investigators
2013	Familiarization on investigation	BEA	France	5 days	Investigator
	Air Accident Safety Risk Management	SAA	Singapore	3 days	PA/AAI
	FDR analysis - OJT	SAA	Singapore	3 days	Three Investigators
2014	ECCAIRS 5 End User	EU Commission	TBN	7 days	PA/AAI
	ICAO Annex 13 Report writing	SAA	Singapore	5 Days	TBN - Investigator
	Accident Investigation workshop	SAA	Singapore	10 Days	Investigator
	Advanced Accident Investigation Training	SAA	Singapore	5 days	Two Investigators
	ICAO – APAC Meeting	CAA – Sri Lanka	Sri Lanka	2 days	Two Administrative Staff and Chief Investigator
	Aircraft Accident & Incident Investigation Workshop	CAA – Sri Lanka	Sri Lanka	2 days	All investigators


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4.5 Past Training records of Investigators

A per Staff Training Policies and Procedures Manual SLCAP 5080 the training records are maintained by HROM Section. The HROM Section keep inform the AAIU of CAASL about the updates of training records. Thereby the training records of investigators including OJT will be retained by AAIU of CAASL.

Training Records - Aircraft Accident Investigators

Name of the Officer	Name of the Seminar/ Course/ Workshop/ Conference/ Meeting	Country	Duration
Mr. S.A. Jayawickrama	Search and Rescue Workshop	Thailand	6 to 8 Dec 2005
Dr. N.H. Gunarathne	54th Congress of the Aviation & Space Medicine	India	11 to 14 Sep 2006
CAASL Investigators	Aircraft Accident Investigation Workshop - COSCAP-SA	Sri Lanka	12 – 23 March, 2007
CAASL Investigators	Accident Investigation Exercise/Drill	Sri Lanka	23- 26 Sept, 2007
All CAASL investigators	Aircraft Accident Investigation Training	Sri Lanka	16 to 27 January 2012
Capt. N.A. Keil	FDR analysis - OJT	Singapore	16 th -17 th September 2013
Mr. Chaminda Wimalarathne	Advance Aircraft Accident Investigation Training	Singapore	21st to 25th July 2014
All CAASL Investigators	Regional Aircraft Accident and Incident investigation workshop	Sri Lanka	25-26 July 2015

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CHAPTER: 5

AIU OPERATIONS

5.1 Investigation of accidents and incidents

One of the key functions of the AIU of CAASL is handle the administrative functions pertaining to the investigation of accidents and incidents.


The AIU of CAASL has drawn up an Aircraft Accident Investigation Procedure Manual (SLCAP 9999) and Aircraft Accident Investigation Management System (SLCAP 9999_10). The Aircraft Accident Investigation Procedure Manual provides guidelines for investigators in their investigation of accidents and incidents. Furthermore, Aircraft Accident Investigation Management System, provides checklist which enable the investigators to follow the required check lists during a major investigation. These Manuals are not intended to be encyclopaedic references for the investigators. Further reference material is included in the Procedure Manual.

5.2 Release of Investigation reports

Final Report of an investigation into an accident or incident will be released as per the procedures laid down in the Aircraft Accident Investigation Procedure Manual SLCAP 9999. Protection of accident and incident investigation records

The Authority being the organization conducting the investigation of an accident or incident shall not make the following records available for purposes other than accident or incident investigation, unless the competent authority designated by Sri Lanka determines, in accordance with national laws, that their disclosure or use outweighs the likely adverse domestic and international impact such action may have on that or any future investigations:

- A. Cockpit voice recordings and airborne image recordings and any transcripts from such recordings; and
- B. Records in the custody or control of the Authority being:
 1. All statements taken from persons by the Authority in the course of their investigation;
 2. All communications between persons having been involved in the operation of the aircraft;
 3. Medical or private information regarding persons involved in the accident or incident;

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4. Recordings and transcripts of recordings from air traffic control units;
5. Analysis of and opinions about information, including flight recorder information, made by the Authority and accredited representatives in relation to the accident or incident; and
6. the draft Final Report of an accident or incident investigation.

The Authority will determine whether any other records obtained or generated by the accident investigation authority, as a part of an accident or incident investigation, need to be protected in the same way as the records listed above 5.2.

The records listed in 5.2 shall be included in the Final Report or its appendices only when pertinent to the analysis of the accident or incident. Parts of the records not relevant to the analysis shall not be disclosed.

The Final Report that has been released will be made downloadable from the CAASL website.


5.3 Making safety recommendations

The Chief Investigator may make safety recommendations at any stage during the course of an investigation. They do not need to wait till the completion of an investigation to make any recommendations.

In addition, the Authority may also make safety recommendations to a person or authority in Sri Lanka arising from safety information that they has gathered from other sources

If safety recommendations are addressed to an organization in another State, they should also be transmitted to that State's investigation authority. A safety recommendation shall in no case create a presumption of liability for an accident or incident.

If safety recommendations are issued to a person or authority in Sri Lanka arising from an investigation conducted by the Authority, or issued to a person or authority in Sri Lanka by a foreign investigation authority and made known to the Authority, the Authority has the power to require and will require such persons or authorities in Sri Lanka to:

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- take those recommendation into consideration and, where appropriate, act upon them;
- provide the Authority with the full details of the measures, if any, that they have taken or propose 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.

For safety recommendations issued to a person or authority in Sri Lanka by a foreign investigation authority and made known to the Authority, and will notify the foreign investigation authority of the preventive action taken or under consideration or the reasons why no action will be taken.


In respect of safety recommendations made to a person or authority outside Sri Lanka, the Authority does not have the power to require such persons or authorities to furnish information on action taken or to be taken or to furnish an explanation as to why no action will be taken. However, the Authority will endeavor to obtain such information through the accident investigation authorities of the Contracting States concerned.

The Authority will record the responses to the safety recommendations and monitors the progress of any action taken in response to these safety recommendations issued by Authority or received by Authority from foreign Investigation Bodies. The Authority will review and decide on the closure status of the recommendations based on the actions taken by the respective entities.

5.4 Voluntary Aviation Occurrence Reporting System

ICAO recommends in Annex 13 that a State should establish a voluntary non-punitive incident reporting system that affords protection to the sources of the information. The purpose of such a system is to complement the mandatory incident reporting system in the gathering of safety information.

While the mandatory reporting of accidents and incidents will often result in investigations and safety recommendations, many incidents that have potential in helping to enhance safety go unreported. Very often, the parties involved in such incidents did not make a

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report for fear of punitive action by the authorities. Thus, many opportunities to learn from the incidents, and to prevent incidents, are lost.

The principal aim of Voluntary Aviation Occurrence Reporting System is to enhance aviation safety through the collection of feedback on incidents that would otherwise not be reported through other channels or that may appear minor, but which nevertheless can allow others to learn from the reporter's experience and even lead to changes in procedures or design. However, the programme does not obviate the need for mandatory reporting of aircraft accidents and incidents to the relevant authorities.

The Authority has published Implementing Standard 006 in order to implement Mandatory Aviation Occurrence System and Voluntary Aviation Occurrence Reporting System. The Voluntary Aviation Occurrence Reporting System is a confidential and non-punitive. It provides a channel for the reporting of aviation incidents and safety deficiencies while protecting the reporter's identity. However, a report must not be anonymous or contain unverifiable information. A reporter must provide contact details to the Authority. The Authority will not disclose the name of the person submitting the report or of a person to whom it relates unless required to do so by law or unless, the person concerned authorizes such disclosure.

This reporting focuses on systems, human factors, procedures and equipment, rather than on individuals. The areas covered by the programme include, departure/ en-route/ approach/ landing operations, ATC operations, ATC equipment and navigation aids, crew and ATC communications, aircraft cabin operations, aircraft ground operations, movement on the airport, near midair collisions, aircraft maintenance and record keeping, safety-related passenger and cargo operations, fueling operations, airport conditions or services and any others aviation-safety related issues.

Criminal activities, Incidents or events with no aviation safety content, Personnel problems, personality conflicts and industrial relations issues and Legal/commercial disputes should not be reported.

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When publishing voluntary reports, the CAA will remove the information and data which is likely to identify the reporter unless the person concerned authorizes disclosure. Anonymous reports will not be accepted. Reporters contact details are needed.

Such reports will be directed to relevant Divisional/Sectional Head with a copy to Accident Investigation Unit by the DGCA for review personally by relevant Sectional head for the subject matter.

The Sectional Head will take possible measures to contact the reporter, by telephone if possible, to acknowledge receipt, discuss implications or obtain further information as appropriate. A course of action will be mutually agreed.

After discussions with the reporter have been completed and when the CAASL is satisfied that the information obtained is complete and coherent, de-identify the information and enter the data into the database. The original report will be destroyed (shredded). No copy of the report will be created or retained.

The time needed to process the report depends on the complexity of the case and whether the CAASL needs to discuss the case with the reporter or consult a third party (using de-identified data).


The CAASL will pay particular attention to the need to protect the identity of the reporter in its processing of Voluntary/Confidential Occurrence Reports.

Relevant de-identified reports and extracts will be shared with the aviation community periodically, so that all can learn from the experiences and that the relevant authorities and parties can review their policy and plan for improvements. However, if the content of a report suggests a situation or condition that poses an immediate or urgent threat to aviation safety, the report will be handled with priority and referred, after de-identification, to the relevant organizations as soon as possible to enable them to take the necessary safety action.

5.5 Dissemination of safety information

5.5.1 Introduction

ICAO's stated sole objective of investigation is the prevention of accidents and incidents. Safety recommendations to address safety deficiencies are important products of an investigation exercise. The recommendations will prompt the relevant organizations to take the necessary safety enhancement action.

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ICAO considers it equally important that the investigation reports be widely circulated, so that as many as possible can benefit from the safety lessons learnt.

It cannot be overemphasized that States should take the time and trouble to review other States' investigation reports and any other available accident investigation and prevention related information, with a view to reflecting on the accidents and incidents and drawing lessons from them to ensure there will be no similar occurrences in their States or involving their operators.

5.5.2 Information received by the AIU

In this respect, the AIU of CAASL takes on a role of reviewing foreign accident investigation and prevention related information with a view to disseminating to the relevant organizations and highlighting the lessons that can be learnt and, where applicable, making specific recommendations.


The AIU has to maintain contacts with many of the investigation authorities in the advanced aviation nations. Through this network of accident investigation professionals, the AIU receives useful accident investigation and prevention related information.

5.5.3 Sharing of information

AIU of the Authority will share the information with some or all of the following groups of people and organizations (depending on the nature of the issues raised) in the hope that they can take note of the lessons learnt and, where applicable, initiate safety improvement action.

- Aerodrome operators
- Air operators
- Aircraft maintenance companies
- Other government agencies, e.g. Meteorological Services Agency

Most of the information is of a technical nature. The AIU does not, as a routine, copy the information to other organizations. However, the AIU will share the information with other organizations if it is unusual in some aspects or if a significant potential or real deficiency exists in Sri Lanka.

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5.6 Accident and incident databases

The AIU will maintain accident and incident databases for the following:

- Accidents and significant incidents in Sri Lanka
- Accidents and significant incidents elsewhere involving aircraft registered in Sri Lanka or aircraft operated by air operators of Sri Lanka. (whether or not the Authority has participated in the investigations conducted by the foreign authorities)

5.6.1 Review of accident and incident databases


The AIU will maintain the ECCAIRS database for all categories of occurrences. The relevant technical sections review the accident and incident data using the above database as they all have provided the access.

The objectives of the review include the following:

- To determine any preventive actions required.
- To identify additional types of incidents to be included in the monitoring
- To decide if certain types of incidents need not be monitored further
- To identify areas where more depth may be needed in the monitoring of incidents.

In reviewing the accident and incident database, the following will also be taken into consideration:

- Safety recommendations issued by the Authority and the closure actions taken by the parties concerned.
- Reports from the voluntary, confidential and non-punitive incident reporting programme.
- Accident and incident reports and safety recommendations issued by foreign authorities
- Safety recommendations from other sources (including safety studies).
- Any other relevant aviation safety information that Authority is aware of.

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5.6.2 Sharing of information


If safety matters considered to be of interest to other States or to the industry are identified in the review of the accident and incident databases, the Authority will forward the information to the States or share the information with the industry as soon as possible.

5.7 Dialogue with Industry

The AIU will maintain dialogue with the industry, such as the aerodrome operators, carriers, foreign carriers that operate in Sri Lanka and the aviation maintenance, repair and overhaul companies.

The AIU aims to achieve the following through the dialogue sessions with the various companies in the industry:

- To ensure the companies are aware of AIU's set-up, contact numbers, roles and functions.
- To get to know the key personnel in the companies who will likely be involved in an AIU investigation (e.g. the carriers' quality assurance and safety officials, the local representatives of the foreign airlines), which would facilitate better coordination during the investigation.
- To gain an idea of the companies' operational and staffing profiles and of their crisis management plans.
- To ensure the companies are aware of investigation legislation, to highlight the key features in the legislation and to provide an update on the legislation changes, if any.
- To explain the coordination and investigation procedures detailed in the airport operators' emergency plans and to highlight the roles that the companies can play.
- To promote the voluntary, confidential and non-punitive incident reporting programme
- To encourage sharing of safety information
- To obtain feedback from the companies regarding coordination and investigation procedures.

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CHAPTER 6


INVESTIGATION CONDUCTED BY ANOTHER STATES

6.1 Authority's Participation as State of Registry, State of the Operator, State of Manufacture or State of Design in an Investigation conducted by another State.

Where an accident or incident has occurred outside Sri Lanka and involve Authority as the State of Registry, State of the Operator, State of Manufacture or State of Design, the Authority will assist and support the investigation authority of the State conducting the investigation as necessary.

In particular, if an aircraft registered in Sri Lanka or an aircraft operated by an operator of Sri Lanka is involved in an accident or a serious incident and has landed outside the State of Occurrence, the Authority will, on request from the State conducting the investigation, furnish the latter State with the flight recorder records and, if necessary, the associated flight recorders.

The Authority will be entitled to appoint an accredited representative and advisers to participate in the investigation.

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6.2 Provision of information, facilities or experts

Paragraphs 5.14, 5.15 and 5.17 of Annex 13 state that:

“5.14 Any State shall, on request from the State conducting the investigation of an accident or an incident, provide that State with all the relevant information available to it.”


“5.15 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 States conducting the investigation.”

“5.17 The State of Registry and the State of the Operator, on request from the State conducting the investigation, shall provide pertinent information on any organization whose activities may have directly or indirectly influenced the operation of the aircraft.”

The Authority will assist the investigation authority of the State conducting the investigation in gathering the information sought by the latter.

It is noted that if Authority provides, on requests, information, facilities or experts to the State conducting the investigation, Authority will be entitled to appoint an accredited representative to participate in the investigation.

In this respect, the Act empowers the Authority to appoint an accredited representative and one or more advisers to assist the accredited representative

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6.3 Foreign accidents involving fatalities or serious injuries to of Sri Lanka

Paragraph 5.27 of Annex 13 states that:

“A State which has a special interest in an accident by virtue of fatalities or serious injuries to its citizens shall, upon making a request to do so, be permitted by the State conducting the investigation to appoint an expert who shall be 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.”

Where Sri Lanka 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 Authority may appoint an expert to participate in the foreign investigation. The Authority will approach the investigation authority of the State conducting the investigation if there is a need for such an expert to be appointed.


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CHAPTER 7: REFERENCES

REFERENCE MATERIAL

Listed below are useful materials that all investigators should familiarize themselves with:

- Aircraft Accident Investigation Procedure Manual (SLCAP 9999)
- Aircraft Accident Investigation Management System (SLCAP 9999_10)
- ICAO Annex 13, 11th Eleventh Edition, July 2016
- ICAO Manual of Aircraft Accident and Incident Investigation (Doc 9756)
 - Part I- Organization and Planning
 - Part II- Procedures and Checklists
 - Part III- Investigation
 - Part IV- Reporting
- ICAO Manual of Aircraft Accident Investigation (Doc 6920)
- ICAO Doc 9946 – Manual on Regional Accident and Incident Investigation Organization
- ICAO Safety Management Manual – 1st edition, 2006 (Doc 9859)
- ICAO Safety Oversight Manual - Part A (Doc. 9734 – AN/959)
- ICAO Manual of Accident Prevention (Doc 9422)
- ICAO Manual of Human Factors Training (Doc 9683)
- ICAO 9962- Manual on Accident and Incident Investigation Policies and Procedures
- ICAO Training Guidelines for Aircraft Accident Investigators (Cir No. 298)
- ICAO Circular - Investigation of Human Factors in Accidents and Incidents (Cir No 240)
- ICAO Circular - Hazards at Aircraft Accident Sites – 2008 (Cir 315-AN/179)

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APPENDIX -1- JOB DESCRIPTION - CHIEF INVESTIGATOR

Nature and scope of duties:

To be able to response or perform investigations effectively to any aircraft accident or incident that may occur in Sri Lanka or to any aircraft registered in Sri Lanka wherever it may be, in compliance with the requirements stipulated by the Civil Aviation Authority of Sri Lanka and in conformity with the standards of ICAO.

Investigators will work under the direction of the Authority and conduct accident/serious incident investigations.

Major Duties:

Serves as Chief Investigator with the responsibility for managing all phases of major catastrophic aircraft accident investigations. This involves the supervision and control of the investigation team Prepares, and presents the comprehensive narrative accident reports, which contain complex and highly significant aviation safety issues that have recommendations to prevent similar accidents. Develop safety recommendation proposals which address complicated, technical aviation problems.


Qualifications:

Specialized experience must include a broad knowledge of aviation accident investigation practices, procedures, and techniques.

Applicants who meet the minimum qualifications will be further evaluated to determine the extent to which their education, work related experience, training, awards, and supervisory appraisals indicate they possess or have the potential to acquire knowledge, skills, abilities and personal characteristics required to perform the duties and responsibilities described above.

Applicants must also have demonstrated the following knowledge, skills, or abilities to be minimally qualified for this position;

1. Skill as a Chief Investigator, team leader or report writer for catastrophic aviation accident investigations.
2. Skill in writing technical reports.
3. Skill in making oral presentations.
4. Ability to conduct complex aviation accident investigations.
5. Ability to supervise or manage others.
6. Knowledge of flight operations.
7. Pilot certificates and training.


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Job Requirements and working Conditions:

The incumbent will be required to remain "On call" for travel to investigative assignments outside normal work hours. They will frequently be given investigative assignments on short notice.

Since the major portion of the work an accident investigator does will be at the accident scene, this position requires local and overseas travel at short notice with extended overnight stay and irregular working schedules, as the situation demands. Travel may be in aircraft or by ground transportation over rough roads. An incumbent may be exposed to aircraft noise, moving machinery, dust, high voltage electricity, dangerous goods, electromagnetic radiation, extreme weather conditions (approximately 50% of the work is out of doors) and stressful pathological sceneries and conditions etc. Incumbents may have to walk, hike and climb for extended periods of time over moderately rough terrain in a variety of physically challenging conditions including swamps, mountains and/or on concrete or asphalt in adverse topographic, weather, and atmospheric conditions. The incumbent needs to realize the element of possible risks and health hazards due to contaminated items at accident sites. The incumbent may be required to undergo mandatory vaccination against certain diseases on periodical basis. Investigators are required to wear and operate appropriate personal protective equipment, carry all necessary equipment, tools and instruments to document all findings as they may photograph, video tape, make measurements and take notes while at the accident scene.

The incumbent must be able to physically maneuver around the accident site, which includes frequently climbing in, out, and on various parts of the wreckage for the purpose of documenting and gathering evidence. The position requires organizational and technical writing skills. Incumbent must be able to speak and write English. The incumbent must be capable of assembling and organizing technical data, preparing comprehensive and logical factual and analytical reports, and making effective oral presentations regarding your findings. In meetings or conferences, incumbent might be called upon to present, interpret, and maintain the positions and views to exchange information, and to interpret practices, procedures, or regulations.

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APPENDIX -2- JOB DESCRIPTION - FLIGHT OPERATIONS INVESTIGATOR

Nature and scope of duties:

To be able to response or perform investigations effectively to any aircraft accident or incident that may occur in Sri Lanka or to any aircraft registered in Sri Lanka wherever it may be, in compliance with the requirements stipulated by the Civil Aviation Authority of Sri Lanka and in conformity with the standards of ICAO.

Investigators will work under the direction of the Authority and conduct accident/serious incident investigations.

Major Duties:


Investigates major air carrier accidents and selected incidents especially those involving new or large turbojet airplanes. May be assigned to investigate or participate in accident investigations in foreign countries. Also, may be assigned to special investigations involving significant safety issues. Investigative work involves on-scene organization and supervision of group members representing various organizations to objectively document operational factors including flight crew qualifications, training, experience, and performance; aircraft performance; air carrier operations; airport operations; airborne and ground navigation systems; operational procedures and air traffic control. Additional areas of investigation may include witness, pilot, and flight crew statements and meteorological or environmental conditions that may have contributed to the accident or incident. Writes factual and analytical reports that document investigative findings and conclusions. Develops safety recommendations to prevent accidents and promote safety. A major portion of the work requires the incumbent to possess technical writing skill in assembling and organizing factual data, preparing comprehensive and logical factual and analytical reports, preparing specialized analyses, and developing conclusions based on such data. In meetings and conferences, the incumbent may be called upon to orally present, interpret, and maintain the position and views. The incumbent may be required to exchange information and views, practices, procedures, and regulations.

Specialized work experience;

Specialized experience in commercial airline flight crew training or the safety aspects of commercial airline flight operations. One full year of experience acquired within the past years as an aircraft accident investigator, instructor in aircraft accident investigation, full-time operator or manager of a civil airport, flight safety officer, safety engineer, or accident prevention specialist counts as 100 hours of total number of pilot-in-command flight hours required during the last six years.

The following knowledge, skills or abilities are essential to the successful performance of the duties described;

1. Knowledge of international domestic, scheduled, and supplemental commercial air carrier flight operations.

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2. Knowledge of approved commercial piloting techniques and commercial pilot training and check programs.
3. Knowledge of aircraft dispatching, airport requirements, and commercial aircraft maintenance practices and procedures.
4. Knowledge of aviation accident investigation practices, techniques, and procedures.
5. Ability to write detailed and comprehensive technical reports.

Job requirements and working conditions;

The incumbent will be required to remain "On call" for travel to investigative assignments outside normal work hours. They will frequently be given investigative assignments on short notice.

Since the major portion of the work an accident investigator does will be at the accident scene, this position requires local and overseas travel at short notice with extended overnight stay and irregular working schedules, as the situation demands. Travel may be in aircraft or by ground transportation over rough roads. An incumbent may be exposed to aircraft noise, moving machinery, dust, high voltage electricity, dangerous goods, electromagnetic radiation, extreme weather conditions (approximately 50% of the work is out of doors) and stressful pathological sceneries and conditions etc. Incumbents may have to walk, hike and climb for extended periods of time over moderately rough terrain in a variety of physically challenging conditions including swamps, mountains and/or on concrete or asphalt in adverse topographic, weather, and atmospheric conditions. The incumbent needs to realize the element of possible risks and health hazards due to contaminated items at accident sites. The incumbent may be required to undergo mandatory vaccination against certain diseases on periodical basis. Investigators are required to wear and operate appropriate personal protective equipment, carry all necessary equipment, tools and instruments to document all findings as they may photograph, video tape, make measurements and take notes while at the accident scene.

The incumbent must be able to physically maneuver around the accident site, which includes frequently climbing in, out, and on various parts of the wreckage for the purpose of documenting and gathering evidence. The position requires organizational and technical writing skills. Incumbent must be able to speak and write English. The incumbent must be capable of assembling and organizing technical data, preparing comprehensive and logical factual and analytical reports, and making effective oral presentations regarding your findings. In meetings or conferences, incumbent might be called upon to present, interpret, and maintain the positions and views to exchange information, and to interpret practices, procedures, or regulations.

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APPENDIX -3- JOB DESCRIPTION - HUMAN FACTORS / MEDICAL INVESTIGATOR

Nature and scope of duties:

To be able to response or perform investigations effectively to any aircraft accident or incident that may occur in Sri Lanka or to any aircraft registered in Sri Lanka wherever it may be, in compliance with the requirements stipulated by the Civil Aviation Authority of Sri Lanka and in conformity with the standards of ICAO.

Investigators will work under the direction of the Authority and conduct accident/serious incident investigations.

Major Duties:


Incumbent serves as Human Performance Investigator with primary responsibility and expertise in psychological, physiological, and human engineering factors concerning aviation accident causation. Investigative responsibilities include such areas as operating practices and procedures; training; duty/rest cycles; fatigue; workload; control/display systems; crew coordination; situational awareness; and decision-making. Incumbent organizes and coordinates the activities of participating government and industry personnel in aviation accident investigations; determines requirements for special tests and studies, and evaluates their findings. Incumbent is responsible for developing and preparing documentation that accurately reflects pertinent findings in the human performance/human factors areas and for collaborating in the preparation of formal aviation accident reports. Other duties include participating in public hearings, initiating and developing safety recommendations and conducting studies of behavioral involvement in accident causation.

Qualifications:

The basic requirement as a Human Factors Investigator is successful completion of a degree in a relevant discipline. At least one year of specialized experience equivalent to the next lower grade is required. Graduate education up to and including the Ph.D. or equivalent doctoral degree is preferred. Specialized experience is experience which is in or directly related to the responsibilities of the position to be filled and which has equipped the applicant with the particular knowledge, skills, and abilities to successfully perform the duties of the position. To be creditable, specialized experience must have been at least equivalent to the next lower grade level in the normal line of progression for the occupation in the organization.

The following knowledge, skills or abilities are essential to the successful performance of the duties described.

1. Knowledge of human factors.
2. Ability to write detailed and comprehensive technical reports.
3. Knowledge of practices in the aviation industry such as airlines, air traffic control system, and airframe or avionics manufacturers.

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4. Knowledge of current issues in aviation human factors.
5. Ability to identify research needed to further the study of human factor issues and concerns in the aviation industry.

Job requirements and working conditions;

The incumbent will be required to remain "On call" for travel to investigative assignments outside normal work hours. They will frequently be given investigative assignments on short notice.

Since the major portion of the work an accident investigator does will be at the accident scene, this position requires local and overseas travel at short notice with extended overnight stay and irregular working schedules, as the situation demands. Travel may be in aircraft or by ground transportation over rough roads. An incumbent may be exposed to aircraft noise, moving machinery, dust, high voltage electricity, dangerous goods, electromagnetic radiation, extreme weather conditions (approximately 50% of the work is out of doors) and stressful pathological sceneries and conditions etc. Incumbents may have to walk, hike and climb for extended periods of time over moderately rough terrain in a variety of physically challenging conditions including swamps, mountains and/or on concrete or asphalt in adverse topographic, weather, and atmospheric conditions. The incumbent needs to realize the element of possible risks and health hazards due to contaminated items at accident sites. The incumbent may be required to undergo mandatory vaccination against certain diseases on periodical basis. Investigators are required to wear and operate appropriate personal protective equipment, carry all necessary equipment, tools and instruments to document all findings as they may photograph, video tape, make measurements and take notes while at the accident scene.

The incumbent must be able to physically maneuver around the accident site, which includes frequently climbing in, out, and on various parts of the wreckage for the purpose of documenting and gathering evidence. The position requires organizational and technical writing skills. Incumbent must be able to speak and write English. The incumbent must be capable of assembling and organizing technical data, preparing comprehensive and logical factual and analytical reports, and making effective oral presentations regarding your findings. In meetings or conferences, incumbent might be called upon to present, interpret, and maintain the positions and views to exchange information, and to interpret practices, procedures, or regulations.

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APPENDIX -4- JOB DESCRIPTION - AIR TRAFFIC CONTROL INVESTIGATOR

Nature and scope of duties:

To be able to response or perform investigations effectively to any aircraft accident or incident that may occur in Sri Lanka or to any aircraft registered in Sri Lanka wherever it may be, in compliance with the requirements stipulated by the Civil Aviation Authority of Sri Lanka and in conformity with the standards of ICAO.

Investigators will work under the direction of the Authority and conduct accident/serious incident investigations.

Major Duties:


Supervises and directs to analyze the air traffic control aspects of aviation incidents and accidents. Focuses on the history of the flight; recorded ATC communications and associated transcripts; controller interviews, training and experience; related surface weather observations; recorded radar computer data; ATC procedures; ATC facility operations; ATC equipment maintenance records; etc. Prepares detailed written factual reports of the facts, conditions, and circumstances pertaining to the air traffic control aspects of the accident and prepares comprehensive analytical reports describing the findings and conclusions. Initiates special research projects, studies, and investigations concerning the air traffic control aspects of aviation accidents and ascertains what will best tend to reduce or eliminate the possibility of or recurrence of accidents. Develops safety recommendations to prevent accidents and promote safety.

Qualifications:

Specialized experience is experience in a military or civilian air traffic facility which must have involved the separation and control of air traffic or the providing of pre-flight, in flight, or airport advisory service to aircraft operators.

The following knowledge, skills or abilities are essential to the successful performance of the duties described;

1. Skill as Air Traffic Controller within 6 years.
2. Ability to write detailed and comprehensive technical reports.
3. Knowledge of air traffic control regulations, practices and procedures.
4. Knowledge of en route or terminal radar systems and radar data recording capabilities.
5. Knowledge of aviation accident investigation practices, techniques and procedures.
6. Knowledge of aircraft dispatching and airport operations.


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Job requirements and working conditions;

The incumbent will be required to remain "On call" for travel to investigative assignments outside normal work hours. They will frequently be given investigative assignments on short notice.

Since the major portion of the work an accident investigator does will be at the accident scene, this position requires local and overseas travel at short notice with extended overnight stay and irregular working schedules, as the situation demands. Travel may be in aircraft or by ground transportation over rough roads. An incumbent may be exposed to aircraft noise, moving machinery, dust, high voltage electricity, dangerous goods, electromagnetic radiation, extreme weather conditions (approximately 50% of the work is out of doors) and stressful pathological sceneries and conditions etc. Incumbents may have to walk, hike and climb for extended periods of time over moderately rough terrain in a variety of physically challenging conditions including swamps, mountains and/or on concrete or asphalt in adverse topographic, weather, and atmospheric conditions. The incumbent needs to realize the element of possible risks and health hazards due to contaminated items at accident sites. The incumbent may be required to undergo mandatory vaccination against certain diseases on periodical basis. Investigators are required to wear and operate appropriate personal protective equipment, carry all necessary equipment, tools and instruments to document all findings as they may photograph, video tape, make measurements and take notes while at the accident scene.

The incumbent must be able to physically maneuver around the accident site, which includes frequently climbing in, out, and on various parts of the wreckage for the purpose of documenting and gathering evidence. The position requires organizational and technical writing skills. Incumbent must be able to speak and write English. The incumbent must be capable of assembling and organizing technical data, preparing comprehensive and logical factual and analytical reports, and making effective oral presentations regarding your findings. In meetings or conferences, incumbent might be called upon to present, interpret, and maintain the positions and views to exchange information, and to interpret practices, procedures, or regulations.

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APPENDIX -5- JOB DESCRIPTION - METEOROLOGICAL INVESTIGATOR

Nature and scope of duties:

To be able to response or perform investigations effectively to any aircraft accident or incident that may occur in Sri Lanka or to any aircraft registered in Sri Lanka wherever it may be, in compliance with the requirements stipulated by the Civil Aviation Authority of Sri Lanka and in conformity with the standards of ICAO.

Investigators will work under the direction of the Authority and conduct accident/serious incident investigations.

Major Duties:

Serves as a Meteorologist with primary emphasis on the investigation and analysis of weather-related aspects of aviation incidents and accidents. Collects, analyzes, evaluates, and interprets meteorological data used to predict weather. Identifies safety issues associated with meteorology. Also serves as the meteorology group leader for major accidents. Supervises and directs technical groups formed to investigate the meteorological aspects of accidents. Prepares detailed written factual reports of the facts, conditions, and circumstances pertaining to the meteorological aspects of the accident and prepares comprehensive analytical reports describing the findings and conclusions. Initiates special research projects, studies, and investigations concerning the meteorological aspects of transportation hazards and ascertains what will best tend to reduce or eliminate the possibility of or recurrence of accidents. Develops safety recommendations to prevent accidents and promote safety.


Qualification:

The basic requirement is successful completion of a course of study in an accredited college or university leading to a Bachelor of Science or higher degree with a major field of study in meteorology, atmospheric science, or other natural science.

The basic requirements can also be met by a combination of education and experience including the course work of physical hydrology, statistics, chemistry, physical oceanography, physical climatology, radioactive transfer, aeronomy, advanced thermodynamics, advanced electricity and magnetism, light and optics and computer science plus appropriate experience or additional education.

The following knowledge, skills or abilities are essential to the successful performance of the duties described;

1. Knowledge of aviation weather forecasting including collecting, interpreting and disseminating aviation weather information.
2. Knowledge of aviation weather hazards.
3. Ability to develop and manage technical meteorological studies.

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4. Ability to write detailed and comprehensive technical reports.
5. Ability to write meteorological computer programs.
6. Knowledge of aircraft dispatching, airport requirements and air traffic control practices and procedures.
7. Knowledge of transportation accident investigation practices, techniques and procedures.
8. Ability to use computer based weather data and analysis systems.

Job requirements and working conditions;

The incumbent will be required to remain "On call" for travel to investigative assignments outside normal work hours. They will frequently be given investigative assignments on short notice.

Since the major portion of the work an accident investigator does will be at the accident scene, this position requires local and overseas travel at short notice with extended overnight stay and irregular working schedules, as the situation demands. Travel may be in aircraft or by ground transportation over rough roads. An incumbent may be exposed to aircraft noise, moving machinery, dust, high voltage electricity, dangerous goods, electromagnetic radiation, extreme weather conditions (approximately 50% of the work is out of doors) and stressful pathological sceneries and conditions etc. Incumbents may have to walk, hike and climb for extended periods of time over moderately rough terrain in a variety of physically challenging conditions including swamps, mountains and/or on concrete or asphalt in adverse topographic, weather, and atmospheric conditions. The incumbent needs to realize the element of possible risks and health hazards due to contaminated items at accident sites. The incumbent may be required to undergo mandatory vaccination against certain diseases on periodical basis. Investigators are required to wear and operate appropriate personal protective equipment, carry all necessary equipment, tools and instruments to document all findings as they may photograph, video tape, make measurements and take notes while at the accident scene.

The incumbent must be able to physically maneuver around the accident site, which includes frequently climbing in, out, and on various parts of the wreckage for the purpose of documenting and gathering evidence. The position requires organizational and technical writing skills. Incumbent must be able to speak and write English. The incumbent must be capable of assembling and organizing technical data, preparing comprehensive and logical factual and analytical reports, and making effective oral presentations regarding your findings. In meetings or conferences, incumbent might be called upon to present, interpret, and maintain the positions and views to exchange information, and to interpret practices, procedures, or regulations

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APPENDIX -6- JOB DESCRIPTION - SURVIVAL FACTORS INVESTIGATOR

Nature and scope of duties:

To be able to response or perform investigations effectively to any aircraft accident or incident that may occur in Sri Lanka or to any aircraft registered in Sri Lanka wherever it may be, in compliance with the requirements stipulated by the Civil Aviation Authority of Sri Lanka and in conformity with the standards of ICAO.

Investigators will work under the direction of the Authority and conduct accident/serious incident investigations.

Major Duties:


Incumbent serves as Survival Factors Investigator with primary responsibility and expertise in pathology, forensic science, injury mechanisms and causation, and engineering factors concerning the crashworthiness of aircraft and the survivability of persons involved in aviation accidents. Investigative responsibilities include examining and reporting on such areas as safety procedures, equipment design, emergency responsiveness, fire fighting and rescue techniques, medical care technology, crewmember emergency procedures training, and airport operations. Incumbent organizes and coordinates the activities of participating government, medical, and industry personnel in aviation accident investigations; determines requirements for special tests and studies, and evaluates their findings. May also be responsible for supervising the reconstruction of occupied space inside of accident aircraft. Incumbent is responsible for developing and preparing documentation that accurately reflects pertinent findings in the survival factors areas and for collaborating in the preparation of formal aviation accident reports. Other duties include initiating and developing safety recommendations, and conducting special studies in the areas of crashworthiness, aircraft evacuation, and occupant survival and protection.

Qualifications:

The basic requirement as a Survival Factors Investigator is successful completion of a engineering curriculum leading to a bachelor's or higher degree from an accredited college or university, or knowledge and understanding equivalent to this education such as valid registration as a professional engineer and specialized experience.

The following knowledge, skills or abilities are essential to the successful performance of the duties described;

1. Knowledge of aircraft occupant survivability issues.
2. Knowledge of aircraft crashworthiness factors.
3. Knowledge of aviation accident investigation techniques, practices, and procedures.
4. Knowledge of aviation industry crashworthiness and survival standards.
5. Ability to write detailed and comprehensive technical reports.


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Job Requirements and working conditions:

The incumbent will be required to remain "On call" for travel to investigative assignments outside normal work hours. They will frequently be given investigative assignments on short notice.

Since the major portion of the work an accident investigator does will be at the accident scene, this position requires local and overseas travel at short notice with extended overnight stay and irregular working schedules, as the situation demands. Travel may be in aircraft or by ground transportation over rough roads. An incumbent may be exposed to aircraft noise, moving machinery, dust, high voltage electricity, dangerous goods, electromagnetic radiation, extreme weather conditions (approximately 50% of the work is out of doors) and stressful pathological sceneries and conditions etc. Incumbents may have to walk, hike and climb for extended periods of time over moderately rough terrain in a variety of physically challenging conditions including swamps, mountains and/or on concrete or asphalt in adverse topographic, weather, and atmospheric conditions. The incumbent needs to realize the element of possible risks and health hazards due to contaminated items at accident sites. The incumbent may be required to undergo mandatory vaccination against certain diseases on periodical basis. Investigators are required to wear and operate appropriate personal protective equipment, carry all necessary equipment, tools and instruments to document all findings as they may photograph, video tape, make measurements and take notes while at the accident scene.

The incumbent must be able to physically maneuver around the accident site, which includes frequently climbing in, out, and on various parts of the wreckage for the purpose of documenting and gathering evidence. The position requires organizational and technical writing skills. Incumbent must be able to speak and write English. The incumbent must be capable of assembling and organizing technical data, preparing comprehensive and logical factual and analytical reports, and making effective oral presentations regarding your findings. In meetings or conferences, incumbent might be called upon to present, interpret, and maintain the positions and views to exchange information, and to interpret practices, procedures, or regulations.

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APPENDIX -7- JOB DESCRIPTION -AIRCRAFT POWER PLANTS INVESTIGATOR

Nature and scope of duties:

To be able to response or perform investigations effectively to any aircraft accident or incident that may occur in Sri Lanka or to any aircraft registered in Sri Lanka wherever it may be, in compliance with the requirements stipulated by the Civil Aviation Authority of Sri Lanka and in conformity with the standards of ICAO.

Investigators will work under the direction of the Authority and conduct accident/serious incident investigations.

Major Duties:


Serves as an Aerospace Engineer (Aircraft Power plants) Investigator with primary responsibility for providing engineering expertise on aircraft power plant design, manufacturing, certification, and maintenance in the investigation of air carrier and aviation accidents and incidents. Applies engineering techniques in directing the on-scene and subsequent testing phases of power plant aspects of aircraft accident investigations; also investigates and documents records and practices relating to maintenance, certification, and manufacturing of power plants and their related systems in coordination with other investigative groups. Prepares technical reports of investigation findings to assist in determining causal factors in accidents; prepares and directs studies to address safety issues; and prepares accident prevention recommendations to manufacturers and operators to correct safety deficiencies.

Qualifications:

The basic requirement is successful completion of a aerospace or mechanical engineering curriculum leading to a bachelor's or higher degree from an accredited college or university, or knowledge and understanding equivalent to this education. In addition to meeting the basic requirements, should have at least more than two year of appropriate professional engineering experience.

The following knowledge, skills or abilities are essential to the successful performance of the duties described;

1. Knowledge of aircraft power plants and their associated systems.
2. Knowledge of aircraft turbine engine certification, manufacturing and/or maintenance standards and practices.
3. Knowledge of aviation engineering theory and practice as evidenced by advanced or multiple engineering degrees or extensive aviation engineering experience.
4. Knowledge of certification and manufacturing of large aircraft turbine power plant and related systems.

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5. Knowledge of maintenance and inspection standards, practices and procedures applicable to aircraft turbine power plants and related systems used in transport category aircraft.
6. Knowledge of the commercial airline industry as evidenced by certification and work experience as a Commercial or Airline Transport Pilot, Flight Engineer, and/or Airframe and Power Plant Mechanic.
7. Ability to conduct accident/incident investigations or failure analysis of turbine aircraft engines and related aircraft systems.
8. Knowledge and skill in technical writing and making oral presentations especially as they relate to aircraft accident investigation and failure analysis.

Job requirements and working conditions:

The incumbent will be required to remain "On call" for travel to investigative assignments outside normal work hours. They will frequently be given investigative assignments on short notice.

Since the major portion of the work an accident investigator does will be at the accident scene, this position requires local and overseas travel at short notice with extended overnight stay and irregular working schedules, as the situation demands. Travel may be in aircraft or by ground transportation over rough roads. An incumbent may be exposed to aircraft noise, moving machinery, dust, high voltage electricity, dangerous goods, electromagnetic radiation, extreme weather conditions (approximately 50% of the work is out of doors) and stressful pathological sceneries and conditions etc. Incumbents may have to walk, hike and climb for extended periods of time over moderately rough terrain in a variety of physically challenging conditions including swamps, mountains and/or on concrete or asphalt in adverse topographic, weather, and atmospheric conditions. The incumbent needs to realize the element of possible risks and health hazards due to contaminated items at accident sites. The incumbent may be required to undergo mandatory vaccination against certain diseases on periodical basis. Investigators are required to wear and operate appropriate personal protective equipment, carry all necessary equipment, tools and instruments to document all findings as they may photograph, video tape, make measurements and take notes while at the accident scene.

The incumbent must be able to physically maneuver around the accident site, which includes frequently climbing in, out, and on various parts of the wreckage for the purpose of documenting and gathering evidence. The position requires organizational and technical writing skills. Incumbent must be able to speak and write English. The incumbent must be capable of assembling and organizing technical data, preparing comprehensive and logical factual and analytical reports, and making effective oral presentations regarding your findings. In meetings or conferences, incumbent might be called upon to present, interpret, and maintain the positions and views to exchange information, and to interpret practices, procedures, or regulations.

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APPENDIX -8- JOB DESCRIPTION - AIRCRAFT SYSTEMS INVESTIGATOR

Nature and scope of duties:

To be able to response or perform investigations effectively to any aircraft accident or incident that may occur in Sri Lanka or to any aircraft registered in Sri Lanka wherever it may be, in compliance with the requirements stipulated by the Civil Aviation Authority of Sri Lanka and in conformity with the standards of ICAO.

Investigators will work under the direction of the Authority and conduct accident/serious incident investigations.

Major Duties:

Serves as an Aircraft Systems Investigator with primary responsibility for providing engineering expertise on aircraft systems design, manufacturing, certification, and maintenance in the investigation of air carrier and aviation accidents and incidents. Applies forensic engineering techniques in directing the on-scene and subsequent testing phases of aircraft systems aspects of aircraft accident investigations; also investigates and documents records and practices relating to maintenance, certification, and manufacturing of aircraft systems in coordination with other investigative groups. Prepares technical reports of investigation findings to assist in determining causal factors in aviation accidents; prepares and directs studies to address safety issues; and prepares accident prevention recommendations to be presented to regulatory authorities, manufacturers, and operators to correct safety deficiencies. Assists in preparation for depositions as a technical panelist or witness.


Qualifications:

The basic requirement is successful completion of a full four-year engineering curriculum leading to a bachelor's or higher degree in Mechanical, Electrical, or Aerospace Engineering from an accredited college or university or knowledge and understanding equivalent to this education such as valid registration as a professional engineer.

In addition to meeting the basic requirements, should have at least more than two year of appropriate professional engineering experience.

The following knowledge, skills or abilities are essential to the successful performance of the duties described;

1. Knowledge of the engineering aspects of electrical, hydraulic, mechanical, pneumatic, or avionic systems on large aircraft.
2. Knowledge of large aircraft certification, manufacturing and/or maintenance standards and practices.

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3. Knowledge of aviation engineering theory and practice as evidenced by advanced or multiple engineering degrees or extensive aviation engineering experience.
4. Knowledge of maintenance standards, practices and procedures for aircraft systems used in transport category or comparable aircraft.
5. Ability to conduct accident/incident investigations or failure analysis of aircraft electrical, hydraulic, mechanical, pneumatic, and avionics systems.
6. Knowledge and skill in technical writing and making oral presentations especially as they relate to aircraft accident investigation and failure analysis.

Job requirements and working conditions:

The incumbent will be required to remain "On call" for travel to investigative assignments outside normal work hours. They will frequently be given investigative assignments on short notice.

Since the major portion of the work an accident investigator does will be at the accident scene, this position requires local and overseas travel at short notice with extended overnight stay and irregular working schedules, as the situation demands. Travel may be in aircraft or by ground transportation over rough roads. An incumbent may be exposed to aircraft noise, moving machinery, dust, high voltage electricity, dangerous goods, electromagnetic radiation, extreme weather conditions (approximately 50% of the work is out of doors) and stressful pathological sceneries and conditions etc. Incumbents may have to walk, hike and climb for extended periods of time over moderately rough terrain in a variety of physically challenging conditions including swamps, mountains and/or on concrete or asphalt in adverse topographic, weather, and atmospheric conditions. The incumbent needs to realize the element of possible risks and health hazards due to contaminated items at accident sites. The incumbent may be required to undergo mandatory vaccination against certain diseases on periodical basis. Investigators are required to wear and operate appropriate personal protective equipment, carry all necessary equipment, tools and instruments to document all findings as they may photograph, video tape, make measurements and take notes while at the accident scene.

The incumbent must be able to physically maneuver around the accident site, which includes frequently climbing in, out, and on various parts of the wreckage for the purpose of documenting and gathering evidence. The position requires organizational and technical writing skills. Incumbent must be able to speak and write English. The incumbent must be capable of assembling and organizing technical data, preparing comprehensive and logical factual and analytical reports, and making effective oral presentations regarding your findings. In meetings or conferences, incumbent might be called upon to present, interpret, and maintain the positions and views to exchange information, and to interpret practices, procedures, or regulations.

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APPENDIX 9- JOB DESCRIPTION - AIRCRAFT STRUCTURES INVESTIGATOR

Nature and scope of duties:

To be able to response or perform investigations effectively to any aircraft accident or incident that may occur in Sri Lanka or to any aircraft registered in Sri Lanka wherever it may be, in compliance with the requirements stipulated by the Civil Aviation Authority of Sri Lanka and in conformity with the standards of ICAO.

Investigators will work under the direction of the Authority and conduct accident/serious incident investigations.

Major Duties:


Serves as an Aircraft Structures Investigator with primary responsibility for providing engineering expertise on aircraft structural design, manufacturing, certification, and maintenance in the investigation of air carrier and aviation accidents and incidents. Applies forensic engineering techniques in directing the on-scene and subsequent testing phases of aircraft structures aspects of aircraft accident investigations; also investigates and documents records and practices relating to maintenance, certification, and manufacturing of aircraft structures in coordination with other investigative groups. Prepares technical reports of investigation findings to assist the Board in determining causal factors in aviation accidents; prepares and directs studies to address safety issues; and prepares accident prevention recommendations to respective organizations, manufacturers, and operators to correct safety deficiencies. Advises the Board/ Authority in area of technical expertise.

Qualifications:

The basic requirement is successful completion of engineering curriculum leading to a bachelor's or higher degree in Mechanical or Aerospace Engineering from an accredited college or university or knowledge and understanding equivalent to this education such as valid registration as a professional engineer having more than two of appropriate professional engineering experience.

The following knowledge, skills or abilities are essential to the successful performance of the duties described;

1. Knowledge of the design of aircraft structures, structural mechanics, and the properties of various materials used in aircraft construction.
2. Knowledge of large aircraft certification, manufacturing and/or maintenance standards and practices.
3. Knowledge of aviation engineering theory and practice as evidenced by advanced or multiple engineering degrees or extensive aviation engineering experience.
4. Knowledge of maintenance standards, practices and procedures for aircraft structures.
5. Ability to conduct aircraft accident/incident investigations or failure analysis of aircraft structures.

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6. Knowledge and skill in technical writing and making oral presentations relate to aircraft accident investigation and failure analysis.
7. Ability to effectively lead teams composed of technical personnel drawn from different organizations in accomplishing desired goals.

Job Requirements and working conditions;

The incumbent will be required to remain "On call" for travel to investigative assignments outside normal work hours. They will frequently be given investigative assignments on short notice.

Since the major portion of the work an accident investigator does will be at the accident scene, this position requires local and overseas travel at short notice with extended overnight stay and irregular working schedules, as the situation demands. Travel may be in aircraft or by ground transportation over rough roads. An incumbent may be exposed to aircraft noise, moving machinery, dust, high voltage electricity, dangerous goods, electromagnetic radiation, extreme weather conditions (approximately 50% of the work is out of doors) and stressful pathological sceneries and conditions etc. Incumbents may have to walk, hike and climb for extended periods of time over moderately rough terrain in a variety of physically challenging conditions including swamps, mountains and/or on concrete or asphalt in adverse topographic, weather, and atmospheric conditions. The incumbent needs to realize the element of possible risks and health hazards due to contaminated items at accident sites. The incumbent may be required to undergo mandatory vaccination against certain diseases on periodical basis. Investigators are required to wear and operate appropriate personal protective equipment, carry all necessary equipment, tools and instruments to document all findings as they may photograph, video tape, make measurements and take notes while at the accident scene.

The incumbent must be able to physically maneuver around the accident site, which includes frequently climbing in, out, and on various parts of the wreckage for the purpose of documenting and gathering evidence. The position requires organizational and technical writing skills. Incumbent must be able to speak and write English. The incumbent must be capable of assembling and organizing technical data, preparing comprehensive and logical factual and analytical reports, and making effective oral presentations regarding your findings. In meetings or conferences, incumbent might be called upon to present, interpret, and maintain the positions and views to exchange information, and to interpret practices, procedures, or regulations.