PROCEDURE MANUAL

OF

AIRCRAFT ACCIDENT/INCIDENTINVESTIGATION, NEPAL

Second edition - 2022

Government of Nepal,
Ministry of Culture, Tourism and Civil Aviation,Civil Aviation Division

AMENDMENTS

The Procedure Manual will be reviewed periodically by the Ministry of Culture Tourism and Civil Aviation based on recommendation of Joint Secretary, Civil Aviation Division and will be responsible for issuing any Amendments. The holders of the Manual will ensure that it is up todate.

Record of Amendment

S. No.	Date of Issue	Date of Insertion	Signature

FOREWARD

Accident investigation has played a crucial role in identifying technical defects that need to be corrected, operational procedures that need to be revised and human factor's issues that need tobe addressed. Accident investigation is a very sensitive, difficult, time consuming and challenging job. Involvement of a number of parties after an air accident makes the investigation process complex.

It is the obligation of a State under Article 26 of the Convention on International Civil Aviation Chicago, 1944 to institute an inquiry into the circumstances of the accident in accordance with the procedure recommended by the International Civil Aviation Organization. Section 5 of theCivil Aviation Act has empowered the Government of Nepal (GoN) to promulgate regulation for the investigation of aircraft accident within the territory of Nepal. Accordingly, GoN has promulgated Civil Aviation (Accident Investigation) Regulation, 2071 B.S. (2014 A.D.). This Manual is promulgated under the power conferred by Rule 28 of the Regulation.

The sole objective of the investigation of an accident or serious incident shall be the prevention of accidents and incidents in future. It is not the purpose of this activity to apportion blame or liability. Therefore, a high degree of integrity and professionalism is expected on the part of the investigators while performing their job of aircraft accident/incident investigation.

This manual contains the Ministry's policies and procedure for the investigation of civil aircraft accidents and incidents that occur in the territory of Nepal. This manual also contains the procedure for the Ministry and other Nepalese organization's participation in investigation of accidents and incidents that occur outside of the territory of Nepal but involve Nepalese interests, including aircraft operated, registered, designed and manufactured in Nepal.

The purpose of this manual is to provide information and guidance to investigators and other concerned organizations and personnel on the procedures, practices and techniques that shouldbe used in aircraft accident investigations. The provisions of this manual are binding on the actions of the ministry including its investigators and management personnel. The provisions of this manual are also binding on any other contracting state and aviation industry organizations and personnel and other personnel and organizations from outside of Nepal that participate in the ministry led investigation. This manual encompasses the more common techniques and processes which will provide a basic understanding and guidance for the accident investigators. However, it is not a substitute for investigation training and experience.Since the investigations may vary in complexity due to the nature of the accident, this documentmay not cover all eventualities. ICAO documents and manuals relating to the aircraft accident/incident investigation shall always remain as guidance materials to complement this Manual.

Because this manual deals with investigations of accidents, serious incidents and incidents for reason of brevity, the terms "Accidents", "Investigations" and "Accident Investigation" are used herein, should apply equally to the investigation of accidents.

(Secretary)

TABLE OF CONTENTS

APPENDICES

ABBREVIATIONS

ADREP	Accident Incident Data Reporting System
AIC	Aeronautical Information Circular
ASC	Air Safety Circular
CAAN	Civil Aviation Authority of Nepal
CDO	Chief District Officer
CI	Chief Investigator
CoI	Committee of Inquiry
COSCAP	Cooperative Development of Operational Safety and Continuing AirworthinessPrograms
FSSD	Flight Safety Standards Department
GoN	Government of Nepal
ICAO	International Civil Aviation Organization
IIC	Investigator in-charge
MoCTCA	Ministry of Culture, Tourism and Civil Aviation
RCC	Rescue Coordination Centre
SAIS	Aviation Safety and Accident Investigation Section

CHAPTER 1

DEFINITIONS

1. **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 intentionof 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 isshut 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 detachedfrom the aircraft, or
      — direct exposure to jet blast, except when the injuries are from natural causes, self- inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or
   b) the aircraft sustains damage or structural failure which:
      — adversely affects the structural strength, performance or flight characteristics of the aircraft, and
      — would normally require major repair or replacement of the affected component, except for engine failure or damage, when the damage is limited to a single engine (includingits cowlings or accessories), to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aircraft skin (such as small dents or puncture holes), or for minor damages to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike (including holes in radome); or
   c) the aircraft is missing or is completely inaccessible.

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

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

2. **Accredited Representative** - A person designated by a Contracting State, for the purpose of participating in an investigation conducted by another State. The accredited Representative shall be chosen from the State's body specified for Accident Investigation.
3. **Adviser** - A person appointed on the basis of his or her qualifications for the purpose of assisting its accredited representative in an investigation.
4. **Aircraft Operator** - The person, organization or enterprise engaged in or offering to engage in an aircraft operation.
5. **Aircraft Owner** - The person, organization or enterprise under whose name the aircraft has been registered.
6. **Authority** - The Civil Aviation Authority of Nepal established under the prevailing law.
7. **Causes** - Actions, omissions, events, conditions, or a combination thereof, which led to the accident. The identification of causes does not imply the assignment of fault or the determination of administrative, civil or criminal liability.

8. **Chief Investigator** - The investigator assigned for Accident Investigations as per the regulation.
9. **Contracting State** - Any State which is a party to the International Civil Aviation Convention, 1944 (Chicago Convention).
10. **Co-pilot** - The person piloting the aircraft as an assistant of the Pilot in Command.
11. **Director General** - The Director General of the Civil Aviation Authority of Nepal.
12. **Flight recorder** - Any type of recorder installed in the aircraft used also for the purpose of complementing accident or incident investigation.
    i. *Automatic Deployable Fight Recorder-A combination flight recorder installed on the aircraft which is capable of automatically deploying from the aircraft.*
13. **Final Report** - A report of an accident or incident in the format set out in Annex 13 and which may be adapted to the circumstances of the accident or incident under investigation.
14. **Incident** - An occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of such operation.
15. **Investigation** - A process conducted for the purpose of accident and incident prevention which normally includes the gathering, recording and analysis of all relevant information, drawing of conclusions, including the determination of causes or contributing factors, or both, and the making of safety recommendations.
16. **Investigator** - A person appointed as a member of the Accident Investigation pursuant to Rule 10 of the Regulation.
17. **Investigator in-charge** - The person or commission appointed as per Rule 10 of the Regulation charged with the responsibility for the organization, conduct and control of an investigation.
18. **Local Body** - Metropolitan, Sub-metropolitan, municipality or village municipality.
19. **Maximum mass** - Maximum certificated take-off mass.
20. **Ministry** - The Ministry of Culture, Tourism and Civil Aviation. In the case of Nepal, it also refers to the official body for investigating the accident/incident.
21. **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.
22. **Owner** - Where an aircraft is registered, the registered owner of that aircraft.
23. **Police officer** - A member of the regular police force and includes all persons enlisted under the police ordinance.
24. **Regulation -** means Civil Aviation (Accident Investigation) Regulation, 2014.
25. **Pilot in Command** - In relation to an aircraft, means a person who for the time being is in-charge of the flight operation and for the flight safety of the aircraft.
26. **Preliminary Report** - The communication used for the prompt dissemination of data obtained during the early stages of the investigation.
27. **Safety Recommendation** - A proposal of an accident investigation commission 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.

28. **Safety Recommendation of Global Concern** - A safety recommendation regarding a systemic deficiency having a probability of recurrence, with significant consequences at a global level and requiring timely action to improve safety.
29. **Serious incident** - An incident involving circumstances indicating that there was a high probability of an accident and associated with the operation of an aircraft which:
    (1) 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,
    (2) 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,
30. **Serious Injury** - The condition of an injury sustained by a person in an accident which:
    a. requires hospitalization for more than 48 hours, commencing within seven days from the date the injury was received,
    b. results in a fracture of any bone except simple fracture of fingers or nose,
    c. involves lacerations which cause severe hemorrhage, damage to the nerve, muscle or tendon; or,
    d. involves injury to any internal organ of the body; or,
    e. involves second- or third-degree burns, or any burns affecting more than 5 percent of the body surface; or,
    f. involves verified exposure to infectious substances or injurious radiation;
31. **State of Design** - The State having jurisdiction over the organization responsible for the type design of the aircraft.
32. **State of Manufacture** - The state having jurisdiction over the organization responsible for the final assembly of the aircraft, engine or propeller.
33. **State of Occurrence** - The State in the territory of which an accident or incident occurs.
34. **State of 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.
35. **State of Registry** - The state on whose register the aircraft has been registered.

CHAPTER 2
GENERAL

2.1 LEGISLATION

2.1.1 In exercise of the powers conferred by Section 5 of the Civil Aviation Act 1956, the Government of Nepal has promulgated the Civil Aviation (Accident Investigation) Regulation 2014 which came into effect on 18 April 2014. The Regulation is attached in **Appendix A**.

2.1.2 The following ICAO documents will be referred to as guidance material on related subjects

(a) Annex 13 - Aircraft Accident and Incident Investigation
(b) Doc 9756 - Manual of Aircraft Accident and Incident Investigation
    Part I - Organization and Planning
    Part II- Procedures and Checklists
    Part III – Investigation
    Part IV - Reporting
(c) Cir 285-AN/166 - Guidance on Assistance to Aircraft Accident Victims and their Families
(d) Cir 298-AN/172- Training Guidelines for Aircraft Accident Investigators
(e) Cir 314-AN/179 - Hazards at Aircraft Accident Sites
(f) Airport Service Manual (Doc 9937), Part 5- Removal of Disabled Aircraft.
(g) Manual on Assistance to Aircraft Accident Victims and their Families. (Doc 9973)
(h) ICAO Policy on Assistance to Aircraft Accidents Victims and their Families (Doc 9998)
(i) Training guidelines for Aircraft Accident Investigators (Cir 298)
(j) Hazard at Aircraft Accident Side (Cir 315)
(k) Human Factors Training Manual (Doc 9683)
(l) Manual of Civil Aviation Medicine (Doc 8984)
(m) Safety Management Manual (SMM) (Doc 9859)

2.2 STRUCTURE

2.2.1 For the purposes of carrying out investigations of accidents and serious incidents referred to in rules 9 and 22 of the Regulation, Ministry has set up under the Civil Aviation Division. SAIS comprises of three permanent technical staff to carry out the functions and obligations of the State in accordance with the ICAO Annex 13 standards and international standards and practices. In addition, Ministry maintains a roster of investigators with appropriate experience and training in aircraft accident/incident investigation.

2.2.2 The organizational structure of the SAIS is presented in **Appendix B**.

2.2.3 SAIS has the following functions:
(a) to act as the point of contact for notification of occurrences of aircraft accidents and

serious incidents

(b) to ensure the transmittal of notification of accident/ incident information to the States andagencies as specified in Rule (4) of the Regulation

(c) to dispatch an investigation team to the accident site as soon as possible for the purpose of protection and collection of evidence

(d) To assist in the formation of a Committee of Enquiry or Commission according to the nature of accident or serious incident

(e) to conduct necessary administrative and logistic works to facilitate the investigation process

(f) to carry out the processing of the reports of the accident/ incident investigation, which includes –

  (i) to forward the draft final reports to the States for consultation as stipulated in Rule (16) of the Regulation

  (ii) to forward the report made public by the Government to the States as required under Rule (18) of the Regulation

  (iii) to forward the report made public by the GoN to ICAO if the mass of the aircraft involved in the accident or serious incident is more than 5,700 kg

(g) to follow-up regarding actions to the recommendations made by the Investigation Reports to ensure their appropriate implementation

(h) to establish and maintain an accident and incident database to facilitate the effective analysis of information on actual or potential safety deficiencies obtained, including that from its incident reporting systems, and to determine any preventive actions required

(i) to process obligations of the Government under Annex 13 to the Convention on International Civil Aviation, 1944 as amended from time to time; and

(j) to carry out other functions, which the Government may direct to perform from timeto time under the Regulation.

(k) To inform ICAO of the safety recommendation when ICAO docs are involved and of the issuance of the SRGC and its responses in dated transmittal.

(l) To check periodically for any new amendments to Annex 13 and initiate for amendments of the procedure manual. Until amendments are incorporated, file for differences (EFOD) in the ICAO CMA portal.

2.3 FUNDING

The Government of Nepal will bear the remuneration, allowances and other expenses of the IIC, investigator, experts and support staff. The technical tests or other expenses related to accident investigation will be borne by the respective airlines. Any supplementary fund required by the Ministry for the purpose of investigation shall be borne by Government of Nepal. In some instances, the Ministry may decide on different funding mechanism for the investigation activities.

2.4 APPROVAL AND AMENDMENT

2.4.1 APPROVAL

The procedure manual will come into force from the date of the approval from the Minister

ofCulture, Tourism and Civil Aviation.

2.4.2 AMENDMENT

The Joint Secretary of Civil Aviation Division of the Ministry is responsible to ensure timely amendments of the procedure manual, as necessary. Any amendment on the procedure manual will come into force from the date of the approval from the minister and any amendment or addition in the Appendix will come into force from the date of the approval from the secretary.

CHAPTER 3
NOTIFICATION

3.1 GENERAL

3.1.1 Rule (3) of the Regulation refers to the notification of aircraft accidents and serious incidents (**Appendix A**) as follows:

3.2 INITIAL NOTIFICATION

3.2.1 If anybody witnesses aircraft accident or incident in the territory of Nepal, He shall provide the same information to the nearby Civil Aviation Office, District Administrative Office, Police Officer or Local Body at the earliest.

3.2.2 If any information of accident has been received pursuant to 3.2.1 the concerned office or body shall provide the same information to RCC and the chief investigator as soon as possible using one or more of the following means of contact

Civil Aviation Authority of Nepal Rescue Coordination Centre Tribhuvan International Airport	Ministry of Culture, Tourism and Civil Aviation Civil Aviation Division Mr. Buddhi Sagar Lamichhane
Phone Number: +977-1-4113000, +977-9851187000 (24 Hrs. point of contact) Fax Number: e-mail:	Phone Number: +977-1-4211870, +977-1-4211624 Fax Number: +977-1-4211758 e-mail: bslamichanne@tourism.gov.np

3.2.3 The Chief investigator in coordination with RCC will collect all available relevant information required for the completion of initial notification form given in **Appendix C1**

3.2.4 Chief investigator will provide information to the chief of FSSD, CAAN to disseminate such information to the concerned states and agencies by the quickest mean available as specified in rule 4 of the regulation. When necessary the Chief investigator, will also deploy a technical team (GO-Team) in coordination with FSSD, CAAN to the accident / incident site to ensure the preservation and collection of evidence. The Chief investigator will also notify the minister, secretary of the Ministry of such incidents and accidents.

3.2.5 The technical team deployed as per 3.2.4 shall submit the preliminary technical reports that include the preliminary investigation data and collected evidences to the Chief Investigator at the earliest.

*NOTE : ICAO Reporting & Notification Checklist is contained in **Appendix 'C'**, the format &content may be seen in **Appendix 'C1'***

3.3 ACCIDENT OR SERIOUS INCIDENT IN THE NEPALESE TERRITORY

3.3.1 The Chief of FSSD, CAAN is delegated for notifying the concerned States and ICAO in accordance with Rule (4) of the regulation. Chief Investigator is responsible to ensure that the initial notification is sent out to all relevant state as mentioned below.

(a) the State of Registry;
(b) the State of Operator;
(c) the State of Design;
(d) the State of Manufacture; and
(e) ICAO when the aircraft involved is of a maximum mass of over 2,250 kg or is aturbojet-powered airplane.

3.3.2 List of Address of aircraft accident investigation authorities of other States can be found in **Appendix D**.

3.3.3 As soon as it is possible to do so, the details not included in the notification as well as other known relevant information shall be dispatched to the State of Manufacture, the State ofDesign, State of Registry, the State of the Operator and ICAO.

3.3.4 If the state of occurrence is unaware of serious incident to an aircraft registered in Nepal or operated by a Nepalese operator, Chief Investigator shall ensure that a notification is forwarded of such incident to the state of occurrence, state of design and state of manufacture.

3.4 ACKNOWLEDGEMENT OF ACCIDENTS OR INCIDENTS IN THE TERRITORY OF ANOTHER CONTRACTING STATE TO AN AIRCRAFT WHERE NEPAL IS EITHER STATE OF REGISTRY OR OPERATOR

3.4.1 Where a Nepalese registered/ operated aircraft is involved in an accident or serious incident in theterritory of another contracting State, and notification of the accident or serious incident is received from the State of Occurrence, Chief Investigator or a person designated will acknowledge the same to the State of Occurrence.

3.4.2 All relevant information including the information about the aircraft and flight crew involved in the accident or serious incident will be collected from the regulatory authority andoperator, and SAIS shall provide it to the State of Occurrence.

3.4.3 The State of Occurrence shall, if applicable, be provided, at the earliest opportunity, details of dangerous goods on board the aircraft.

3.4.4 Where the State which is investigating the accident or serious incident is a Contracting State, Chief Investigator shall inform whether the Ministry intends to appoint or has appointed an accredited representative and if such accredited representative will be travelling to the State in which the investigation is being carried out, the contact details and the

expected date of arrival of the accredited representative in such State.

3.4.5 Notwithstanding anything written in 3.4.4, if the State investigating an accident to an aircraft over 2250 kgs specifically requests to appoint an accredited representative, the Ministry will do so.

3.5. ACCIDENTS OR SERIOUS INCIDENTS TO NEPALESE REGISTERED AIRCRAFT IN A NON-CONTRACTING STATE OR OUTSIDE THE TERRITORY OF ANY STATE

3.5.1 When the accident or the serious incident to a Nepalese registered aircraft has occurred in the territory of a non-Contracting State which does not intend to investigate inaccordance with ICAO Annex 13, Government of Nepal will request other competent state agency to support in the investigation.

3.5.2 As a State of Registry when an investigation is being conducted under the Regulation onan accident or serious incident to Nepalese registered aircraft in a Non-Contracting State or outside the Territory of any State, the notification shall be forwarded to the State of the Operator, the State of Design, the State of Manufacture and ICAO as per Annex 13.

3.5.3 In case the location of the accident or serious incident to a Nepalese registered aircraft cannot definitely be established as being in the territory of any other State, the government of Nepal may institute the investigation commission but the government will request to other states to lead the investigation and support Nepal.

3.5.4 When a Nepalese registered aircraft is involved in an accident or serious incident in International waters request shall be made to the State nearest to the location to aid as possible.

3.5.5 In all these cases, the notification requirements will be fulfilled by SAIS, as per 3.2.

CHAPTER 4
INVESTIGATION

4.1 GENERAL

4.1.1 ACCIDENT INVESTIGATION AUTHORITY

The obligation to carry out the investigation of any kinds of accident or incident within the territory of Nepal, or as required, outside the territory of Nepal shall lie upon the Ministry, GoN. SAIS, under the Chief Investigator shall carry out the investigation. In absence of required number of qualified investigators within SAIS, the Chief Investigator may recommend appointing investigators on ad-hoc basis from the Industry. Chief Investigator may carry out the investigation of an accident or incident through expert or investigation commission as per the necessity.

4.1.2 PROVISION RELATING TO INVESTIGATION

The Chief Investigator may determine the extent of investigation to be carried out on the basis of the nature of accident/incident and comprise a commission, Investigation Committee or Tabletop exercise. The Chief Investigator may recommend himself or any Investigator as investigator-in-charge. The IIC, if not identified among the members of the Ministry, shall meet these minimum qualifications:

(a) Person having at least fifteen years of experience in the civil aviation sector as pilot, engineer, air traffic controller, in flight operations, airworthiness or aviation related management.
(b) Person trained in the investigation of aircraft accident;
(c) Person having previous investigation experience.

Notwithstanding anything contained in (a), (b) and (c) above, the person having relationship, direct or indirect, with the Aircraft Operator or the service provider of the aircraft in accident shall not qualify to be the member or coordinator of the commission. A roster of experts to be involved in commission shall be maintained by the SAIS as per the roster guidelines attached in **Appendix G**.

4.1.3 SAIS will also work as the secretariat of the Investigation. The procedure relating to meetings of the Investigation shall be as decided by the IIC and the term of reference of the investigation shall be as provided in the Regulation as determined by the Government of Nepal. The job description of the investigators will be as provided in **Appendix G2.**

4.1.4 The investigation normally will include:

(a) the gathering, recording and analysis of all relevant information on that accident orincident;
(b) if possible, the determination of the causes and/or contributing factors;
(c) if appropriate, the issuance of safety recommendations; and
(d) the completion of the Final Report.

4.1.5 The Ministry will decide the scope of the investigation and the size and composition of

the investigation team based on the:

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

4.1.6 It is essential that the magnitude of the tasks and the scope of the investigation be assessed at an early stage so that the size of the investigation team can be planned and the appropriate resources and expertise can be acquired for the investigation.
A Commission will be constituted for the investigation of an accident involving a large aircraftand usually involving fatalities.
Committee of Inquiry will be formed to carry out investigation into an incident involving anyaircraft or into an accident involving a small aircraft.
Wherein it is felt that the causes are known and incident or accident is of repetitive nature Small Investigation Reports will be prepared by a Committee of the officers of SAIS, Ministry including any related experts.
Following Matrix may be used as guidance for proposing method of investigation:

Investigation type	Occurrence type/ details
Investigation Commission	A major accident will be investigated by a Commission, constituted by the Minister of Civil Aviation in accordance with the Rule 10 of the Regulation. The Commission may be assisted by various groups for investigation as per the necessity.
Committee of Inquiry (CoI) (including Group Investigation)	In the case of an accident or incident which is not investigated by a Commission, a Committee of Inquiry (CoI) will be formed. The CoI will be constituted by the Ministry. The CoI may be assisted by various groups for investigation. The members of CoI are taken from the pool of expert investigators as per the roster and technical officers from the SAIS.
Investigation Team	Investigation of an occurrence which prima facie is non-complex investigated by a small Committee of Inquiry comprising mostly of Ministry, SAIS and if necessary, the experts from roster.
Investigation Officer	An occurrence which has been assessed as limited scope factual information based investigations (preliminary) as per Rule. This will result in a small concise report. Technical officers from SAIS will investigate such incidents and submit report to the Chief Investigator

4.1.7 The personnel to be deputed in SAIS will be provided with basic and additional refreshertrainings as per needs. Training details/ requirements are at (Training Guidelines) **Appendix G1**. Guidelines for major Group investigation are at **Appendix E4**, and guidelines for the smaller investigations of accidents or serious incidents are at **Appendix E5**.

4.2 INVESTIGATION CARRIED OUT BY NEPAL

4.2.1 When the accident or serious incident is investigated by Nepal as per the Regulation, SAIS, Ministry will initiate the process of the formation of the investigation Committee of Inquiry or Commission as required. Suitability of the investigators for the investigation from the available pool of investigators will be decided keeping in view that there is no conflict of interest and the investigator is readily available.

4.2.2 The State of Operator, Registry, Design or of Manufacturer (wherever applicable) are entitled to appoint an accredited representative to participate in the investigation. These States may appoint one or more advisers, to assist its accredited representative. States which have special interest in the investigation of an accident by virtue of fatalities or fatal injuries to their citizens during the accident are also entitled to appoint an expert for participating in the investigation.

4.2.3 Observer or participant status is a privilege granted by Nepal to a person having a direct interest in the investigation and who has the expertise to contribute in achieving the objective of the investigation. The persons representing a State department or agency, the aircraft owner and operator, the flight crew involved in the accident, if needed, may be granted observer/ participant status.

4.2.4 When any documents or information is required for investigation purposes, or aircraft component examinations is required to be carried out in the State of Registry, the State of the Operator, the State of Design, the State of Manufacture, or in any other State, matter will be taken up with the accredited representative of that State and endeavor shall be made to ensure that the request is met in so far as it is compatible with the policies of Nepal. If the concerned state has not appointed accredited representative Ministry will pass the request to the concerned government agency of the particular state through the Ministry of the Civil Aviation of that state.

4.2.5 All the participants from other States namely – advisers, experts, accredited representatives, observer etc. will be provided with letters by the Ministry clearly giving the powers and roles of these participants. Format of the letters are at **Appendix I.**

4.3 INVESTIGATION CARRIED OUT BY OTHER STATE

4.3.1 In case investigation of aircraft accident and serious incident is carried out by other State where Nepal is a State of Registry or Operator, the intention to appoint an accredited representative shall be conveyed to the State conducting the investigation. If such an accredited representative is appointed by the Ministry, the name and contact details as well as the expected date of his arrival to the State of Occurrence will be provided to the State of Occurrence.

4.3.2 Advisers from the CAAN and the operator may participate to assist the Accredited Representative of Nepal and will be intimated accordingly to the State conducting investigation.

4.3.3 When specifically requested by the State conducting the investigation of an accident on an aircraft over 2250 kg to appoint an Accredited Representative, the same shall be appointed.

4.3.4 When request for any documents or information for investigation purposes or aircraft component examinations to be carried out in Nepal is received, the accredited representative will ensure that the request is met in so far as it is compatible with the policies of the Government.

4.3.5 Any person who acts as an Accredited Representative from Nepal and his advisers for any accident or serious incident will ensure that the information relevant to investigation of accident or serious incident is provided to the investigators and no information regarding progress and findings of the investigation is divulged without the express consent of State conducting the investigation.

4.3.6 If a request is received from any State conducting the investigation of an accident or an incident following shall be provided to that State

(a) After processing the request, all the information relevant to investigation and availablewith Nepal
(b) Pertinent information of the facilities or services which have been, or would normallyhave been, used by an aircraft prior to an accident or an incident
(c) Pertinent information on any organization whose activities may have directly or indirectly influenced the operation of the aircraft.

4.3.7 In case investigation of aircraft accident and serious incident is carried out by other Statewhere the citizens of Nepal have suffered serious injuries or fatalities, an expert shall be appointed by Ministry and intention conveyed to the State conducting the investigation.

4.4 COORDINATION

4.4.1 Liaison during the investigation with Civil Authorities, Police Authorities, Defense Authorities, Hospitals, Ambulance Services, Fire Services and any other local authority is of vital importance. In most cases aerodrome officials, local inhabitants and/or police will probably be the first persons to arrive at the scene of an aircraft accident. It is, therefore, extremely important to have cooperation of the police and aerodrome officials to ensure the security of the wreckage. This prevents the loss of vital evidence resulting from unnecessary interference with the wreckage before the arrival of the investigation team. To carry out the smooth and uninterrupted investigation the SAIS may enter into agreement with the concerned local authorities within the prevailing legal regime.

4.4.2 If it is suspected that the aircraft may have carried dangerous cargo, special precautions should be taken in placing personnel at a safe distance from the wreckage. This is particularlyimportant if a fire has occurred.

4.4.3 In accordance with ICAO Annex 13, if a request is received from the State of Design, State of Registry, State of Operator or the State of Manufacture that the aircraft, its contents,

and any other evidence remains undisturbed pending inspection by an accredited representative of the requesting State, all necessary steps shall be taken to comply with such request, so far as this is reasonably practicable and compatible with the proper conduct of the investigation; provided that the aircraft may be moved to the extent necessary to extricate persons, animals, mail and valuables, to prevent destruction by fire or other causes, or to eliminate any danger or obstruction to air navigation, to other transport or to the public, and provided that it does not result in undue delay in returning the aircraft to service where this is practicable.

4.4.4 The Airport chief of the Airport closest to the site of accident shall assist in coordinationwith Local Police Authorities and shall take immediately all reasonable measures to protect theevidence until the arrival of the Technical Team (go team) from Ministry and CAAN or any other authorized person.

4.4.5 All the documents relating to the aircraft shall be segregated and sealed by the Operator and shall be handed over to the authorized person from Ministry, who shall determine the adequacy of action as deemed appropriate and may seal any other documents etc. pertinent to the investigation of the accident as any of the material could be ofuse to the investigating authority. The broad outlines of the records, which should be segregated and sealed, are at **Appendix E.**

4.4.6 The assistance of civil authorities, particularly that of local police is also necessary to ensure that vital evidence is not lost. The authorized officer of SAIS, Ministry shall co-ordinate with the police authorities/ Local Government Authorities to initiate action to extricatepersons from the aircraft, to arrange for immediate first aid and medical attention, to extinguishfire and removal of the persons dead or alive from the wreckage.

4.4.7 The chief district officer of the district of accident site, Airport Manager of the nearest airport or the chief of the local police office shall ensure with the help of operator that the Captain and the Co-pilot are immediately subjected to medical check-up for the consumption of alcohol. The doctor carrying out such a medical check-up shall take samples of blood, urine etc. required for detailed chemical analysis. In the event of accident at an Airport, Breath Analyzer test, samples of blood, urine shall be taken at the Airport Medical center wherever available.

4.4.8 In other cases where medical centers are not available at the airports or when the conditionof crew members require immediate hospitalization, Airport manager with the help of police authorities if required, shall ensure that the sample of the blood, urine etc. are taken to the nearest hospital. These checks should be expeditiously carried out without any loss of time. The sample should be suitably preserved and handed over to authorized person by the Ministry for the detailed laboratory examination.

4.4.9 In the event of death of the crew members, complete autopsy examination of fatally injured flight crew and, subject to the particular circumstances, of fatally injured passengers and cabin attendants is required to be carried out. These examinations shall be expeditious andcomplete. The authorized officer of the investigation unit shall ensure thatthe bodies are subjected to these examinations by the police authorities.

4.4.10 If appropriate the Medical examination of the surviving crew, passengers and involved aviation personnel, should be carried out by a physician, preferably experienced in such kind of examination. These examinations should be expeditious.

4.4.11 Government of Nepal authorized hospital shall carry out the Post Mortem(s) and the hospital will support the investigation.

NOTE 1: While rescuing the injured crew members, their identification and location in or around the aircraft must be carefully observed and recorded. In case the pilot and/or copilot are found dead, the necessary photographs must be taken in situ prior to the removal. The removal action should be such that minimum disturbance is caused to the aircraft wreckage/parts and any such disturbance should be fully recorded. The location of the passengers should also be recorded immediately during rescue operation. However, removal of the injured to the nearest hospital must not be delayed for want of formalities with regard to the recording as stated above.

NOTE 2: Safe custody shall include protection against further damage, access by unauthorized persons, pilfering and deterioration. All the parts of the aircraft or relevant matter picked up from the wreckage should be preserved. The aircraft parts or components which are suspected to have malfunctioned should be preserved for testing or examination in a thorough manner. The positions at which the flight data recorder and cockpit voice recorders are found if installed on the aircraft should be recorded on a sketch.

4.4.12 If, in the course of an investigation it becomes known, or it is suspected, that an act of unlawful interference was involved, the IIC shall immediately notify the Chief Investigator who shall initiate action to ensure that the local administrative/ police authorities are informed and the information is relayed to the States involved.

4.5 PRELIMINARY TECHNICAL INVESTIGATION

4.5.1 Rule 7 of the Aircraft accidents and incidents Investigation Regulation 2014 - requires the Ministry to send a technical team to carry out preliminary technical investigation to an accident or incident and to submit a preliminary report to the Ministry in a specified format. The team will be responsible to protect the accident site in coordination with the local authority unless the members of the Committee of enquiry or Commission reach to the site. The preliminary report will be helpful to assess the nature and gravity of accident and to determine the scope of the investigation.

4.5.2 The Ministry will authorize a team consisting of the officers from the SAIS Ministry and/or CAAN to carry out the preliminary investigation as stated in 4.5.1. Procedure to be followed for the onsite investigation is contained in **Appendix E2.** The Risk assessment on accident site form required to be filled by the technical team is contained in **Appendix B3.**

4.5.3 The Commission, Committee of Investigation or Investigation Team, for the purpose of investigation shall have power to require and enforce the production of all books, paper, documents and articles which it may consider necessary for the investigation, and to retain any such books, papers, documents and articles until completion of the investigation. It shall have the access to examine any aircraft and its components involved in the accident or

incident, theplace where the accident or incident occurred or any other place, the entry upon and examination of which appears necessary for the purpose of the investigation.

4.5.4 The preliminary investigation shall normally include the gathering, recording and preliminary analysis of all relevant information on that accident or incident. The team shall visit the scene of the accident, examine the wreckage and take statements from witnesses, consult with local authority and help to protect the accident site to preserve the evidences. The guidelines on Occupational Health and Safety applicable to Aircraft Accident Investigations areat **Appendix E3.**

4.5.5 In case of serious incidents, the aircraft as a whole may not be required to be kept for investigation purposes under the custody, however in case of accident particularly to large transport aircraft; covered space may be required for keeping the accident aircraft/ wreckage. The space will be arranged at a suitable place preferably nearest to the site of occurrence for assembling of wreckage, if required for the purposes to avoid any pilferage, damage or loss of evidence. When deemed necessary, Chief Investigator shall ensure the availability of Hangar facilities from either the Military, Nepal Airlines Corporation or any private operators.

4.6 ACCIDENT/ SERIOUS INCIDENT INVESTIGATION

4.6.1 The extent of the investigation and the procedure to be followed in carrying out such an investigation shall be determined by the Chief Investigator, depending on the nature and gravity of the accident/incident.

4.6.2 The State of Registry, the State of the Operator, the State of Design, the State of Manufacture and any other State that, on request, provides information, facilities or experts will be usually represented by an **accredited representative**. These accredited representatives will be entitled to:

(a) Visit the scene of the accident
(b) Examine the wreckage
(c) Obtain witness information and suggest areas of questioning
(d) Have full access to all relevant evidence as soon as possible
(e) Receive copies of all pertinent documents
(f) Participate in read-outs of recorded media
(g) Participate in off-scene investigative activities such as component examinations, technical briefings, tests and simulations
(h) Participate in investigation progress meetings including deliberations related to analyses, findings, causes and safety recommendations
(i) Make submissions in respect of the various elements of the investigation.

4.6.3 However, participation of States that provide information, facilities or experts shall be limited to those matters in respect of which the State has, on request, provided information, facilities or experts in the ongoing investigation.

4.6.4 The experts from States which have special interest in an accident by virtue of fatalitiesor serious injuries to its citizens will be entitled to:

(a) Visit the scene of the accident
(b) Have access to the relevant factual information that is approved for public release by the IIC, and to information on the progress of the investigation.
(c) Participate in the identification of the victims
(d) Assist in the questioning surviving passengers who are citizens of the State
(e) Receive a copy of the final report

4.6.5 If neither the State of Registry nor the State of Operator appoints an accredited representative, the IIC may invite participation of the operator in the investigation.
4.6.6 If neither the State of Design nor the State of Manufacture appoints an accredited representative, IIC may invite the manufacturer(s) for participation in the investigation.

4.6.7 Upon the arrival of an accredited representative, the members of the investigation team will be introduced to the accredited representatives and their advisers, and are made aware of his rightsand responsibilities. He will be provided with thorough update on the investigation and copiesof all relevant information/ pertinent documents.

4.6.8 Advisers assisting accredited representatives will be permitted, under the accredited representatives' supervision, to participate in the investigation to the extent necessary to enable the accredited representatives to make their participation effective. In addition, advisers may be invited to provide their expert knowledge to one or more groups of the investigation.

4.6.9 The IIC shall submit report to the Minister of Civil Aviation stating all relevant facts with regard to the accident and conclusions with regard to the causes of the accident and adding any observations and recommendations which they may think fit to make with a view to preservation of life and avoidance of similar accidents in future.

4.6.10 Any judicial or administrative proceedings to apportion blame or liability will be separatefrom these investigations.

4.7 INCIDENT INVESTIGATION

4.7.1 The SAIS has arrangements with FSSD, CAAN to be notified of all occurrences (Accidents and Incidents). The Chief Investigator shall determine if an incident requires an independent investigation.

4.7.2 Upon notification of an incident that needs to be investigated, the Chief Investigator should immediately institute an investigation, appointing an IIC and additional experts as required. If it is determined that the incident doesn't need to be investigated, CAAN may chose to investigate the incident.

4.7.3 The Director-General shall forward the report of the Investigation to the Ministry with such comments as the Director-General may think fit to make and the Ministry may, at its

discretion, make the whole or part of any such report public in such a manner as it may considerfit.

4.8 INFORMATION ON THE PROGRESS OF INVESTIGATION

The Chief Investigator, or a person designated shall provide relevant and timely information on the progress of investigation to the families of the victims and the accident survivors on a routine basis or on request.

4.9 POWERS OF AIRCRAFT ACCIDENT INVESTIGATORS

4.9.1 The investigation of aircraft accidents and incidents shall be strictly objective and totally impartial and must also be perceived to be so. The investigators shall have the following powers:

(a) have unhampered access to the accident/incident site, aircraft or its wreckage.

(b) have immediate access and unrestricted custody to all relevant material, including the wreckage, flight recorders, ATS records, witness statements to ensure a detailed examination without delay.

(c) make arrangements for read-out of flight recorders without delay. In the event that Nepal doesn't have adequate facilities to read out the flight recorders, the investigator-in-charge shall make arrangements to send the flight recorders to any other State with such facilities at the earliest, giving consideration to the capabilities, timeliness and location of such read-out facility. Also, to effectively use, analyze and study data received from ground based equipment.

(d) while investigating into a fatal accident, expeditiously arrange for complete autopsy examination of fatally injured flight crew by a competent pathologist.

(e) Subject to particular circumstances, the investigator-in-charge may arrange for complete autopsy examination of fatally injured cabin attendants and passengers.

(f) furnish any information, produce any relevant data or documents from any person or organization and retain such information, data or documents until the completion of the investigation

(g) examine the evidence, information or document, if any received from the Chief District Officer, police or other body or person, relating to the accident and keep such evidence, information or document as evidence;

(h) when necessary, make arrangements for analysis and examination of aircraft or any aircraft parts, equipment or any goods inside the aircraft and retain such parts or goods until the completion of the investigation

(i) make sure that the investigation is carried out and completed in an unbiased and independent manner.

(j) Summon before them any person as they think fit to take verbal or written statement and require such person to make and sign a declaration of the truth of the statement made by him.

(k) enter and inspect, if required, on production of their credentials,

(l) require an immediate listing of evidence and removal of debris or components for examination or analysis purposes,

(m) take possession of, remove, test, take measures for the preservation of any object or any aircraft other than an aircraft involved in the accident or incident for the purpose of investigation.

(n) require the medical and toxicological examination of the crew, passengers and aviation personnel involved in the accident or incident by a medical practitioner.

(o) seek expert advice or assistance from International Civil Aviation Organization, regional aviation organization, concerned body or person with regards to investigation of the accident as per the need;

4.10 POST-FIELD PHASE OF THE INVESTIGATION

4.10.1 Subsequent to the onsite investigation, significant investigation work remains, and the investigator must work diligently to maintain and manage the progress of the investigation. In general, the post-field phase involves the continued collection and validation of evidence; the examination of all pertinent personnel, company, aircraft, facility, records; the examination of selected wreckage in the laboratory; the testing of selected components and systems; the reading and analysis of recordings; the conduct of further interviews; the determination of the sequence of events; the analysis of all investigation information; and completion of technical and group reports, if any.

After the necessary examination of the wreckage for the investigation purpose the Commission may release the wreckage with the coordination with concerned organization in the format given in **Appendix H**.

NOTE: Guidance given in Doc 9756 should be followed for this phase of investigation.

4.10.2 It is always a challenge to ensure that the investigation continues to progress following the field phase. To ensure the continued progress of the investigation, the IIC should ensure that Investigations Management System Event Checklist is referred to, modified as per the scope of the investigation and followed as advised in Doc 9756, Part 2, Chapter 4.

4.11 SUPPORT TO BE PROVIDED TO THE INVESTIGATION

The IIC may request the concerned person or body to provide necessary support in the investigation work of the accident. It shall be the responsibility of the concerned person or body to provide their support to the IIC.

4.12 READ OUT OF FLIGHT RECORDERS

4.12.1. Due to the importance of flight recordings, extreme care must be taken in handling the recorders to prevent damage. Only fully qualified personnel should be assigned to recover and handle the recorders. Handling and transportation of the flight recorders from the accident site to the Secretariat of the investigation within the Ministry should be carried out by the technical team deputed to the accident site. The transportation to the read-out facilities should be carried out preferably by personnel designated by the Ministry after ensuring that there is no further damage during transportation. The IIC will immediately make

arrangements for the read-out of the flight recorder.

4.12.2.In the event adequate facilities to read out the flight recorders are not available in Nepal, facilities made available by the other States should be used, giving consideration to the following

(a) the technical capabilities of the read out facility
(b) the timeliness of the read out and
(c) the location of the read out facility.
(d) having no perceived or real conflict of interest in the ongoing investigation.

4.12.3. Read-outs of flight recorder recordings should be carried out in the presence of at leasta member of the Investigation Committee /Commission. However, the State of Registry orState of Operator is entitled to participate during the read-out of Cock-pit Voice Recorders. Notwithstanding anything mentioned in this para, the Commission may dispatch the recordersto the read-out facility without accompanying any representative for read-out of the recordersand dispatch back with its transcripts.

4.12.4. The flight data recorder and the cockpit voice recorder preferably should be read out by the samefacility, because they contain complementary data which can help validate each recording andaid in determining timing and synchronization. Flight recorders should not be opened or powered up and original recordings should not be copied (particularly not by high-speed copydevices) prior to the read-out because of the risk of damage to the recordings.

4.12.5. The facility at which the flight recorders are read out should be givenan opportunity to comment on the Draft Final Report in order to ensure that the characteristics of theflight recorder analysis have been taken into account.

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

4.12.7. The investigation commission may leave the original recordings, or a copy of them, with the read-out facility until the investigation is completed, in order to facilitate the timely resolution of additional requests or clarifications, providing that the facility has adequate security procedures to safeguard the recordings.

CHAPTER 5
INVESTIGATION REPORT

5.1 PRELIMINARY REPORT

5.1.1 In the following cases, the accident investigation in-charge shall submit the preliminary report of the accident investigation to the ministry within thirty days after an accident:

(a) When the aircraft involved in an accident is an aircraft of a maximum certificated take-off mass of more than 2,250 kg; or

(b) an aircraft of a maximum certificated take-off mass of 2,250 kg or less and when airworthiness or matters considered to be of serious interest to other Contracting States are involved,

5.1.2 After the accident investigation in-charge submits the preliminary report of the accident investigation to the ministry, the Ministry shall send the report to the following person or body or state as soon as possible:

(a) the State of Registry / Occurrence

(b) the State of Operator

(c) the State of Design

(d) the State of Manufacturer

(e) any State that provided relevant information, significant facilities or experts and

(f) the International Civil Aviation Organization when the aircraft is of a maximum certificated take-off mass of more than 2,250 kg.

5.1.3 The preliminary report pursuant to 5.1.2 shall be required to be prepared in the English language within thirty days of an accident.

5.1.4 In the event that the final report is not made public, an accident investigation conducted in accordance with these regulations or a draft report of any stage of an accident investigation by another nation, its contents and any documents or information obtained for the accident investigation shall not to be circulated, published or made available to public without the consent of the chief investigator or without the consent of the investigating country.

5.2 PREPARATION AND SUBMISSION OF THE DRAFT FINAL REPORT FOR COMMENT AND SUGGESTION

5.2.1 After completion of all investigation works relating to the accident, the IIC shall prepare a draft final report and submit it to the Chief Investigator. SAIS s shall send the draft final report to the following states for comments:

(a) State of Registry;

(b) State of the Operator;

(c) State of Design;

(d) State of Manufacture;

(e) Any State that participated in the investigation of the accident.

5.2.2 In order to obtain substantive technical consultation on the draft Final Report, SAIS will send, through the State of Operator, a copy of the Draft Final Report to the operator to enable the operator to submit comments. Similarly, SAIS will send, through the State of Design and the State of Manufacture, a copy of the Draft Final Report to the organizations responsible for the type design and the final assembly of the aircraft to enable them to submit comments.

5.2.3 If there is any opinion or remark on the report thus sent, the concerned state shall be required to send their opinion or remark to the Commission within sixty days from the date of transmittal unless a delay is mutually agreed upon.

5.2.4 The following actions will be carried out by the SAIS of the Ministry:
ACCIDENTS TO AIRCRAFT OVER 2,250 KG
When the aircraft involved in an accident is of a maximum mass of over 2,250 kg, the Draft Report shall be sent to the following States/organizations for their comments:
the State of Registry

(a) the State of the Operator;
(b) the State of Design;
(c) the State of Manufacture;
(d) any State that provided relevant information, significant facilities or experts; and
(e) the International Civil Aviation Organization.

ACCIDENTS TO AIRCRAFT OF 2,250 KG OR LESS
When the aircraft involved in an accident is of a maximum mass of 2,250 kg or less and when airworthiness or any other matter considered to be of interest to other States are involved, Draft final Report shall be forwarded to:

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

5.2.5 In all cases the Draft Final Report (also final report & other communication) shall be submitted to appropriate States and to the International Civil Aviation Organization in English.

5.2.6 The Draft final Report shall be sent to the above mentioned States by e-mail. When matters directly affecting safety are involved, it shall be sent as soon as the information is available and by the most suitable and quickest means available.

5.2.7 A copy of the draft Final Report shall be sent to all States that participated in the investigation, inviting their significant and substantiated comments on the report not later than 60 days. The draft Final Report of the investigation shall be sent for comments to:

(a) the State of Registry;
(b) the State of the Operator;

(c) the State of Design with additional copy for organization responsible for type design; and

(d) the State of Manufacture with additional copy for organization responsible for assembly of aircraft.

5.2.8 If the comments are received from the State concerned within sixty days of the date of the transmission of letter, either the draft Final Report shall be amended to include the substance of the comments received or, if desired by the State that provided comments, the comments shall be appended to the Final Report. If no comments are received within sixty days of the date of the first transmission of letter, the Final Report shall be issued, unless an extension of that period has been agreed with the States concerned.

5.3 PREPARATION OF FINAL REPORT

5.3.1. The IIC shall prepare the final report based on the collected information and submit it to the Ministry. The IIC may include the opinion or remark received on the Report sent by the concerned states or agencies, partially or whole, in its report based on the appropriateness of the comment.

5.3.2. However, there shall be no restriction on the IIC to prepare the final report for the mere reason of not receiving the opinion or remark by the states as mentioned in 5.3 above within sixty days from the time the report is received by those States.

5.3.3. The format of the Final Report as in the **Appendix F** should be followed as far as possible. However, it may be adapted to the circumstances of the accident or incident.

5.3.4. The report should be self-contained in respect of its text. The body of the final report should comprise the Factual Information; Analysis; Conclusions & Safety Recommendations. The causes should include both the immediate and the deeper systemic causes. The recommendations should be for the purpose of accident prevention and any resultant correctiveaction. Photographs, sketches and evidence of particular significance such as mandatory references should appear as Appendices to the report.

5.4 RECORDS TO BE CONFIDENTIAL

5.4.1 Notwithstanding anything contained anywhere in this Manual, the following records shallremain confidential except for the purpose of investigation of the accident:

(a) cockpit voice recordings and airborne image recordings and any transcripts from such recordings;

(b) all statements taken from persons by the accident investigation authority in the course of their investigation;

(c) all communications between persons having been involved in the operation of the aircraft;

(d) medical or private information regarding persons involved in the accident or incident;

(e) recordings and transcripts of recordings from air traffic control units;

(f) analysis of and opinions about information, including flight recorder information, made by the accident investigation authority and accredited representatives in relation to the accident or incident; and
(g) the draft Final Report of an accident or incident investigation.

However, in the event that the said records are to be used for public or any other purpose, the Supreme Court shall determine that their disclosure or use outweighs the likely adverse domestic and international impact such action may have on that or any future investigations.

5.4.2 The records listed in 5.4.1 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.

5.4.3 Chief Investigator shall ensure that requests for records in the custody or control of the accident investigation authority are directed to the original source of the information, where available.

5.4.4 When issuing or receiving a draft Final Report, the Chief Investigator shall ensure that it is not disclosed to public.

5.4.5 No one shall publish or distribute the information obtained in course of accident investigation and the report thereof without the prior approval of the Ministry.
Provided that there shall be no limitation to publish or distribute such information after the report of accident is made public from the Ministry.

5.5 PUBLICATION AND DISSEMINATION OF FINAL REPORT

5.5.1 After the SAIS receives the final report of investigation of the accident, the SAIS shall make public the matters contained in report excluding the matter that must be kept confidential as per the prevailing laws.

5.5.2 After receiving the final report of the accident pursuant to Rule 17, the SAIS shall send the same report through the quickest means to the States mentioned in Rule 16(1) and the state whose citizen has died or been seriously injured in the accident.

5.5.3 The Final Report of the investigation of an accident shall be sent with a minimum of delay to:

(a) the State of Registry, in case of foreign registered aircraft
(b) the State of the Operator, in case of foreign operator
(c) the State of Design;
(d) the State of Manufacture;
(e) any State having suffered fatalities or serious injuries to its citizens; and
(f) any State that provided relevant information, significant facilities or experts.

5.5.4 The Final Report should be released in the shortest possible time and, if possible, within twelve months of the date of the occurrence. If the report cannot be released within twelve months, an interim statement should be released on each anniversary of the

occurrence, detailing the progress of the investigation and any safety issues raised. In order to provide relevant and timely information on the progress of the investigation to the families and accident survivors, guidance on assistance to aircraft accident victims and their families published by ICAO and ICAO policy on the subject be referred. However before release of any such information, approval of the Ministry must be taken.

5.5.5 When the investigation into an accident or an incident involving an aircraft of a maximum mass of over 5700 kg has been conducted and a Final Report has been released, a copy of the Final Report shall also be sent to the International Civil Aviation Organization.

5.6 RESPONSIBILITIES AS A CONTRACTING STATE

5.6.1 In case after the investigation has been closed and report made public, any significant evidence which was not in the knowledge of the Investigators comes to the knowledge of the Ministry, the same will be processed for its significance or relevance to the investigation by representatives of the SAIS. In case the information is significant in nature and prima facie it is felt that the investigation is required to be reopened, the Ministry shall reopen the investigation.

5.6.2 The Chief Investigator will ensure that if a draft investigation report from the State conducting the investigation is received for comments, the draft report or any part thereof, or any documents obtained during an investigation of an accident or incident, shall not be circulated, published or given access without the express consent of the State which conducted the investigation, unless such reportsor documents have already been published or released by that latter State.

5.6.3 Similarly as and when safety recommendations are received from any contracting State, the proposing State shall be informed of the preventive action taken or under consideration, or the reasons why no action will be taken within 90 days from the date of transmittal. In case it is agreed to implement the recommendation,immediate follow up action will be taken by SAIS with the concerned organizations and monitor its progress for speedy implementation.

CHAPTER 6
ADREP REPORTING

6.1 ACCIDENTS AND SERIOUS INCIDENTS

6.1.1 In accordance with Annex 13 – Aircraft Accident Investigation, States are required to send preliminary and final report to ICAO on all aircraft accidents, which involve aircraft of a maximum certificated take-off mass of over 2,250 kg. SAIS shall compile the data and send the same to ICAO as per the requirements. Some factual and circumstantial information relatedto an accident normally will be available within the first weeks of the investigation. The reportof all accidents and serious incidents will be sent, wherever applicable to

(a) the State of Registry, in case of foreign registered aircraft
(b) the State of the Operator, in case of foreign operator
(c) the State of Design;
(d) the State of Manufacture;
(e) any State having suffered fatalities or serious injuries to its citizens; and
(f) any State that provided relevant information, significant facilities or experts

6.1.2 When the aircraft involved in an accident is of a maximum mass of over 2 250 kg, Accident Data Report shall be sent, as soon as practicable after the investigation, to the International Civil Aviation Organization also by SAIS.

6.1.3 If a request is received from any State which had associated with the Investigation in anymanner, pertinent information additional to that made available in the Accident/Incident Data Report will also be provided to those States.

CHAPTER 7
ACCIDENT PREVENTION MEASURES

7.1 INCIDENT REPORTING SYSTEMS

7.1.1 In order to facilitate collection of information on actual or potential safety deficiencies the incident information and its investigation reports are mandatorily required to be reported toSAIS by FSSD, CAAN and Airline Operators.

7.1.2 The voluntary incident reports are also required to be reported to SAIS in order to facilitate collection of information on actual or potential safety deficiencies that may not be captured by the mandatory incident reporting system.

7.1.3 The voluntary incident reporting system established is totally non-punitive and affords protection to the sources of the information.

7.2 DATABASE SYSTEMS

Based on the information received from the Mandatory occurrence reports, voluntary reports, accident/ incident investigation reports, hazard reports etc. a database will be maintained by the SAIS in a joint co-ordination with the Safety Management Division, CAAN. To facilitate the effective analysis of information obtained from theabove stated resources, the data will be kept in the excel format till the software for data base system is developed. The data will then be kept in standardized formats for analysis and to facilitate data exchange.

7.3 ANALYSIS OF DATA — PREVENTIVE ACTIONS

7.3.1 The information contained in accident/incident reports is reviewed with follow up on recommendation. The database also will be utilized to have proper analysis of the critical fieldsto determine any preventive actions required.

7.3.2 In the analysis of the information contained in the database, if safety matters consideredto be of interest to other States are identified, such safety information will now be shared by SAIS with the Manufacturers so that same can be further forwarded to other States as soon as possible.

7.3.3 In addition to safety recommendations arising from accident and incident investigations, safety recommendations may result from safety studies, such safety recommendations will alsobe addressed to concerned organizations.

7.3.4 In case it is observed that a particular matter may be of interest to other States, such safetymatter will be sent by SAIS to those States as soon as possible.

7.4 EXCHANGE OF SAFETY INFORMATION

7.4.1 ICAO Annex 13 contains requirements for States to establish and maintain an accident

and incident database to facilitate the effective analysis of information on actual and potential safety deficiencies and to determine any preventive actions required.

7.4.2 As of now, Nepal has not implemented ICAO ADREP-compatible system nor the ECCAIRS. The State is using an excel sheet to store, share, analyze and exchange such information. The accident summaries are available on the website of Ministry Once the ICAO ADREF compatible software is implemented by the State, the exchange of data will be started with the help of COSCAP and ICAO.

CHAPTER 8
SAFETY RECOMMENDATIONS

8.1 GENERAL

8.1.1 As accident and incident investigations are conducted in accordance with ICAO Annex 13, the Investigation Commission or the Committee of Investigation or Investigation Team should recommend in a dated transmittal letter to the appropriate authorities in Nepal, as well as authorities in other States, any prevention action that it considers necessary to be taken promptly to enhance aviation safety.

8.1.2 The Investigation Commission or the Committee of Investigation or Investigation Team should forward any safety recommendations arising from its investigations in a dated transmittal letter to the accident investigation authorities of other States concerned and, when necessary, to ICAO.

8.1.3 The Investigation Commission or the Committee of Investigation or the Investigation Team should provide information on any safety issues identified, safety actions already taken, and proposals for safety recommendations to be considered for inclusion in the Final Report. The ICAO Manual of Aircraft Accident and Incident Investigation (Doc 9756), Part IV Reporting, contains detailed guidance on formulating safety recommendations and language for writing safety recommendations.

8.2 GUIDANCE ON WRITING SAFETY RECOMMENDATIONS

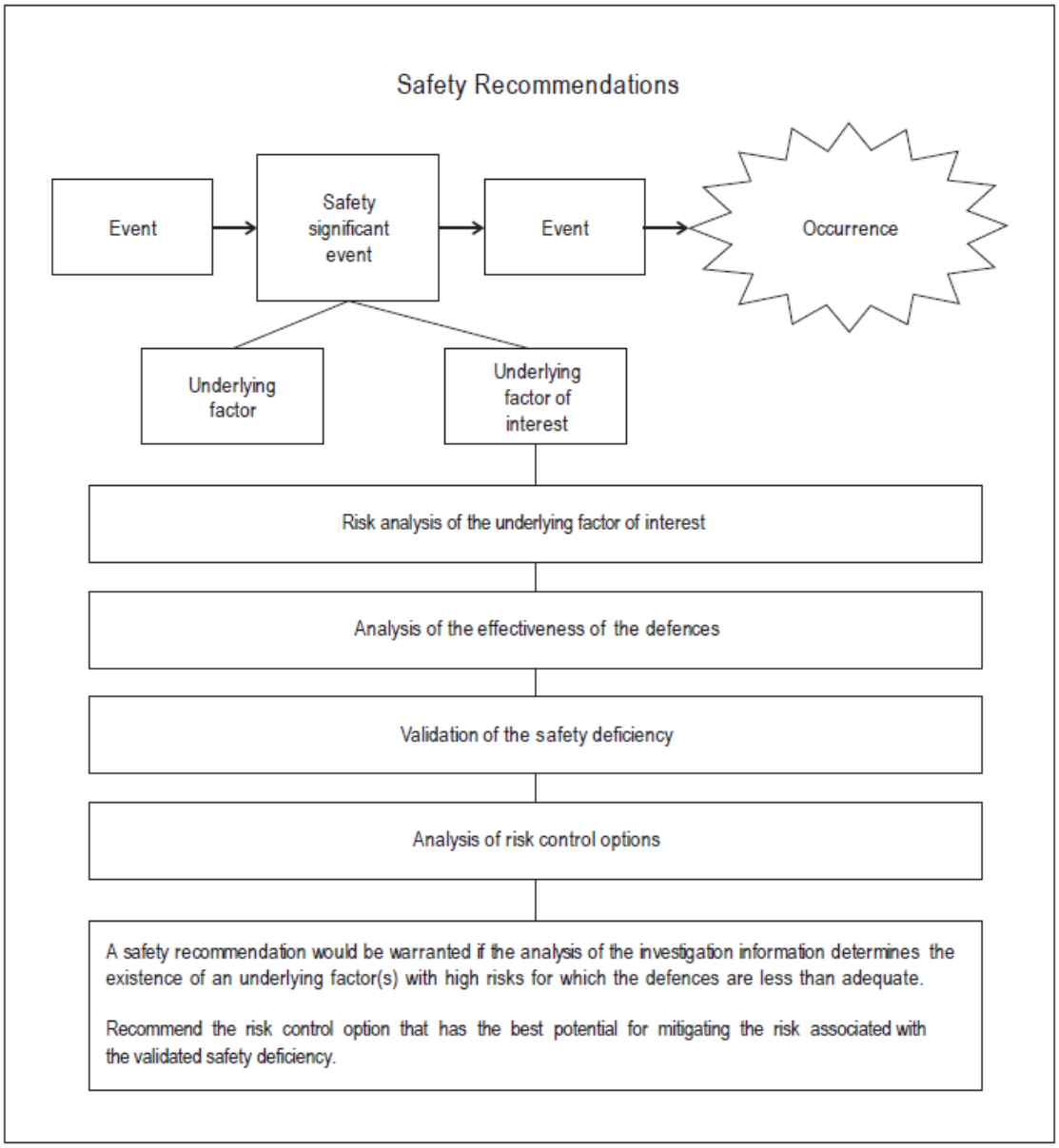
8.2.1 The safety recommendation section should include the following:

(a) A summary of the safety deficiency statement, including the unsafe condition, inadequacies of defenses, and the residual risk (of adverse consequences) if no action is taken; and

(b) The recommended safety action (risk-control options), including the performance expectations.

8.2.2 Any preventive action that is considered necessary to be taken promptly to enhance aviation safety at any stage of the investigation of an accident or incident, shall be recommended to the appropriate authorities, including those in other States.

8.2.3 When appropriate, any safety recommendations arising out of investigations shall be addressed to the accident investigation authorities of other State(s) concerned and, when ICAO documents are involved, to ICAO.



Ref: ICAO Doc 9756 Part IV

8.3 FOLLOW-UP OF SAFETY RECOMMENDATIONS

8.3.1 SAIS, in coordination with Safety Management Division, CAAN should have a safety recommendation "tracking system" to ensure follow-up on safety recommendations issued to organizations in Nepal and to other States to determine if safety actions have been taken to satisfy the recommendations, if actions are planned, or the reasons why the recipients are not taking actions.

8.3.2 For safety recommendations received from another State, the SAIS, in coordination with Safety Management Division, CAAN should inform the proposing State, within ninety days of the transmittal correspondence, of safety actions taken or under consideration, or the reasons why no actions should be taken.

8.3.3 Records of outgoing and incoming safety recommendation follow-up correspondence with Nepalese organizations and with other States should be maintained as part of the accidentinvestigation files at the SAIS.

APPENDIX A

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(Number-5)
Part -3
Government of Nepal
Ministry of Culture,Tourism and Civil Aviation

Notice No. 1

Civil Aviation (Investigation of Accident) Regulation, 2071 (2014 AD)

In exercise of power conferred by Section 5 of the Civil Aviation Act, 2015 (1959 AD), the Government of Nepal has framed following rules.

Chapter – 1 Preliminary

1. Short Title and Commencement:

(1) The name of these rules may be called the Civil Aviation (Investigation of Accident)Regulation, 2014.

(2) This regulation shall come into effect immediately.

2. Definition:

Unless the content and context requires otherwise, in these rules:

(a) "Accredited Representative" means the person appointed pursuant to Rule 13 to participate in the investigation of accident.

(b) "Commission" means the commission for investigation of accident set up pursuant toRule 10.

(c) "Seriously Injured" means the condition of an injury sustained by a person in anaccident or the following situation created due to such injury:

(1) requiring hospitalization for more than 48 hours within seven days from the date ofbeing sustained from injury;

(2) resulting in a fracture of any bone except simple fracture of fingers or nose;

(3) involving lacerations which cause severe hemorrhage due to injury in any organ ofthe body or caused damage to the nerve, muscle or tendon;

(4) involving injury to any internal organ of the body;

(5) affecting more than 5% of the body surface from burns;

(6) involving the exposure to infectious substances or injurious radiation so proved;

(d) "Investigation" means a process which includes but not limited to identify the causes of accident, to find out the facts thereof and draw the conclusion, to find out thehuman and technical errors occurred in the accident, to make the safety recommendations and to gather and analyze the information for preventing from

such accident in the future.

(e) State of Design" means the state under which jurisdiction the organization designing the type of the aircraft is located.

(f) "State of Registry" means the state on whose register the aircraft has been registered.

(g) "Accident" means any of the following occurrences taking place between the time any person boards the aircraft with the intention of flight until such time as all such person have disembarked in the case of passenger flight, and from the time of starting flight preparation until such time as the flight comes to an end in the case of flight without passenger:

1. A person gets injury, or is fatally or seriously injured, as a result of being on board the aircraft, or, being in contact with any detached part of the aircraft or exposure to jet blast, or such injured person dies.
   Provided that, any injury sustained or death caused due to the act of nature or being self-inflicted or being inflected by other person or stowaways hiding outside the areasprescribed to the passengers and crew shall not constitute an accident.

   Clarification: For the purpose of this sub-clause, "death" means death of a person injured in an accident within 30 days of the date of the accident.

2. The aircraft sustains damage requiring its major repair owing to adverse effect in
   structural integrity of the aircraft or interruption in the structural system of the aircraft.
   Provided that, the accident shall not be deemed to have occurred if the damage to the aircraft is limited to its engine, -cowlings or accessories or -propellers, probes, vanes, main rotor blades, tail rotor blade, wing tips, antennas, tires, brakes, fairings or if the damage is sustained due to small dents or puncture holes in the skin of aircraft.
3. The collision with any other aircraft or objects, falling down or burning of aircraft or its destruction in any other way.
4. The aircraft is missing or is completely inaccessible.

   Clarification: for the purpose of this clause an aircraft is considered to be missing when the official search has been terminated and the wreckage has not been located.

(h) "State of Occurrence" means the State in the territory of which an accident occurs.

(i) "State of Manufacture" means the state under which the aircraft manufacturer is located.

(j) "Pilot in Command" means the person in-charge of the flight responsible for flight operation and for the flight safety of the aircraft.

(k) "Authority" means Civil Aviation Authority of Nepal established under the prevailing law.

(l) "Flight Recorder" means equipment installed in the aircraft for recording the flight information and this term also includes the flight data recorder and cockpit voice recorder.

(m) "Ministry" means the ministry of Culture, Tourism and Civil Aviation.

(n) "Director General" means the Director General of the Authority.

(o) "Aircraft Owner" means the person or organization under whose name the aircraft has been registered and this term also includes the person or organization having the aircraft in lease.

(p) "Aircraft Operator" means the person or organization operating the aircraft or authorized to operate the aircraft under the prevailing law.

(q) "Local Body" means the village development committee or municipality.

(r) "State of the Operator" means 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.

(s) "Co-pilot" shall mean the person piloting the aircraft as an assistant of the Pilot in Command.

Chapter – 2 Notification of Accident, Security of the Accident Site and Protection of Evidence

3. <u>The Accident to be notified</u>:

(1) If anybody witnesses the accident of an aircraft occurred in the territory of Nepal, he shall provide the same information to the nearby Civil Aviation Office, District AdministrationOffice, Police Office or Local Body at the earliest.

(2) If any information of accident has been received pursuant to Sub-rule (1), the concerned office or body shall provide the same information to the police or Liaison Officer throughthe quickest means at the earliest.

Clarification: for the purpose of this clause "Liaison Officer" shall mean the official designated by the Ministry for receiving the information regarding the accident.

(3) Notwithstanding anything contained in Sub-rule (1) and (2), the following person shall provide the information regarding accident to the following body or official through the quickest means if the accident of the aircraft has occurred in the following place:

(a) By the Aerodrome Chief to the Director General if the accident of an aircraft has occurred in the airport area,

(b) By the Pilot in Command, Co-pilot or other crew member, if they are alive or in a position to provide the information, to the nearby Air Traffic Service Unit, Civil Aviation Office or Director General, and by the Air Traffic Controller or other personnel working in the aerodrome to the Director General or Liaison Officer if the accident of an aircraft has occurred in the territory of Nepal outside the Aerodrome.

(c) If the aircraft registered in Nepal meets an accident outside Nepal, by the Aircraft Operator or its agent to the diplomatic mission of Nepal if such mission has been

established and if such mission has not been established to the Director General or Liaison Officer.

(4) After receiving the information regarding accident of an aircraft pursuant to Sub-rule (3), the Director General shall provide such information to the Ministry and Liaison Officer atthe earliest.

(5) While providing information by the Air Traffic Controller or any personnel working in the airport pursuant to Sub-rule (3) (b), it shall be provided in the format as prescribed by the Ministry.

4. <u>The Information of Accident to be notified to the Foreign State or Organization:</u>

If the accident of any aircraft registered in the Foreign State has occurred within the territory

of Nepal, the Liaison Officer shall provide such information to the following State, missionand organization through the quickest and appropriate means:

(a) State of Registry;
(b) State of the Operator;
(c) State of Design;
(d) State of Manufacture;
(e) The diplomatic mission of such state, if established;
(f) International Civil Aviation Organization when the aircraft involved is of maximum massof over 2250 kg.

5. <u>Details to be mentioned while providing the Information</u>:

(1) While giving notice or information pursuant to Rule 3(4) and rule 4, the Director Generalor Liaison Office shall include following details to the extent possible:

(a) State of Registry
(b) Aircraft Manufacturer, model, registration mark and serial number of the aircraft;
(c) Aircraft Owner and aircraft operator;
(d) Name of crew members, their nationality and details of the passenger;
(e) Date and time, local and standard (UTC), of accident;
(f) Last point of departure and the point of landing of aircraft;
(g) Details to easily locate the accident site (geographical points and longitude andlatitude);
(h) Physical characteristics of accident site;
(i) Name and number of the decedents and seriously injured person;
(j) Nature of accident and possible details regarding the damage to the aircraft;
(k) The description of the dangerous goods onboard the aircraft, if any;
(l) Status of investigation.

(2) The details pursuant to Sub-rule (1) shall be written in simple English and Nepalilanguage.

(3) If the details mentioned in Sub-rule (1) could not be obtained at a time, they maybe sent in part again.

6. Provisions to be made for the Security of the Accident Site and the Protection of theEvidence:

(1) If information of accident of an aircraft within the territory of Nepal has been received pursuant to Rule 3, the concerned District Administration Office shall make the followingarrangement for security of the accident site and protection of evidence:
   (a) Prohibit the access of unauthorized person in the accident site;
   (b) Keep the aircraft in accident and its part safe from being further damaged or ruined;
   (c) Protect the evidence associated with the accident until the period required for investigation;
   (d) Take photo of the accident site and aircraft in accident, if required for protection ofthe evidence;
   (e) Check the aircraft and the goods, dead body or other materials on-board the aircraftfrom impairment, theft or loss.

(2) Notwithstanding anything contained in Sub-rule (1), if the State of Registry, State of the Operator, Sate of Design or State of Manufacture requests for keeping the accident site safe until their Accredited Representative inspect the place of accident, the Liaison Officer shall, with the help of the other bodies of the Government of Nepal as per the need, make an arrangement to keep such accident site safe to the extent possible so as to carry out the investigation work effectively.

(3) Notwithstanding anything contained in this Rule, the Liaison Officer may issue followingorder stating the reason thereof:
   (a) For protecting the goods, dead body, mail or such other materials in the aircraft on-board from fire or such other things, to take out or cause to take out such goods, dead body, mail or such materials from the aircraft on-board or keep these things in other safe place;
   (b) To remove the aircraft in accident from the accident site to continue the air transportation or eliminate the obstacle or danger that are likely to affect the general public.

7. Technical Team to be deputed in the Place of Accident:

(1) Upon receiving the notice of accident, the Ministry shall depute the technical team in the accident site at the earliest to carry out the preliminary investigation of the accident as well as to collect the necessary evidence in this regard.

(2) The technical team deputed pursuant to Sub-rule (1) shall submit the preliminary technical report to the Secretary of the Ministry after carrying out the investigation of the accident and collecting the evidence during the investigation.

8. The Aircraft or Goods may be handed over:

If the aircraft in accident and its parts or the goods in the aircraft on-board are not required for investigation of the accident, the Ministry may handover such aircraft and its parts or the goods in the aircraft to the Accredited Representative.

Provided that, the personal belongings onboard the aircraft shall be handed over to the

concerned person or his representative, if they are present.

Chapter – 3 Provision Relating to Investigation of Accident

9. Accident Investigation Official:

(1) The right to carry out the investigation of any kinds of accident occurred within the territory of Nepal shall remain with the Government of Nepal. Provided that, the provision of this Sub-rule shall not limit the Authority to carry out the preliminary investigation and get the report thereof.

(2) The Government of Nepal may carry out the investigation of an accident through expert or investigator as per the necessity.

10. Provision Relating to Commission:

(1) If the Ministry deems appropriate to carry out the detail investigation with regards to any accident, it may set up an independent Accident Investigation Commission for carrying out the investigation of such accident and submit the report thereof.

(2) While setting up the Commission pursuant to Sub-rule (1), the Ministry may designate or appoint the appropriate from among the following persons as coordinator or member of the Commission:

(a) Having at least fifteen years of experience in the civil aviation sector as pilot, flight engineer or air traffic controller,

(b) Trained in the investigation of aircraft accident ;

(c) Having sufficient knowledge, experience in the investigation of accident of aircraft, and specialized in the civil aviation sector, in the case of coordinator of the Commission.

(3) Notwithstanding anything contained in Sub-rule (2), the person having relationship, direct or indirect, with the Aircraft Operator or the service provider of the aircraft in accident shall not qualify to be the member or coordinator of the commission.

(4) The secretariat of Commission shall be located at the Ministry.

(5) The procedure relating to meeting of the Commission shall be as decided by the Commission itself.

(6) The term of the Commission shall be as fixed by the Government of Nepal during the course of the Commission set up.

11. Function, Duty and Power of the Commission:

The function, duty and power of the Commission shall be as follows:

(a) To enter in and investigate the accident site and the aircraft in accident and cause to keep any part or wreckage of the aircraft intact until the investigation is completed;

(b) To investigate or cause to investigate the aircraft or any part or equipment of aircraft or any goods onboard the aircraft, to carry out their analytical examination and to carry out the necessary works including to cause the aircraft or its part or equipment intact until the investigation is completed;

(c) To take in custody the wreckage, other relevant goods, flight recorder and A.T.S.recorder of the aircraft in accident;

(d) To ask the concerned person or organization to submit the necessary book, document, certificate and other articles relating to the accident and take such materials into its custody pending the investigation;

(e) To make a person present as a witness through a written or verbal notice and to take necessary information or written statement from him;

(f) To enter into any place relating to the accident as per the need by giving written notice;

(g) To examine the evidence, information or document, if any received from the Chief District Officer, police or other body or person, relating to the accident and keep such evidence, information or document as evidence;

(h) To make an arrangement for reading of flight recorder without any delay, to send the flight recorder in other country if the facility to read the flight recorder is not available in Nepal and to make arrangement for effective use of flight recorder;

(i) To make an arrangement for medical test of crew member, flying team member, passenger or other person in accident from the qualified doctor as per the need;

(j) To carry out the autopsy of the cockpit crew member, cabin crew member, passenger or other person died in the accident, from the competent pathologist;

(k) To take expert help or service from International Civil Aviation Organization, regional aviation organization, concerned body or person with regards to investigation of the accident as per the need;

(l) To inform immediately to police and National Civil Aviation Security Committee if the accident of an aircraft has

(m) To carry out the investigation works by prescribing the responsibilities of the Coordinator and members of the Commission;

(n) To carry out other works for accomplishing the investigation of the accident impartially and independently.

12. <u>Support to be provided to the Commission:</u>

(1) The Commission may request the concerned person or body to provide necessary support in the investigation work of the accident.

(2) If request has been made pursuant to Sub-rule (1), the concerned person or body shall provide their support to the Commission.

(3) If the person or official of the body not providing the support pursuant to Sub-rule (2) is working with the public entity, the Commission may write to the concerned body to take necessary action against such person or official.

(4) If request has been made pursuant to Sub-rule (3), the concerned body shall take departmental action against such person or official as per their law relating to their terms of service.

(5) While taking departmental action pursuant to Rule (4), a reasonable opportunity has to beprovided to submit their clarification as per the law relating to their terms of service.

13. <u>Provision Relating to Accredited Representative:</u>

(1) If the State of Registry, State of the Operator, State of Design or State of Manufacturer wishes to make their representation in the investigation works of the accident

(2) To obtain the relevant, factual and other information and notice.

(3) The Accredited Representative or expert shall avail the Commission of all the relevant information received by them.

(4) The accredited representative or expert shall not make the information public and bring it into the discussion without the approval of the Commission.

(5) If the aircraft registered in Nepal meets an accident in the foreign country, the Government of Nepal may appoint and send its accredited representative for investigationof that accident.

(6) The power and responsibilities of Accredited Representative appointed pursuant to Sub-rule (8) shall be as prescribed by the Government of Nepal at the time of his appointment.

14. <u>Record to be Confidential:</u>

(1) Notwithstanding anything contained anywhere in this Regulation, the following records shall remain confidential except for the purpose of investigation of the accident:

(a) The inquiry carried out or statement taken from different person during the investigation;

(b) The documents relating to exchange of information that are with the person concerned with the operation of aircraft or the record so recorded;

(c) The medical and other personal information of the person in accident;

(d) The cockpit voice recording and the transcript thereof;

(e) The recording of Air Traffic Control Unit and transcript of such recording, flightrecorder as well as the analytical statement of the information;

(f) The cockpit image recording and any part or transcript of such recording.

(2) No one shall publish or distribute the information obtained in course of accident investigation and the report thereof without the prior approval of the Ministry.

(3) Notwithstanding anything contained in Sub-rule (1), if any

foreign state wishes to support in the investigation work of the accident or to provide necessary information, facilities orexpert in this regard, it may appoint and send it's Accredited Representative.

(4) The Accredited Representative pursuant to Sub-rule (1) and (2) shall have following right with the approval of theCommission:

(a) To inspect the place of accident;

(b) To examine the wreckage of the aircraft in accident;

(c) To obtain information from the witness and advice with regards to the question to be asked to the witness;

(d) To access on the available relevant evidence;

(e) To obtain the copy of the necessary document;

(f) To read the recorded information;

(g) To take part in investigation work to be carried out outside the accident site such as checking the parts, technical briefing of the accident and simulation works;

(h) To participate in other investigation works of the accident.

(5) Notwithstanding anything contained in this Rule, if any citizen of a foreign state is seriously injured or died in the accident and if such state wishes to be involved in the investigation of the accident, it may appoint one expert.

(6) The expert appointed pursuant to Sub-rule (4) shall have following right with the approval of the Commission.

(a) To inspect the accident site;

Provided that, there shall be no restriction to publish or distribute such informationafter the report of accident is made public from the Ministry.

Chapter – 4 Provision Relating to Report

15. <u>To Submit the Preliminary Report:</u>

(1) After carrying out the preliminary investigation of the accident, the Commission shallsubmit the report thereof to the Ministry.

(2) The report submitted by the Commission to the Ministry pursuant to Sub-rule (1) shall be

sent to the following state and organization:

(a) State of Registry ;
(b) State of the Operator;
(c) State of Design;
(d) State of Manufacture;
(e) State providing necessary information with regards to the accident, significant facilities and expert; and
(f) International Civil Aviation Authority when the aircraft involved is of

maximummass of over 2250 k.g.

(3) The preliminary report pursuant to Sub-rule (2) shall be required to be prepared in the English language and sent through any electronic means or post office normally within thirty days from the date of accident.

(4) Notwithstanding anything contained in Sub-rule (3), upon receiving the information that directly affects the aviation safety, such information shall be sent through the quickest means.

16. To Send the Report for Comment and Suggestion:

(1) After completion of all investigation works relating to the accident, the Commission shallbe required to prepare a report thereof and send to the following state for opinion and remark:

(a) State of Registry ;
(b) State of the Operator;
(c) State of Design;
(d) State of Manufacture;
(e) State involved in investigation of the accident.

(2) If there is any opinion or remark on the report sent pursuant to Sub-rule (1), the concerned state shall be required to send their opinion or remark to the Commission within thirty days from the receipt of the report.

17. To Prepare the Final Report:

(1) The Commission may include the opinion or remark received pursuant to Rule 16(2), partially or whole, in its report considering also the propriety thereof.

(2) After completion of taking the opinion or remark pursuant to Rule 16, the Commission shall prepare the final report based on the collected information and submit it to the Ministry.

(3) Notwithstanding anything contained in Sub-rule (2), there shall be no restriction to the Commission to prepare the final report merely due to not sending of the opinion or remark by the state as per Rule 16(1) within the time mentioned in Rule 16(2).

18. To Submit the Final Report:

(1) After receiving the final report of the accident pursuant to Rule 17, the Ministry shall

send the same report through the quickest means to the country mentioned in Rule 16(1) and the state whose citizen had died or been seriously injured in the accident.

(2) Notwithstanding anything contained in Sub-rule (1), when the aircraft involved is of maximum mass of over 5700 kg the Ministry shall submit the accident investigation report to the International Civil Aviation Organization.

(3) While sending the report to the International Civil Aviation Organization, it has to be sent at the earliest and within twelve months from the date of accident to the extent

possible.

19. Final Report to be made Public:

After receiving the final report of investigation of the accident, the Ministry shall make public the matters contained in report excluding the matter that must be kept confidential as per the prevailing laws.

20. Not to be accepted as Evidence:

21. To cause to be Implemented:

(1) If the Commission has made any recommendation to consolidate the flight safety during investigation or through final report, it shall be the duty of the concerned body to implement such recommendation.

(2) If the accident of an aircraft registered in Nepal has occurred outside Nepal and if the Commission for investigation of accident set up by that country has made recommendation to consolidate flight safety, the concerned body shall implement such recommendation at the earliest and report thereof to the concerned state.

(3) If the recommendation made pursuant to Sub-rule (1) and (2) could not be implemented, the concerned body shall be required to inform the same to the Ministry stating the reasonthereof.

The report of the Commission shall not be accepted as evidence in any court proceedings.

Chapter – 5 Miscellaneous

22. Investigation of Serious Incident or Incident may be carried out:

(1) Notwithstanding anything contained anywhere in this Regulation, the Ministry may carry out the investigation of serious incident of aircraft occurred within the territory of Nepal. Provided that this will not limit the Director General to designate the technical team and get the preliminary technical report.

Clarification: for the purpose of this clause, "Serious Incident" means an incident involving circumstances indicating that an accident nearly occurred.

(2) If the Director General receives the report pursuant to Sub-rule (1), a copy thereof has tobe submitted to the Ministry.

(3) Notwithstanding anything contained anywhere in this Regulation, the Director General

may carry out the investigation of incident occurred with the territory of Nepal.

Clarification: for the purpose of this clause, "Incident" means the situation other than the accident which affects or could affect the flight safety of aircraft operation.

23. Re-investigation may be carried out:

If any new or important evidence is found after the formal completion of investigation works of the accident formally and if there would be material change regarding facts in

the accident investigation report, the Government of Nepal may carry out the re-investigation of that accident under this Regulation.

24. To Implement the Accident Information System:

(1) The Authority shall develop the accident information system and implement it to make theflight safety effective within the territory of Nepal.

(2) The Authority may develop the voluntary and mandatory accident information system and implement it with the objective to collect the information that does not fall under the accident information system but affects to the flight safety.

(3) The Authority may establish the accident statistics system to maintain aviation safety and to make aware all concerned of the aviation safety, and also to help prevent the accident likely to occur in future.

(4) The Authority shall provide the statistics pursuant Sub-rule (3) to the Ministry as well.

(5) The name of informant providing information for the statistic system pursuant to Sub-rule

(3) shall be kept confidential, if such informant does not wish to disclose his name.

25. Cost of Investigation of Accident:

The cost of investigation of accident or serious incident shall be provided by the Governmentof Nepal.

26. May Carry out through the Authority:

Any work to be carried out by the Government of Nepal or the Ministry under this Regulation may be carried out through the Authority as per the necessity.

27. To be as per the Annex and Manual:

The provisions regarding investigation of any accident, serious incident and incident shall be as provided in this Regulation to the extent mentioned herein and the provisions which arenot contained in this Regulation shall be as per the Annex and Manual issued by theInternational Civil Aviation Organization.

28. Procedure may be framed:

The Ministry may frame the necessary procedures for effective implementation of the Civil Aviation Act, 2015 (1959 AD) and this Regulation.

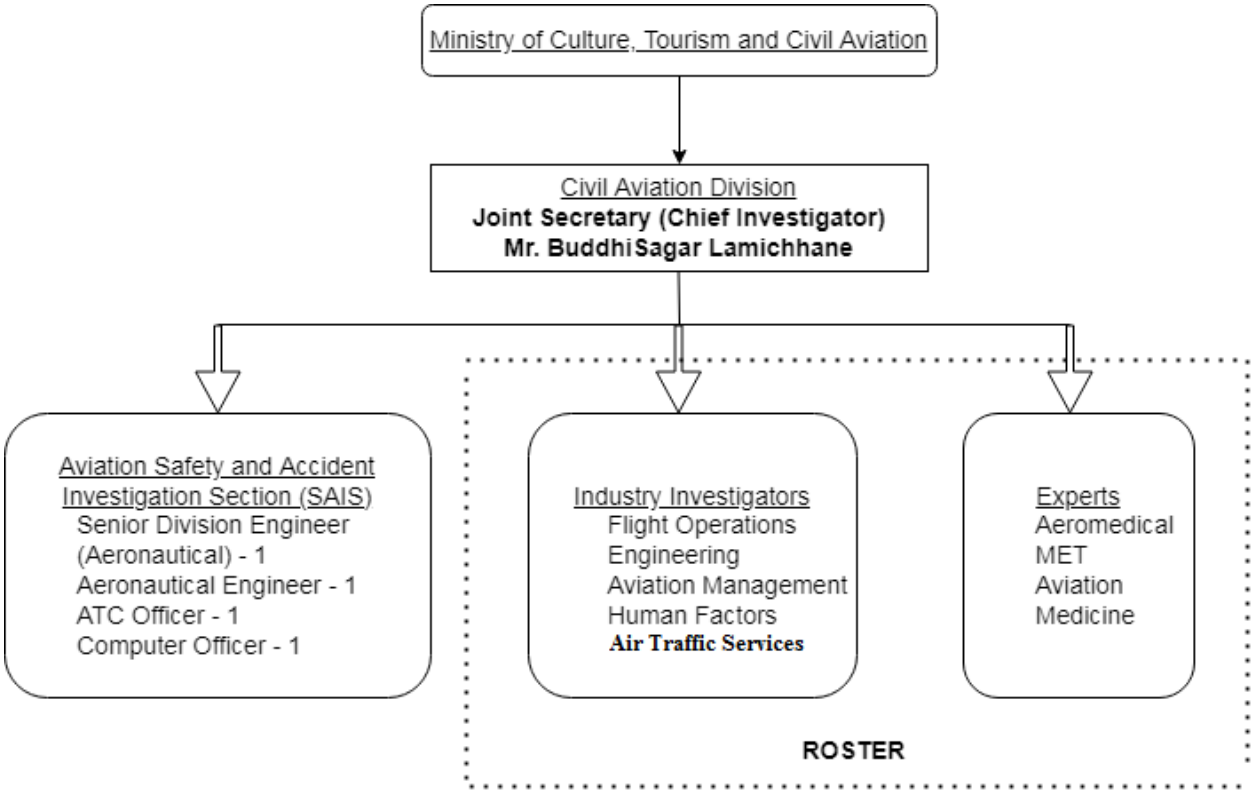
29. Repeal and Saving:

(1) Civil Aviation (Investigation of Accident) Rules, 2024 have been repealed.

(2) The works performed pursuant to the Civil Aviation (Investigation of Accident) Rules,2024 shall be deemed to have been done under this Regulation.

APPENDIX- B

Aircraft Accident Investigation Organization



APPENDIX B1

List of Officials to be notified of serious incidents/accidents

The following officials need to be notified of Serious Incidents/Accidents.

Civil Aviation Authority of Nepal **Rescue Coordination Centre** Tribhuvan International Airport	Ministry of Culture, Tourism and Civil Aviation Civil Aviation Division **Mr. Buddhi Sagar Lamichhane**
Phone Number: +977-1-4113000, +977-9851187000 (24 Hrs. point of contact) Fax Number: e-mail:	Phone Number: +977-1-4211870, +977-1-4211624 Fax Number: +977-1-4211758 e-mail: bslamichanne@tourism.gov.np
Civil Aviation Authority of Nepal **Flight Safety Standard Department** Sinamangal, Kathmandu	**Director General** Civil Aviation Authority of Nepal Babarmahal, Kathmandu
Phone Number: 977 01-4111119, -4111075, -4111042 Fax Number: 977 01 4111198 e-mail: flightsafety@caanepal.gov.np	Phone Number: 977-01-4262416 Fax Number: 977-1-4262516 e-mail: dgca@caanepal.gov.np

Table: List of officials to be notified of serious incidents/ accidents

APPENDIX B2

In-house Procedure

1. On receipt of information of accident within the territory of Nepal, the Joint Secretary of Civil Aviation Division (CI) or a person properly delegated will collect initial information in co-ordination with RCC.
2. If required, he will send a technical team to the accident site for preservation of perishable evidence, wreckage protection, initial witness accounts, ATS records sealing and transportation of CVR/FDR, if installed.
3. The Joint Secretary will, after evaluation of initial information, determine the extent of investigation and instruct SAIS to raise a file for instituting an investigation. He will recommend the IIC and other investigators to the Minister for approval.
4. Joint Secretary will forward the initial information to the Chief of FSSD who is responsible for dispatching Initial Notification to concerned states.
5. SAIS will issue letters along with Job Descriptions to the investigators once the investigation is instituted.
6. The initial introductory meeting will be held where the roles, responsibilities, rights and obligations as investigators will be discussed.
7. The IIC will be responsible for investigation. If required, the IIC will submit the Preliminary Report to the Ministry within 30 days of the accident. SAIS will forward the preliminary report to the concerned States.
8. The IIC will submit Draft Final Report of the Investigation to the Ministry. SAIS will send it to concerned organizations as per Annex 13, for Comments
9. The SAIS will coordinate for comments and suggestions if any and will assist the IIC for issuance of final report considering comments and suggestions within 60 days from the organizations.
10. After issuing the Final Report, SAIS will make the report publicly available through ministry's website and send the Final Report to all the concerned states and organizations.

APPENDIX B3

Risk Assessment on Accident Site

INVESTIGATION NUMBER	AIRCRAFT TYPE
DATE	ASSESSMENT PRODUCED BY

ITEMS TO BE CHECKED	DANGER EXISTS	NO DANGER	NOT KNOWN	REMARKS
THE WRECKAGE				
1. Danger of fire	☐	☐	☐	_____
2. Hot areas after fire	☐	☐	☐	_____
3. Flammable fuel	☐	☐	☐	_____
4. Other flammable liquids	☐	☐	☐	_____
5. Acid material	☐	☐	☐	_____
6. Dangerous goods	☐	☐	☐	_____
7. Risk of explosion	☐	☐	☐	_____
8. Ammunition or pyrotechnics	☐	☐	☐	_____
9. Risk of electric shock	☐	☐	☐	_____
10. Dangerous components	☐	☐	☐	_____
11. Toxic fumes and/or	☐	☐	☐	_____
12. Sharp glass and/or metal	☐	☐	☐	_____
13. Sharp composite material	☐	☐	☐	_____
14. Risk of collapsing structures	☐	☐	☐	_____
15. Risk of falling material	☐	☐	☐	_____
16. Bio hazard	☐	☐	☐	_____
17. Pressurized components	☐	☐	☐	_____
18. Electromagnetic radiation	☐	☐	☐	_____
19. Radioactive radiation	☐	☐	☐	_____
20. Pressurized systems	☐	☐	☐	_____
21. Composite ash	☐	☐	☐	_____
ENVIRONMENTAL RISKS				
22. Other traffic	☐	☐	☐	_____
23. Rain	☐	☐	☐	_____
24. Heat	☐	☐	☐	_____
25. Darkness or bad lighting	☐	☐	☐	_____
26. Slippery areas	☐	☐	☐	_____
27. Risk for the injury	☐	☐	☐	_____
28. Risk of falling	☐	☐	☐	_____
29. Risk of drowning	☐	☐	☐	_____
30. Risk of violence	☐	☐	☐	_____
31. Dangerous wildlife	☐	☐	☐	_____

OTHER FACTORS

32. Protective equipment insufficient	☐	☐	☐	_____
33. Lack of resources	☐	☐	☐	_____
34. Lacking of proper tools	☐	☐	☐	_____
35. Rush and/or fatigue	☐	☐	☐	_____
36. Lack of vaccinations	☐	☐	☐	_____
37. Other danger	☐	☐	☐	_____

RESULT OF RISK ASSESSMENT (Are the risks acceptable and actions required)

THIS DOCUMENT MUST BE FILED IN INVESTIGATION FOLDER

APPENDIX C

ICAO Reporting & Notification Checklist

Note. -- In this checklist the following terms have the meaning indicated below:
-- International occurrences: *accidents and serious incidents occurring in the territory of a Contracting State to aircraft registered in another Contracting State;*
-- Domestic occurrences: accidents and serious incidents occurring in the territory of the State of Registry;
-- Other occurrences: accidents and serious incidents occurring in the territory of a non-Contracting State, or outside the territory of any State.

1. NOTIFICATION -- ACCIDENTS AND SERIOUS INCIDENTS

From	For	Send To	Annex 13 Reference
State of Occurrence	International occurrences: All aircraft	State of Registry State of the Operator State of Design State of Manufacture ICAO (when aircraft over 2 250 kg)	4.1
State of Registry	Domestic and other occurrences: Aircraft over 2 250 kg	State of the Operator State of Design State of Manufacture ICAO	4.8

2. ACCIDENT REPORTING Accidents wherever they occurred

From	Type of report	Concerning	Send to	Annex 13 Reference
State conducting the investigation	PRELIMINARY REPORT	Aircraft over 2250 kg	State of Registry or State of Occurrence State of the Operator State of Design State of Manufacture State providing information, significant facilities or experts ICAO	7.1
		Aircraft of 2250 kg or less	Same as above, *except* ICAO	7.2
	ACCIDENT DATA REPORT	Aircraft over 2250 kg	ICAO	7.5
	INCIDENT DATA REPORT	Incident of aircraft over 5700 Kg	ICAO	7.7

	FINAL REPORT	All aircraft	State instituting the investigation State of Registry State of the Operator State of Design State of Manufacture State having interest because of fatalities State providing information, significant facilities or experts ICAO	6.4
		Aircraft Over 5700 kg	ICAO	6.7

APPENDIX C1

Format and content of Notification

ICAO Initial Notification				
Name, Organization and contact information of person/organization submitting notification:	Name: Title: Organization: Address: Telephone: Email:			
a) for accidents the identifying abbreviation ACCID, for serious incidents SINCID, for incidents INCID;		ACCID (Accident) ☐	SINCID (Serious Incident) ☐	INCID (Incident) ☐
b) manufacturer, model, nationality and registration marks, and serial number of the aircraft;				
c) name of owner, operator and hirer, if any, of the aircraft;				
d) qualification of the pilot-in-command, and nationality of crew and passengers;				
e) date and time (local time or UTC) of the accident or serious incident;		(dd/mm/yy) local date: / / local time:	(dd/mm/yy) UTC date: / / UTC time:	
f) last point of departure and point of intended landing of the aircraft;		Last point of departure:_____ Point of intended landing:_____		
g) position of the aircraft with reference to some easily defined geographical point and latitude and longitude;				
h) number of crew and passengers; aboard, killed and seriously injured; others, killed and seriously injured;		Persons on board _____crew _____pax Fatal _____crew _____pax _____others Serious Injury _____crew _____pax _____others Minor _____crew _____pax _____others		
i) description of the accident or serious incident and the extent of damage to the aircraft so far as is known;				
j) an indication to what extent the investigation will be conducted or is proposed to be delegated by the State of Occurrence;				
k) physical characteristics of the accident or serious incident area, as well as an indication of access difficulties or special requirements to reach the site;				
l) identification of the originating authority and means to contact the investigator-in-charge and the accident investigation authority of the State of Occurrence at any time;				

m) Presence and description of dangerous goods on board the aircraft.	☐ No ☐ Yes - If yes, UN #_____		
Operation Type (If information is available)	Commercial Aviation ☐ General Aviation ☐	Schedule ☐ Non-Scheduled ☐	Passenger ☐ Cargo ☐
Level of damage to aircraft (If information is available)	Destroyed ☐ Minor ☐	Substantial ☐ None ☐	
The State of Occurrence shall forward a notification of an accident or serious incident with a minimum of delay and by the most suitable and quickest means available to: a) the State of Registry; b) the State of the Operator; c) the State of Design; d) the State of Manufacture; and e) the International Civil Aviation Organization, when the aircraft involved is of a maximum mass of over 2 250 kg.			

APPENDIX D

Address of Accident Investigation authorities

Updated addresses of aircraft accident investigation authorities can be obtained from *https://www.icao.int/safety/AIA/Pages/default.aspx*

APPENDIX E

Segregation and sealing of documents in case of an aircraft accident or serious incident:

The following are the broad outlines of the records which should be segregated and sealed as soon as possible after the accident occurs:

a) Air Traffic Services:
   i) Log books of all the relevant ATS including Radar Units.
   ii) All messages pertaining to the aircraft including data like flight progress strips, etc.
   iii) All messages detailing information passed to the aircraft.
   iv) Log books of all ATS vehicles employed for search and rescue, fire-fighting and visits to the site of accident etc. Note: The vehicle log book should be sealed after relevant entries are made. These entries should be made immediately on return from the operation.

b) Aeronautical Communication Service:
   i) All tapes containing messages exchanged with the aircraft.
   ii) All tapes containing messages exchanged/communicated regarding alerting, search and rescue and firefighting etc.
   iii) All messages regarding the aircraft.
   iv) Relevant records/log books of all the Navaids used just prior to accident.
   v) The dairy of Duty Officer of Communication Centre.

c) Rescue and Fire Fighting Services:
   i) The occurrence book of the Fire Fighting unit concerned.
   ii) Log books of the vehicles engaged in the search and rescue and actual firefighting operations.

Note: These books should be sealed after necessary entries have been made regarding completion of rescue and firefighting operations.

d) Meteorological Department (Aviation);
   i) All records pertaining to Metars, Specis & weather warning which could be of relevance to the aircraft involved.
   ii) All records forming basis of the information regarding Metars, TAF.
   iii) The special weather observation recorded immediately after the accident.
   iv) Log books of the Duty Officers at different positions.

e) Documents of aircraft:
   i) All documents including log books regarding, maintenance, servicing etc. of aircraft should be segregated and sealed by the Operator and handed over to the Aircraft Accident Investigator or his representative.
   ii) Documents such as aircraft file, flight reports, performance reports and concessions granted if any.

f) Fuel Sample:
   The sample of fuel/oil uplifted should be preserved by the fuel vendor. A separate fuel/oil sample should also be collected and sealed by Aircraft Accident Investigator or his representative.

The list is not exhaustive and investigators may include other items also.

Appendix E1

Investigation Management System Events

1. Initial response
2. Initial actions at the site
3. Secure flight operations documents
4. Human remains recovery
5. Eyewitness interviews
6. Flight recorder recovery
7. Secure weather documents
8. Secure air traffic services and airport documents
9. Search and rescue operations
10. Secure pertinent cabin documents
11. Secure maintenance documents
12. Examination of systems
13. Examination of structures
14. Examination of engine(s) and propeller(s)
15. Initial survey of the accident site
16. Site photography (Phase 1)
17. Review of operations documents
18. Crew member medical examinations
19. Plot flight path
20. Read-out of flight recorders
21. Review of weather documents
22. Review air traffic services and airport documents
23. Evacuation operations
24. Review pertinent cabin documents
25. Review of maintenance documents
26. Examination and testing (Systems)
27. Fire and explosion
28. Examination and testing (Power plants)
29. Wreckage distribution plotting
30. Site photography (Phase 2)
31. Flight crew members interviews
32. Victim identification
33. Interviews of next of kin
34. Analysis of flight recorders data
35. Interviews (Meteorology)
36. Interviews (Air Traffic Services andAirport)
37. Rescue operations
38. Cabin condition
39. Interviews (Maintenance and Records)
40. Interviews (Systems)
41. Crashworthiness
42. Aircraft performance
43. Autopsies
44. Re-interviews (Eyewitnesses)
45. Navigation aids and airport status
46. Firefighting operations
47. Interviews (Cabin crew and passengers)
48. Maintenance management
49. Wreckage reconstruction
50. Analysis and report of OperationsGroup
51. Analysis and report of Medical/HumanFactors Group
52. Analysis and report of Witness Group
53. Analysis and report of Flight RecordersGroup
54. Analysis and report of Meteorology Group
55. Analysis and report of ATS and AirportGroup
56. Analysis and report of Survivability Group
57. Analysis and report of Cabin Safety Group
58. Analysis and report of Maintenance andRecords Group
59. Analysis and report of Systems Group
60. Analysis and report of Structures Group
61. Analysis and report of Power plants Group
62. Analysis and report of Site Survey Group
63. Analysis and report of Photo/Video Group
64. Operations analysis and findings
65. Technical analysis and findings
66. Report of the Investigator-in-charge

APPENDIX E2

Guidelines for on-site investigation

1 AIM OF ON-SITE INVESTIGATION

The aim of the on-site investigation is to collect as much evidence as possible before the wreckage has been disturbed. Sometimes the time available for an on-site investigation may be limited by factors outside the control of Investigation Personnel, such as weather, or a hazardous location. Focus should be given on collecting relevant evidence rather than trying to analyze the occurrence on-site.

2 ON ARRIVAL AT THE SITE

The Investigating Personnel must complete the following immediately on arrival at the site:

2.1 Check with the Police whether there has been any disturbance of the wreckage during any rescue operations and record the extent of the disturbance.

2.2 It may be required that the site is not disturbed by persons such as the land owner, aerodrome owner or local authority agencies. Pursuant to the Aircraft Rules, it is however an offence for a person to hinder, or prevent, access by an authorized person to a place to which access is necessary. Attention should be paid on the normal functional use of the occurrence site.

2.3 Review arrangements for guarding the site and impress on any guards the importance of their duties, in order to:

(a) Prevent disturbance of the wreckage
(b) Protect and preserve, where possible, any impact marks made by the aircraft
(c) Admit only those persons or vehicles authorized.

3 PRECAUTIONARY MEASURES

Observe the following precautionary measures:

3.1 If the site has been attended by emergency services any fire has probably been extinguished. As long as there is fuel in the wreckage and ignition sources for example, batteries precautions must be taken to prevent an outbreak of fire. In particular you should check that electrical power is not still applied to any system which could cause a hazard to personnel for example, radiation from a radar transmitter. Fire appliances should be kept at hand as long as the risk remains. If residual fuel has to be drained from the aircraft as a precautionary measure, the quantity removed and from which tank(s) it was removed must be recorded.

3.2 During subsequent examination of the wreckage beware of further fire/explosion hazard by rupturing any system component for example oxygen supply lines. Other hazards, which may be present at the site, particularly after a fire has occurred, are associated with the following:

(a) Inflated tyres
(b) Compressed springs
(c) Hydraulics/pneumatics
(d) Oleos
(e) Igniters
(f) Oxygen systems - fixed and portable
(g) Fire extinguishers
(h) Evacuation chutes
(i) Flares
(j) Life rafts and jackets

(k) Composite materials.

Dangerous cargo may have been in the aircraft. This may be confirmed by the aircraft operator. In this case examination of the wreckage must not commence until there is confirmation by an expert that the site is safe for personnel to work in. This applies particularly to radioactive or biological cargo. It should be remembered that fire or impact may have damaged protective packaging of dangerous cargo thus rendering them most hazardous and difficult to recognize, especially if labeling has been destroyed or has come off.

4 INITIAL SURVEY OF THE SITE

4.1 The primary considerations at this time are to establish:

(a) A probable flight path
(b) Impact angle
(c) Impact speeds
(d) Whether or not the aircraft was under control
(e) Whether structural failure occurred prior to impact.

4.2 A check that all of the major components of the aircraft, particularly the extremities, are present at the accident site will provide a good indication (though not a completely reliable one) of whether or not structural failure contributed to the occurrence. One should be aware that items of wreckage may be submerged, buried or otherwise concealed.

4.3 Proceed as follows when carrying out the initial survey:

4.3.1 After discussions with the police (or other local authority in charge) carry out a preliminary survey. Do not attempt a detailed examination at this stage. The aim is to obtain as complete and clear a picture as possible of the circumstances under which the accident occurred. Establish the point of initial contact with the ground or other objects and then follow the subsequent path of the aircraft by searching for marks or scars on the ground, on buildings, trees, shrubs, rocks, etc.

4.3.2 Take into account the general state of the wreckage including location of items of wreckage, contents of the aircraft and location of survivors and bodies. The wreckage itself should not be moved or disturbed.

4.4 The impressions gained during the general survey of the wreckage and the knowledge gained of the terrain will assist in planning further investigation and assessing priorities in the work to be undertaken.

5 SITE RECORDS

All physical evidence and deductions made for various aspects from the wreckage/aircraft must be recorded. This would be most useful during later analysis of the occurrence. Additionally, a pocket-sized notebook will be convenient for recording details at the accident site. This should be retained for later reference.

6 ACCIDENT LOCATION

Determine and record the precise location of the accident site. This can be a problem in remote, rugged terrain where ground features are scarce. A Global Positioning System (GPS)receiver would be useful for this purpose. Determine the site elevation and significant terrain gradient as both may be relevant to the accident. A surveyor may later be engaged to provide this information if it cannot be determined

from maps and other sources.

7 EVIDENCE

7.1 Review the arrangements for guarding the site when making the preliminary survey of the entire accident scene. Use this opportunity to re-emphasize to all concerned that the pieces of wreckage must not be moved or disturbed. Since the preservation of impact marks is very important, careful note should be made of all ground marks so that guard arrangements may be amended where necessary to provide additional security.

7.2 Ensure that all aspects of the wreckage trail are preserved until they have been photographed and their description and location have been recorded. This includes such items as marks and scars upon trees or rocks, location of pieces of wreckage, and locationof bodies or human remains.

7.3 Ensure that flight recorders are immediately retrieved and kept in safe custody for analysis purposes.

8 PRESERVATION OF EVIDENCE

8.1 In carrying out an occurrence investigation, officers will be required to handle various articles, which may be required as evidence (in the form of exhibits) in various proceedings. These articles may consist of documents or aircraft components or material. You must, therefore:

(a) Ensure that the integrity of these potential exhibits is preserved.
(b) As a general rule, handle evidence as little as possible.
(c) Retain the item as closely as possible in its original condition.
(d) Make immediate arrangements for appropriate preservation and safe storage. Thismay include oiling, greasing, wrapping or sealing.

Note: Investigators collecting parts should not attempt to match fracture surfaces together,because of the damage that can be caused to those surfaces.

9 COLLECTION AND HANDLING OF FLUID SAMPLES AS EVIDENCE

9.1 Fuel and other fluid samples require special consideration. If there is any likelihood of the fluid samples being required as evidence, they should be obtained in accordance with the following procedures:

(a) If possible, three samples should be taken in the presence of the person giving permission.
(b) Each sample should, if possible, be placed in an identical sample bottle.
(c) The sample bottles should then be security sealed.
(d) Each bottle should be marked with the source, date, time and place of the taking of the sample and should be signed by the officer concerned.
(e) The three sample bottles should then be distributed as follows:
    - One to the owner or, with the owner's permission, an agent, pilot in command or the personresponsible for the maintenance
    - One for analysis
    - One to be retained as a control

If it is not possible to comply with the above conditions, try to obtain a sample in the bestway the circumstances allow.

10 RELEASE OF WRECKAGE:

10.1 There should be no pressure to release all of the on-scene wreckage. Often it is better to arrange for wreckage removal and storage and to retain control of the wreckage in case there is a need to examine it later.

10.2 When on-site investigation has been completed, the aircraft wreckage should be handed over to the owner or their representative so that salvage/clean-up operations can commence. It is essential to obtain a receipt for the evidence. You must record the movement of that evidence.

10.3 In case of an occurrence to an aircraft registered in other contracting State, the aircraft, its contents or any parts thereof shall be released by SAIS as soon as they are no longer required in the investigation, to any person or persons duly designated by the State of Registry or the State of the Operator, as applicable.

10.4 For this purpose access to the aircraft, its contents or any parts thereof, shall be facilitated provided that, if the aircraft, its contents, or any parts thereof lie in an area within which it is impracticable to grant such access, removal shall be affected to a point where access can be given.

11 PERSONAL EFFECTS

Record the position of personal effects found at the site of an occurrence. Hand them to police, obtaining a receipt for significant items, when no longer required for the investigation and make a record of this.

12 ALLOCATION OF TASKS

After the initial survey in case groups have been formed for investigation purposes, the IIC assigns the investigation tasks to the members of the team(s), having regard to their special qualifications and to the initial assessment of the priorities of gathering factual information relating to the accident. The importance of timely discussion with other groups when key evidence is discovered should be emphasized. Additionally, regular meetings of the groups should be held to review the progress of work and to permit a free interchange of ideas and information by group members. Investigators will often be working in unpleasant conditions, and the group leaders should impose realistic targets for individual members. All investigators should be permitted reasonable rest periods.

13 PHOTOGRAPHS

Take photographs as soon as possible after the occurrence and before the wreckage is moved or disturbed. Where bodies are present, photographs are desirable before removal. Photograph impact marks as a first priority, preferably during the initial walk-through of the site, as these may be obliterated by later activity at the accident site. Good photographs furnish the best possible record of an occurrence site. Since many photographs will be taken, it is essential that they are labeled and indexed in some way to assist later analysis. A simple title-board written with a felt pen and sheet of paper can be used to identify close-upphotographs. Note that some recent cameras provide the facility not only to date/time-stamp each photo, but to also digitally enter a caption. Photographs should cover general views of the scene from four directions and also back along the wreckage trail to the first point of contact. A good coverage of the wreckage in the condition in which it is found and before it is disturbed is essential. Record the location and direction of each photograph, paying particular attention to the following:

(a) Engine(s), before anything is moved, showing details of condition and damage from all angles, to include:
(b) Engine control lever positions at the engines
(c) Engine components, and accessories
(d) Engine instrument readings and positions of control levers and switches.

Note: While important, these indications and settings are easily affected by forces of the crash and are not always conclusive indications of positions at the time of impact.

(e) Instrument settings and readings
(f) Position of controls in the ockpit
(g) Radio settings
(h) Autopilot setting
(i) Fuel selectors
(j) Switch positions
(k) Undercarriage and flap selector positions o Engine control lever positions
(l) Position of flap jacks, undercarriage jacks, latches o Control surface positions
(m) Trim tab settings
(n) Suspicious breakages or bends
(o) Propeller/rotor blades showing pitch positions o Fire damage
(p) Impact marks
(q) Seats and seat belts.

Consider also any photographs or video imagery taken by witnesses.

14 WRECKAGE

14.1 WRECKAGE DISTRIBUTION CHART

After you have made your initial study of the general scene of the accident and taken photographs, your first step in the actual investigation is usually that of plotting the distribution of the wreckage from a convenient datum. This task must be carried out carefully and accurately, as the study of the completed chart may later suggest possible failure patterns or sequences. You will refer to it frequently during the investigation and it will supplement your written report. In most accidents the chart should record the following:

(a) Locations of all major components, parts and accessories Freight o Locations at which any accident victims were found
(b) The initial contact markings and other ground markings, with suitable reference to identify the part of the aircraft or component responsible for the marking
(c) If terrain features appear to have a bearing on the accident or on the type or extent of structural damage they too should be noted
(d) Pertinent dimensions, descriptive notes and also the locations from which photographs were taken add to the completeness of the chart.

14.2 EXAMINATION OF IMPACT MARKS AND DEBRIS

Determine which part of the aircraft impacted first. This can usually be done by locating the marks of the first impact of the aircraft, and examining the distribution of the wreckage. The path of the aircraft may be deduced by careful examination of ground marks or scars on trees, etc. Wing tips, propellers or landing gear leave telltale marks or torn-off parts at points of contact with fixed objects. Ground scars used in conjunction with height of broken trees will assist in establishing angle, attitude and speed at impact. From these marks it is usually possible to form a preliminary mental picture of :

(a) The direction, angle and speed of descent
(b) Whether it was a controlled or uncontrolled descent
(c) Whether the engines were under power at the time of impact
(d) Whether the aircraft was structurally intact at the point of first impact.

14.3 WRECKAGE IN THE WATER

Investigation at times may involve an aircraft which has ended up in water. Recovery may be expensive and time-consuming and this has to be weighed up with the likely benefit to be achieved. Wreckage in salt water can deteriorate quickly, particularly magnesium and, to a lesser extent, aluminum parts. As this process accelerates on exposure to air, wreckage collected from salt water must be washed thoroughly with fresh water as soon as it is raised. Further preservation action will be required for any components that must be subjected to metallurgical examination. Water-displacing fluid, oil or inhibited lanolin may be used as an interim preservative solution. Components such as CVR and flight-data recorders should not be dried but kept in fresh water until a specialist can assume responsibility.

15 OPERATIONS INVESTIGATION

15.1 OVERVIEW OF OPERATIONS INVESTIGATION

The Operations Investigation is concerned with facts relating to the history of the flight and to the activity of the flight crew before and during the occurrence. The major areas involved in the Operations Investigation are:

(a) Crew histories, qualification/proficiency
(b) Flight planning
(c) Weight and balance
(d) Weather
(e) Air traffic services
(f) Communications
(g) Navigation
(h) Aerodrome facilities
(i) Aircraft performance
(j) Compliance with relevant instructions
(k) Examining witness statements
(l) Determination of final flight path
(m) Sequence of flight.

There is a close link between the work in the Operations Investigation and that in other investigation areas — for instance, the flight path of the aircraft as constructed from air traffic control and witness statements should be compared with that derived from flight recorders. Such corroboration, whenever possible, constitutes one of the principles of a properly executed investigation, namely, cross-checking the validity of information from one source against information on the same subject from a different source.

15.2 CREW HISTORIES

A study of all the facts pertaining to the crew forms an important part of both the Operations and Human Factors investigations. Because these two aspects are closely related, a high degree of coordination in the collection and evaluation of the relevant facts is required to achieve the best possible use of the information collected. The crew histories should cover their overall experience, their activities, especially during the 72 hours prior to the occurrence, and their behavior during the events leading up to the occurrence.

15.3 FLIGHT PLANNING

A flight plan may have been prepared and filed with air traffic services. This will providethe data such as the route, cruising altitudes and timings. It may also provide fuel load and fuel consumption etc,

which may need to be examined in detail and correlated to the actual flight path. Commercial operators often have flight planning sections, which prepare all flight plans, and will have a copy of the flight plan even if one is not available in the aircraft. In the case of occurrences involving navigation factors or fuel consumption questions, it may be necessary to check flight plans and navigation logs to ensure that the data from which the flight plans were derived were relevant to the particular circumstances of the intended flight, such as weather, aircraft type and model, cruising altitude etc. In the case of light aircraft operated on private and training flights, it will be useful to ascertain the crew's intentions regarding the flight and any maneuvers planned.

15.4 WEIGHT AND BALANCE

A weight and balance sheet based on the planned flight may have been prepared.Commercial flights generally use a standard form for these calculations. In the case oflight aircraft, a weight and balance sheet is rarely prepared. Since weight, balance andload are critical factors that affect aircraft stability and control, especially in light aircraft,considerable effort should be made to deduce the most probable weight of the aircraft atthe time of the occurrence, having regard to the flight time since take-off. It will benecessary to check flight manual load data sheets, fuel records, freight and passenger documentation to arrive at a final estimate. Elevator trim settings may give a clue to the centre of gravity at the time of the occurrence.

15.5 WEATHER

Weather conditions at the time of the occurrence may be obtained from actual observations or by a post-flight analysis requested from the Department of Hydrology and Metrology, GoN.

15.6 AIR TRAFFIC SERVICES

Circumstances of an occurrence may require that an operations or air traffic specialist be included to investigate these aspects of an occurrence. This person is responsible for establishing, recording and verifying the accuracy of all information relevant to Air Traffic Services in connection with the flight. These include the following:

(a) Relevant AIPs
(b) NOTAM
(c) Aeronautical Information Circulars (AICs)
(d) Flight plan
(e) Flight plan and departure messages
(f) Various progress strips
(g) R/T transcripts
(h) Radar plots
(i) Manual of Air Traffic Services (MATS)
(j) ATS procedures
(k) ATS software.

The various functions exercised by Air Traffic Services such as ground movement control, departure control, area control, approach control and aerodrome control may enable to trace the progress of the flight from the planning stage up to the occurrence.

15.7 COMMUNICATIONS

Communications between aircraft and ATS are normally recorded. ATS tapes relevant to the accident are to be removed and sealed immediately. Since the tapes are recycled every 30 days, an immediate request must be made to ATS if access to them is required.

15.8 NAVIGATION

The navigational equipment carried in the aircraft should be checked against the aircraft records and the remains of the navigational equipment recovered from the wreckage. The serviceability and performance of navigation aids which may have been in use should be checked. This may include comments from other users. The possibility of use of Global Positioning System (GPS) must also be considered. The adequacy of current maps and charts and the currency of the charts used in the aircraft should be checked.

15.9 AERODROME FACILITIES

The status of aerodrome facilities used by the aircraft may have to be examined and verified. Assistance of an Aerodrome Personnel in this part of the investigation should betaken as this is his/her area of expertise.

15.10 AIRCRAFT PERFORMANCE

The basic source of information concerning aircraft performance is the Flight Manual/Operations Manual, the amendment status of which is important. While this information will prove to be adequate for normal investigation purposes in most cases, it may be necessary, in some instances, to examine the data from which the Flight Manual performance is determined, to establish its validity to the particular circumstances of the occurrence. This will require consultation with the manufacturer.

15.11 COMPLIANCE WITH INSTRUCTIONS

A necessary part of the operational investigation is to establish whether particular directives were complied with. The directives should also be examined to establish whether, in the light of the accident, they were proper and adequate for ensuring safety of operations, and whether they were presented in a format easily understood. In examining these matters it is important to distinguish what material has mandatory effect and what is advisory. The directives may have many different forms including the following:

(a) Flight Manual
- Operations Manual NOTAM
- Aeronautical Information Publications (AIP)

(b) Aeronautical Information Circulars
(c) Aircraft Manufacturer's Notices
(d) Airworthiness Directives
(e) Maintenance Control Manual
(f) Maintenance System.

15.12 STATEMENTS OF WITNESSES

Witness Statements may be used in conjunction with evidence obtained from other sources of operational information. You may then have to go back to witnesses to resolve discrepancies. When statements from witnesses' conflict with each other and with evidence obtained from other sources, you may need to re-interview the witness in question to try to resolve the discrepancies.

15.13 DETERMINING THE FINAL FLIGHT PATH

The reconstruction of the last stage of the flight, that is, the accident phase, necessitates close cooperation between the various groups or individuals involved in the investigation. If a separate

group has been set up for Operations Investigation, this becomes its primary concern. The intention should be to build up a complete picture of the final events as they occurred, in proper sequence, and to evaluate their inter relationships. The period of time to be covered will depend on the circumstances. Generally, the period should commence when the flight departs from normal (safe) operation and should terminate when the inevitability of the accident is indisputably apparent. This may or may not always be the point of impact — for example, in the case of an in-flight break-up.

15.14 SEQUENCE OF FLIGHT

Although the investigation will focus on the occurrence, it is usually desirable to discuss the development of the entire sequence of the flight.

16 FLIGHT RECORDERS

The term 'Flight Recorders' encompasses three separate and distinct types of airborne recorders: the Flight Data Recorder (FDR), the Cockpit Voice Recorder (CVR) and Quick Access Recorder (QAR).

16.1 RECORDER TYPES

16.1.1 FLIGHT DATA RECORDER

The FDR, often referred to as the 'flight recorder', or Digital Flight Data Recorder (DFDR), is a system for recording the values of defined basic flight parameters in relation to a time base. The number of parameters recorded varies from aircraft type to aircraft type. The parameters recorded for a particular aircraft can be obtained from the operator. The digital recorders in use in the majority of aircraft have a limited recording cycle of 25 (operating) hours. If they are required for investigation, prompt action is required to ensure their removal from the aircraft. Although FDRs are built to withstand rough handling, including shock, immersion in water and fire, and are internally shielded, they should be handled with care until they are handed over for analysis by specialist. No attempt should be made to open them or apply electrical power to any cables or sockets. Keep them away from any radiation (radar source) or strong magnetic fields.

16.1.2 COCKPIT VOICE RECORDER

The CVR is a system for recording cockpit crew conversations (and ambient noises) via a multi-directional microphone, the cockpit intercommunications system, the Public Address system and radio-telephone (R/T) communications.

16.1.3 QUICK ACCESS RECORDER

The QAR, or Flight Data Acquisition Unit, is a recorder installed in some aircraft which uses the same information sources as the impact-protected DFDR.

16.1.4 AIR TRAFFIC SERVICE RECORDINGS INCLUDING GROUND BASED RECORDINGS

Communications with Air Traffic Services are normally recorded and may be made available provided the tapes are requested before they are recycled through the system (after 30 days). If an opportunity to listen to a communications tape is made available, do not only listen to any spoken words but also listen to background noises. While background noises are often difficult to discern, different sounds — for example, stall warning, undercarriage warning, horn or fire warning bells — may be heard. Other sources of communications evidence should not be

overlooked although some may not be recorded. Other aircraft on the frequency and ground stations monitoring it may be useful. When appropriate, communications on the operator's communication network should also be investigated. Continuous recordings are made of communications on ATS frequencies as well as radar data. These tapes are re-used after a period. This period, usually 15 to 30 days, is to ensure that they are available for any investigations. For Radar tapes ATS needs to be advised as soon as possible, so that relevant tapes can be removed from circulation.

17 STRUCTURAL INVESTIGATION

17.1 OVERVIEW OF AIRCRAFT STRUCTURE INVESTIGATION

The aircraft structure investigation concentrates on the airframe, including primary and secondary structure, lift and control surfaces. When investigating an accident caused by structural failure of the airframe or system, study the wreckage and evaluate separated components and fractured surfaces. Failure of the airframe structure, fittings, attachments, and other components are sometimes obscured by the ensuing accident. However, these may have been the primary cause of in-flight disintegration or ground impact in an out-of-control situation. Knowledge of the history of the flight, prevailing weather conditions, aircraft behavior, and the probable type of air loads sustained during flight maneuvers will assist in determining failure areas.

17.2 RECONSTRUCTION OF WRECKAGE

Reconstruction is employed for specific components such as a wing panel, tail surface or control system, although in some instances it has been necessary to reconstruct almost all major components. Reconstruction is performed in two stages:

Stage 1 Identify the various pieces and arrange them in their relative positions

Stage 2 Examine in detail the damage to each piece, and establish the relationship of this damage to the damage on adjacent or associated pieces.

The latter is the chief purpose of reconstruction

17.2.1 PRELIMINARIES

Before commencing reconstruction work,

(a) Photograph the entire site and wreckage.

(b) Complete the wreckage distribution chart.

(c) Inspect and make notes on the manner in which the various pieces were first found, by walking around the site.

17.2.2 IDENTIFICATION OF PIECES

The difficulty in reconstructing a component, such as a wing, lies in identifying the various pieces of wreckage. If the wing has broken up into a few large pieces, the task is relatively simple. If, on the other hand, the wing has broken into a number of small piecesas a result of high impact speed, reconstruction can be extremely difficult. The most positive means of identification are:

(a) Part numbers which are stamped on most aircraft parts, which can be checked againstthe aircraft parts catalogue

(b) Coloring (either paint or primer)

(c) Type of material and construction

(d) External markings

(e) Rivet or screw size and spacing.

17.2.3 RECONSTRUCTION ON-SITE

Collect parts from the suspected area, identify them and then arrange them on the ground in their relative positions. Lay out major components such as the wing, tail and fuselagein plan form for ease of later examination. Note, however, that if the suspected area is at the junction of the major components, these areas are sometimes reconstructed separately. For ease of examination, lay out individual cable runs with their associated bell cranks, idlers and quadrants separately. If significant markings are found on any of these latter items, corresponding markings must be sought out in the relative positions in the wing, fuselage etc.

17.3 EXAMINATION OF THE AIRCRAFT STRUCTURE

Specific components or items may require additional examination and the same be gotexamined at appropriate Laboratories within Nepal or if such facilities are not available in Nepal, an approved facility outside Nepal. When carrying out a detailed examination of an aircraft's structure, specialists should be consulted for:

(a) Properties of metals and fracture analysis - Materials Evaluation Facility specialists
(b) Basic causes and contributing factors associated with in-flight structural failures of major components - Engineering Specialists
(c) Specific evidence that can be obtained by studying the scores, smears, indentations and other markings, both at the impact site and on aircraft parts -. Engineering Specialists

17.3.1 AIRFRAME

The first priority during the preliminary examination at the accident site is to determine if a structural failure occurred before impact. To do this, the first step is to separate impact damage from in-flight structural failure damage. Valuable information can be gathered from a study of the various smears and scores found on different parts of the wreckage. Where possible, study these before the wreckage is disturbed, since movement of the wreckage may destroy clues or create misleading ones.

17.3.2 MAINPLANES, FUSELAGE AND TAIL UNIT

One of the primary aims when examining the structure is to determine whether there is evidence that any part of the structure was not in its correct relative position at the time of impact.

Components such as cables, pulleys, hinges and tab mechanisms must be examined to determine whether the failure of any of these items was caused by wear, inadequate maintenance or impact.

17.3.3 UNDERCARRIAGE

Examine the selector, link mechanism, up and down locks and position of the operating jacks or actuating cylinders to ascertain whether the undercarriage was up or down. If the gear had failed or separated, note the direction of the force which caused the failure or separation.

17.4 POWER PLANT INVESTIGATION

17.4.1 OVERVIEW OF POWERPLANT INVESTIGATION

The failure or malfunction of one or more power plants may be the cause of an occurrence. For this reason it is essential that a careful examination of the power plants and their associated components be made to determine whether they are involved as a causal or predominant factor in the particular occurrence under investigation. The purpose of power plant investigation and analysis is to determine:

(a) The condition of the engine at the time of impact

(b) The engine power or thrust at the time of impact or failure
(c) The sequence of failure and cause of any engine malfunction or failure.

The power plant investigation should include a carefully detailed documentation of all evidence, to include:

(a) A comprehensive survey of the impact site and extent of wreckage distribution,
(b) length and depth of ground impact scars and craters,
(c) consistency and hardness of the terrain, and
(d) the slope of the impact area.

This information will already have been recorded during the initial site inspection. Any additional details that the power plant investigation turns up should be added as overlays to the original site plan and wreckage-distribution chart, and later copied to the original. Maintain an inventory of the engine(s) to ensure that all engine parts, components, and accessories are accounted for and aligned with each respective engine.

17.4.2 PROCEDURE FOR EXAMINING ENGINE COMPONENTS AND SYSTEMS

Follow this procedure when examining various engine components and systems.

(a) Check the original Site Plan and Wreckage Distribution Chart for the geographical location and scatter pattern of all engine, parts and accessories, and correct where necessary.
(b) Note the identity and location of any part that may be moved (or removed from the crash site for any reason), altered, or affected by rescue, salvage, or weather conditions.
(c) Note in particular:
(d) Evidence of case penetration
(e) Burn-through damage
(f) Ruptured fuel or oil lines
(g) Loose fittings
(h) Any items that are suspected to be of foreign origin.
(i) Collect any fuel, oil, and hydraulic fluid samples to minimize post-impact contamination or loss of the limited quantities that may remain.

Note: *Where power plant failure occurs and fuel contamination is a suspected cause, not only should samples of fuel be obtained from the aircraft system, but an immediate investigation should be made of the fuel servicing and storage facilities at the last refueling point*.

(a) Examine the fuel system, including:
- All filters, screens and pumps
- Check tanks and cells
- Fuel lines and valves.

(b) Examine propeller(s) for:
- Impact damage and overall condition
- Evaluate broken blades to determine the result of failure, that is, impact, over speed, malfunction, or fatigue breakage. Blade angle is a function of power being delivered by the engine. Therefore, blade angle may be one method that can be used to establish engine power or thrust. As a rule, propellers under high power at impact can be expected to bend or curl forward at the tips, while under low power, the blades should curl rearward at the tips. Wind milling or stationary blades should be

bent rearward.

18 SYSTEMS INVESTIGATION

18.1 OVERVIEW OF SYSTEMS INVESTIGATION

Systems Investigation covers investigating and reporting on:

- (a) Hydraulics
- (b) Electrics and electro-pneumatics
- (c) Pressurization and air conditioning
- (d) Ice and rain protection Instruments
- (e) Air data computer
- (f) Flight director
- (g) Stall warning
- (h) Radio and navigation systems
- (i) Autopilot
- (j) Fire detection system
- (k) Oxygen system.

There is inevitably a degree of overlap with systems covered under sections relating to structures and power plants. The technical information necessary to enable a detailed analysis of individual aircraft systems/components should be obtained from the Manufacturer/ Operator.

18.2 INVESTIGATING AIRCRAFT SYSTEMS

Each aircraft system must be accorded the same degree of importance regardless of the circumstances of the occurrence. There is no way to determine adequately the relationship of any system to the general area without a thorough examination. Data developed by the examination of one system may be helpful in proving or disproving the integrity of other systems. The examination of the system will generally involve more than examination of components in-situ. It can involve the functional testing, under laboratory conditions, of an individual component, or of the complete system using off-the-shelf duplicates of the component or system. Computer software fitted in some modern aircraft may be recovered and operated in a simulator to determine its role in the occurrence. For each system that you investigate:

(a) Obtain from the aircraft manufacturer or from the operator, appropriate detailed schematic diagrams or working drawings to determine what components are included in each system. The diagrams will also be helpful in analyzing the effect of a malfunctioning component on the rest of the system.

(b) Make every effort to account for all the components. Each system can be broken down into six areas as shown below. This should assist in accounting for components. These areas are:

- Supply
- Pressure
- Control
- Protection
- Distribution
- Application.

Documentation of components should include:

(a) Nomenclature

(b) Component manufacturer's namePart number
(c) Serial number
(d) Specification number (where provided).

Some components having the same part number may be used in various parts of the same system, especially in the hydraulic and pneumatic systems. It may be necessary to obtain listings showing actual location of these components in the system by serial number. The positions of switches and controls in the cockpit, together with the found (as-is) position of any moving parts will have been photographed during the initial stages of the investigation. Obtain copies of these photographs and crosscheck the readings on all available instruments. If the original photographs are not ready, take an additional set of photographs to supplement your documentation.

19 MAINTENANCE INVESTIGATION

19.1 OVERVIEW OF MAINTENANCE INVESTIGATION

The purpose of the maintenance investigation is to review the maintenance history of the aircraft in order to determine:

(a) Information that could have some bearing on the occurrence, or which could point to a particular area of significance for regulatory investigation and action
(b) Whether the aircraft has been maintained in accordance with the specified standards
(c) Whether, having regard to information gained during the investigation, the specified standards are satisfactory.

19.2 SECURE AIRCRAFT AND MAINTENANCE DOCUMENTATION

Following notification of the commencement of a regulatory investigation of an aircraft occurrence, secure the related documents by applying to the operator to hand over the following:

(a) Aircraft log books
(b) A copy of the current, and if possible, expired Maintenance Releases
(c) Maintenance work-packages and any other appropriate certification documentation.
(d) Approved Maintenance System, or the applicable accepted maintenance schedule for the aircraft.

19.3 AIRCRAFT LOG BOOKS AND MAINTENANCE RELEASE

Inspect the aircraft log books and both current and expired maintenance releases to ascertain the following information:

(a) The operating history of the airframe, engines, and associated components; the hours flown, cycles, landings, and, where appropriate, the status of any life-limited components
(b) The history of accidents, incidents, defects and irregular or abnormal operations which have been reported or which become known during the investigation and any subsequent rectification or other action taken
(c) Whether all required maintenance, including applicable Airworthiness Directives, have been carried out
(d) That all modifications incorporated have been accomplished in accordance with approved data
(e) Whether the aircraft history has been entered in the log books in accordance with the applicable log book instructions.

19.4 MAINTENANCE DOCUMENTATION

In addition to an inspection of the aircraft documentation, an examination of the maintenance organization's work packages and any other certification documentation relating to maintenance should be undertaken to determine:

(a) That all maintenance and modifications has been carried out on the aircraft by authorized or approved persons

(b) That all the maintenance carried out was certified-for in accordance with applicable legislation by authorized or approved persons If the maintenance system has been followed correctly record any discrepancies or omissions.

APPENDIX E3

Guidelines for Occupational Health and Safety

It is recognized that safe working environment which is without any risk to health should be maintained for all engaged in accident investigation & wreckage examination. The following guidelines apply to all who are likely to face exposure to potentially infectious or injurious substances or objects when conducting occurrence investigations. Everyone has a responsibility to ensure that he or she works safely, and so protects others in the workplace. Adherence to the work practices described, together with the use of appropriate personal protective equipment, will reduce on-job risk for all exposed to accident site hazards. Application of the procedures set out herein will ensure that:

(a) Everyone is given relevant and up-to-date information to enable them to make responsible decisions when faced with possible exposure to conditions that may pose a safety or health hazard.

(b) Measures are taken to safeguard health and, where exposure does occur, to provide appropriate levels of treatment and counseling to minimize long-term effects arising from the exposure.

Because of the specialized health and safety risks arising from accident investigation tasks, these procedures should be applied wherever and whenever necessary.

1 Pathological Hazards

Contact with human and animal remains and body fluids is a serious health hazard because of the risk of bacterial, viral and fungal contamination. Exposures to pathogens are unpredictable and since infection can be transmitted through direct contact with the eyes, nose and mouth (mucous membranes), an open cut, dermatitis rash/chafed skin,or open skin sore, it is required that General Precautions be taken by all while working on-site where the potential for exposure exists.

2 General Precautions

General precautions shall be observed to minimize exposure to infectious materials. Risk reduction precautions shall include the following:

(a) Direct contact with any potentially infected wreckage or soil should be avoided.

(b) Until properly protected, any investigative procedure on potentially infected wreckage or soil, which might tend to splash, spray, generate droplets or otherwise disperse contaminated particulate matter should be avoided.

(c) Do not eat, drink, smoke, apply lip balm or skin cream, or handle contact lenseswhile in those areas defined as bio-hazard areas.

(d) Use antiseptic hand towel immediately after leaving the bio-hazard area andremoving personal protective equipment.

(e) Wash your hands with antiseptic soap and running water as soon as feasible afterusing the antiseptic towels.

(f) Any personal investigative equipment, (cameras, notebooks, etc.) which maybecome contaminated with infectious materials shall be examined and either

decontaminated or disposed of as appropriate, prior to removal from the bio-hazard area.

(g) Wash your skin or flush mucous membranes with water as soon as feasible following contact of your body areas with potentially infectious materials.

(h) No one with a pre-existing condition that would facilitate the spread of a blood- borne pathogen for example, open hand or facial cuts, skin rashes, open sores will be permitted access to the bio-hazard area.

3 Bio-hazards

Biohazards are blood-borne pathogens that cause disease in humans. They are microorganisms which, when they enter human blood, can cause disease in humans. Infectious pathogens can be found in fatally injured persons as well as injured survivors. These pathogens include, but are not limited to:

(a) Hepatitis B Virus (HBV)
(b) Human Immunodeficiency Virus (HIV)
(c) Malaria
(d) Meningococcal bacterium
(e) Lyme Disease
(f) Queensland Tick Typhus
(g) Ross River Fever
(h) Syphilis
(i) Tetanus.

The General and workplace infection control procedures apply to both HBV and HIV. Infection transmission of other pathogens is interrupted by the procedures adopted for HBV/HIV.

(a) HBV

Hepatitis B virus causes inflammation of the liver, and may result in an individual becoming an HBV carrier with the potential to infect others. Liver failure and death can follow Infection. HBV can remain viable outside the human body for some days and can exist in dried blood/body fluids. The disease, because of its abundance in a given infected blood sample, relative to HIV, is potentially many times more infective and therefore the greater site risk. The best defense against Hepatitis B infection is vaccination. Should a known exposure occur it is usual medical practice to give a Hepatitis B Immuno Globulin (HBIG) injection within 24 hours.

(b) HIV

HIV affects the immune system, weakening it to the point where the individual becomes more susceptible to other infections - for example, pneumonia, tuberculosis or cancers. In the early and mid-1980s, it was generally believed that the HIV virus would not survive long outside the body; recent studies have changed this thinking. In some cases, dried plasma held at room temperature retained infective virus for more than three days. No cases of insect transmission are presently known. A vaccination against HIV infection is not available to date.

(c) Malaria

Except for one strain of malaria, human malarias are generally not life threatening, but produce a repetitive series of shaking chills and rapidly rising temperatures followed by profuse sweating over several days. Relapses may occur at irregular intervals and the infection may persist for upwards of 50 years. Transmission is by the bite of an infective mosquito. Personal protection on

the work-site will be achieved by regular use of insect repellent containing diethyltoluamide (DEET), in addition to wearing the protective clothing provided.

(d) Meningococcal Meningitis

A bacterial infection characterized by fever, delirium and possible coma, intense headache, nausea and often a stiff neck. Case fatality rates have been reduced from 50% to less than 10%, by modem therapy nevertheless prompt treatment is required. Transmission of the disease is by direct contact, including respiratory droplets from the nose and throat from infected persons. Wearing a partial face respiratory mask as for HIV/HBV exposure provides necessary protection.

(e) Lyme Disease

A tick-bone disease characterized by fever, fatigue and a distinctive skin lesion. Encephalitis or meningitis is possible. Quite a while after the skin rash occurs, swelling and pain in the large joints, primarily the knees, will occur in untreated patients. Chronic arthritis can result. Transmission occurs mainly in summer fromtick bite after the tick has fed for several hours. The same insect repellent used forthe malarial mosquito, when applied to shirtsleeves and pants legs has proven to be effective.

(f) Queensland Tick Typhus

A tick home disease which causes mild to severe fever. Transmission is similar to Lyme disease and similar protective measures apply.

(g) Ross River Fever

A viral disease carried by kangaroos, other marsupials and wild rodents. Transmission to man is by mosquito bite. This disease is characterized by fever, (although fever may be absent), arthritis in the wrist, knee, ankles and small jointsof the extremities. A rash on the trunk and limbs usually accompanies the arthritis. The disease is self-limiting. Protection from mosquito bite (as for Malaria) is the accepted prevention method.

(h) Syphilis

This disease can occur concurrently with HIV infection and is spread in a similar way, namely through contact with infectious body fluids and secretions. Syphilis is characterized by skin lesions and a rash involving the palms and soles. As the disease develops it attacks the central nervous system and cardiovascular system.
Transmission of infection will be interrupted by procedures adopted for HIV protection.

(i) Tetanus

An acute disease characterized by painful muscular contractions primarily around the jaw and neck followed by contractions of the trunk muscles. Around the world, case fatality rates range between 30% and 90%. The disease is introduced into the body through a puncture wound contaminated with soil, street dust etc. Often the wound is unnoticed or too trivial for medical consultation. Active immunity can be obtained from an immunization which lasts nominally 8 to 10 years. Tetanus control is best achieved by active immunization since it is rarely possible to recover and identify the organism at an infection site.

4. General Work Practice Controls

All accident sites are potentially hazardous areas and entry to the site should be in accordance with the provisions of the Procedures Manual on the subject. Controls may be revised once potential hazards have been eliminated.

5. Personnel on Site

To limit exposure to potentially hazardous situations, only personnel who have a need to be on-site as part of the investigation team should be allowed access to the occurrence site, and then too, only for the minimum possible period. The aircraft manufacturer and operator may be requested to advice on possible hazards associated with the aircraft or its cargo. As part of the on-site safety process, pre-entry briefings will be conducted for all personnel entering the occurrence site.

6. General Precautions

Personal safety at the occurrence site is a combination of common sense and proper procedures. One must exercise caution and use all appropriate protective devices when working at the occurrence site and should not work alone at an occurrence site unless the site location and circumstances adequately provide for his or her personal safety.

7. Work in Confined Spaces

A confined space at an occurrence site is defined as a tank, fuselage segment, crater, trench or other enclosure, not designed for human occupancy except for the purpose of performing work, and which has one or more of the following conditions:

(a) A limited number of openings for entry or exit
(b) Poor natural ventilation
(c) An oxygen deficient atmosphere
(d) Airborne hazardous substances.

Before anyone enters a confined space a qualified person must confirm that the space is safe. Appropriate rescue equipment must be available. An additional person must be appointed to closely monitor the confined work-site and be ready to rescue the person inside immediately, should the need arise.

8. Isolated Sites

One should not normally work alone at an isolated occurrence site. An isolated site is defined as one which would involve more than two hours travel time to an appropriate medical facility, or which would otherwise present difficulties if immediate removal of an investigator were necessary.

9. Physical Condition

Everyone is responsible for ensuring that they are fit enough to endure the sometimes arduous conditions found at an occurrence site and should be aware of the effects of fatigue long before exhaustion sets in. In addition to being aware of the current condition of the site, one needs to be aware of the condition of the participants in the investigation. The symptoms of heat exhaustion are a pale face, cold sweat and shallow breathing. Heat exhaustion is considered to be shock from exposure to heat. Place the individual on their back in a shady spot, elevate their feet and loosen tight clothing. Apply cool, wet clothes. Symptoms of heatstroke are red, hot, dry skin; high body temperature; rapid pulse; slow and noisy breathing; confusion or unconsciousness. This condition is serious and must be treated immediately. Seek shade, place the individual on their back and

undress down to the underwear. It is especially important to cool the head. Have the individual drink fluidsand rest.

10. Overview of Hazardous Materials Adhere to the following guidelines:
Assume that hazardous materials are present at the occurrence site. Suspect all freight, mail, and passenger baggage until positively identified. Always assume that pressure vessels are explosive until rendered inert. Before examining any wreckage, perform a personal site-safety check. If a danger has not or cannot be neutralized, use alternative methods for gathering evidence such as photography, photogrammetric, or witnesses. Aircraft always contain hazardous materials such as fuel, oil and hydraulic fluid. When possible, clean any serious contamination of fuel and lubricant from the wreckage using adetergent wash and rinse, and when necessary, an approved absorbent. Be aware of the ever-present danger of fire and explosion when cleaning contaminated wreckage. Burning or smoldering aircraft interiors and modern composite materials emit noxious and highly toxic gases and possibly carcinogenic particles.

11. Radioactive Material
As soon as possible after the notification of an occurrence, one should determine if radioactive materials were on board the aircraft, either as cargo, equipment or as part of the aircraft structure. This information must be obtained from the aircraft operator. Although a member of the crew, if unhurt, and not suffering from shock, may also be able to provide this information, it is better to obtain such information from a person or agency that has not been traumatized. If it is established that radioactive material is in the wreckage, inform all personnel involved in the investigation and take adequate precautionary measures to avoid undue exposure of the investigation group to the contaminated area until expert advice is obtained.

12. Chemical Hazards on Site .General

Chemical injury can occur through simple atmospheric contamination and exposure, or by physical contact of toxic and corrosive substances. Modern synthetic agricultural chemicals used in aerial spraying applications are often toxic and carcinogenic. When itis suspected that there is possible chemical contamination, restrict admittance to the occurrence site until a qualified chemical hazard authority has released the site. The local Fire Department or Police will be able to contact such an authority. If necessary, quarantine the area until cleared by appropriate experts. Use absorbent materials such as sand or commercial neutralizing agents to confine a spill.

Caution:
Consumption of alcohol before or after exposure to chemicals may aggravate their sideeffects.

13. Agricultural Chemicals
Use caution when approaching the wreckage and occurrence site of any aircraft used in the aerial application of chemical compounds. In such a situation, exposure to toxic substances is a very real hazard. Among the multitude of fertilizers, pesticides, insecticides, herbicides, rodenticides, fungicides and nematocides currently available for aerial application, many are toxic to humans and readily absorbed through the skin. Fertilizers and crop nutrients may cause skin, eye and lung irritation, but generally do not cause serious or permanent damage.
Do not approach the wreckage of an agricultural aircraft until the chemicals on board have

been positively identified by an authority on chemical hazards, and appropriate Precaution has been taken.

The following provides general guidelines on the personal protective equipment to be usedby accident investigators at the accident site. The protective equipment may also be required when performing off-site examinations and tests on wreckage parts.

(a) Disposable latex gloves. Latex gloves should be durable even though they are to be worn under work gloves. All latex gloves should be properly disposed of prior to leaving the accident site.

(b) Work gloves. Work gloves should be as durable as practical and provide the hand, wrist and forearm with puncture and abrasion protection. Leather, nitrile and Kevlar gloves are commonly used. All three types should be disinfected or properly disposed of prior to leaving the accident site.

(c) Face masks. Face masks should cover the nose and mouth. Masks come in disposable and reusable configurations and should be disinfected or properly disposed of prior to leaving the accident site.

(d) Protective goggles. Protective goggles should enclose the eyes by sealing around the top, bottom and sides. Common safety glasses are not acceptable. Goggles should be fitted with one-way check valves or vents to prevent fogging and should be disinfected or properly disposed of prior to leaving the accident site.

(e) Disposable protective suits. Protective suits should be durable and liquid-resistant and should fit properly. If possible, they should have elastic-type hoods and elastic pant cuffs. Duct tape can be used to alter the suits and to patch tears. Protective suits should be properly disposed of prior to leaving the accident site.

(f) Disposable shoe covers and protective boots. Disposable shoe covers made of polyvinyl chloride (PVC) or butyl rubber is recommended. Leather, rubber or Gore-tex work boots are also acceptable. Disposable shoe covers and protective boots should be disinfected or properly disposed of prior to leaving the accident site.

(g) Disinfection chemicals. Two chemical types are commonly used to disinfect personal protective equipment. Rubbing alcohol of 70 per cent strength is effective and is available in towelettes, as well as in large hand towels. The most effective disinfectant solution is a mixture of common household bleach and water, with one part bleach to ten parts of water. Never mix alcohol and bleach.

(h) Biological hazard disposal bags. Biological hazard disposal bags must be used for disposal of contaminated personal protective equipment. The bags are red or orange and are labeled “Biological hazard”. For transport, the disposed material should be double bagged.

All the officers should follow the above requirements strictlywhenever they are carrying out investigations.

APPENDIX E4

Guidelines for Major Group Accident Investigation

In a major accident investigation, a substantial team of investigators is usually necessary to cover all aspects of the occurrence. The Ministry may take assistance of experts or expert groups as required, covering various functional areas of the investigation. Normally, officers of Aviation Safety and Accident Investigation Section, MoCTCA will head the various working groups. The membership of such groups may include, as appropriate, other investigators even from the investigation authorities of the States involved in the occurrence as well as experts from the operator and the manufacturers of the aircraft, power plant and accessories, who can contribute their technical knowledge and experience to the investigation. The number of groups, and the number of personnel assigned to each group, will depend on the type and complexity of the accident and be decided by the IIC.

In some investigations, the apparent causes/contributing factors may become evident early in the investigation. In such situations, the subsequent prime investigative effort may then be channeled to good effect into a relatively narrow but specialized area. Nevertheless, it will still be necessary to investigate all factors that might have contributed to the accident and to eliminate those factors that did not. In situations wherein the causes are not readily apparent, the investigation must progress steadily through all aspects of the occurrence, and this type of situation may require substantive effort of many groups of investigators working in a balanced and coordinated manner.

1. SMALLER INVESTIGATIONS OF INCIDENTS AND ACCIDENTS

1.1 In the case of incidents and non-major accidents, the investigative effort required in terms of manpower and resources may be proportionately smaller than that required for a major accident. In such situations, the smaller investigation will be handled by Committee of two investigators. One trained investigator will be the IIC assisted by one or more subject-matter experts.

1.2 Most investigations into serious incidents will be conducted by a small investigation Committee from SAIS.

1.3 Even in small investigations, the degree of individual effort and diligence in accurately recording the facts and developing the analysis and conclusions must be of the same high standards as for major accident investigations.

2. INVESTIGATION RESPONSIBILITIES

2.1. GENERAL

2.1.1 SAIS has overall responsibility for the organization of investigation and the investigation report, including ensuring that the investigation receives adequate resources. Once an investigation is instituted, the day to day conduct of the investigation will be the responsibility of the IIC.

2.1.2 The IIC will keep MoCTCA apprised of any major shift in the size and scope of the investigation and of any other situations that may result in a significant change to the resources required for the investigation.

2.1.3 The IIC/ Commission/ Committee of Inquiry will be responsible for the day-to- day

management and conduct of the investigation. During the pre-field phase, the h e must determine the human, technical and financial resources needed for the investigation and must establish the need of additional experts. During the field phase, he is responsible for the conduct and control of the investigation, including defining the scope of factual information to be gathered. During the later phases of the investigation, when the significance of the established facts is under consideration, the he must consolidate the group reports, analyze the information, and draft the Final Report.

2.1.4 He will liaise and coordinate investigation activities with other organizations, agencies and parties; enter into necessary informal agreements to facilitate the coordination; recognize and authorize observer/participant status; and, in the absence of established standards, procedures or instructions, take appropriate action, as necessary.

2.1.5 He will have authority over all the members of the investigation team during the field phase of the investigation while they are away from their usual place of work. SAIS will take care of travel expenses and overtime, approving leave, authorizing the issuance of equipment, to give out contracts and to engage in other necessary financial commitments.

2.2 SUPPORT COORDINATORS

2.2.1 Officer of SAIS will be delegated to act as support coordinator and will support the IIC/ Commission/ Committee in all endeavors, act in direct support of the investigation process, and liaise with different groups, organizations and States. He will also assist the t e a m in coordinating internal and external support for investigators in the field and in keeping the States and various agencies involved in the occurrence informed as to the progress of the investigation.

2.2.2 If needed an Technical officer of SAIS will also be made Site Safety Coordinator to ensure that all the activities at the accident site are properly coordinated with specific emphasis on site security and site safety. This role should include, but not necessarily be limited to, the following:

1. Reviewing the cargo manifest and working with local safety officials as necessary;
2. conducting an initial assessment of the circumstances of the accident site(s), the geography and condition of the site(s), and the hazards that exist, including biohazards;
3. defining the boundary(ies) of the site(s) required for the investigation, and the hazardous zones within the site(s);
4. on behalf of the Ministry assuming responsibility for the custody of the site(s);
5. taking action to mitigate the risks within the site(s), to the degree possible;
6. determining the safety equipment and safety procedures for investigators operating on the site; and
7. establishing and maintaining the safety of operations and of personnel at the accident site(s).

2.3 INVESTIGATION GROUPS

2.3.1 General

In case of major investigation concept of group investigation will be followed. Depending on the circumstances of the occurrence and the number of

qualified personnel available to carry out the investigation, some groups may be combined and/or some groups may be eliminated altogether. The IIC/Chairman/Committee of Inquiry will ultimately determine the team composition. A group chairperson will be responsible for all the activities of his group for the whole period of the investigation. Normally, the activities of the various groups cease when their group reports are completed and submitted to the Court.

2.3.2 Operations Group

The Operations Group is responsible for collecting the facts concerning the history of the flight and the flight crew activities before, during and after the accident/incident. This includes the man-machine relationship and the actions or inactions present in the events surrounding the accident. It also includes flight planning, dispatch, mass and balance, weather and weather briefing, radio communications, air traffic services, navigation facilities, en-route stops, refueling, flight experience, flight checks and general information concerning the flight crew. It also includes all aspects of training received and an assessment of the adequacy of this training; the level of supervision, including orders, regulations and manuals; and, the performance of supervisors, instructors and company management. The medical history of the flight crew, including any recent illnesses, psychological factors, rest periods, and activities, particularly during the twenty-four hours prior to the accident, should be determined. This latter aspect of the investigation should be coordinated with the Medical/Human Factors Group. The Operations Group should also determine the flight path prior to the accident or incident. In this effort, it is essential to coordinate with the Witness Group, the Flight Recorder Group, and the Site Survey Group. There are occasions when it is desirable to form additional groups to take over some of the functions of the Operations Group.

2.3.4 Medical/Human Factors Group

Support regarding the investigation of medical and human factors issues normally would be achieved by assigning the subject-matter experts to the investigation group(s) requiring such assistance. A separate Medical/Human Factors Group would only be formed when there is a requirement to conduct an in-depth examination of the aero medical, crash injury, and/or human performance issues. For human factors issues, this group would be responsible for gathering and analyzing evidence on the general physical, physiological and psychological conditions, the environmental factors, and the organizational and management factors that might have adversely affected the crew or other individuals in the performance of their duties. The investigation of human factors should be conducted whenever human performance may have contributed to the occurrence, which could include the performance of, among others, cabin crew, air traffic controllers, maintenance crew, engineers, regulatory officials, decision-makers and management. For medical issues, this group would be responsible for gathering and analyzing evidence associated with the pathological, aviation-medical and crash-injury aspects of the investigation, including the identification of the crew, their location at the time of the accident, and by reviewing their injuries, their position and their activity in the cockpit at the time of the impact. This group will cover mattersinvolving autopsies of

crew and passengers, as appropriate, not only to identify the victims and to assist in legally determining the cause of death, but also to obtain all possible medical evidence which may be of assistance in the investigation. The group will also investigate the design factors related to human engineering that may have contributed to the causes of the accident, the survival aspects, and the crashworthiness of the aircraft contributing to the injury or death of the occupants. The functions of the Medical/Human Factors group must be closely coordinated with the Operations Group, Air Traffic Services/Airports Group, Witness Group, Recorders Group, Maintenance and Records Group, Structures Group and Crashworthiness Group.

2.3.5 Witness Group

The Witness Group is responsible for contacting and interviewing all survivors of the flight, and all persons who may have seen or heard some portion of the flight, or who may have knowledge concerning the flight or of the weather conditions at the time of the accident. The group's activity can range from questioning relatively few witnesses to a door- to-door activity covering great distances along the flight path in which hundreds of possible witnesses are interviewed. Information concerning observed positions, heights, altitudes, sounds, aircraft behavior and in-flight disintegration can be gathered in this manner. The location of witnesses at the time of the accident should be plotted on a suitable map of the area. Whilst interviewing witnesses, close coordination must be maintained with the Operations Group, the Flight Recorder Group and the Site Survey Group in determining the flight path. In some instances, interpretation and translation facilities have to be provided for the interview of witnesses.

2.3.6 Flight Recorders Group

The Flight Recorders Group is responsible for examining and analyzing the on-board and ground-based flight recorders, including the flight data recorders, cockpit voice recorder(s), and cockpit airborne image recorders. The Group will arrange through the Investigator-in-charge for their read-out. The calibration of the parameters in the flight data recorder must be taken into consideration in the interpretation of such readouts; this work will often require coordination with manufacturers, vendors, or the operator(s) to ensure proper conversion of the parameters. The results of the read-outs must be closely coordinated with the Operations Group and such other groups as the circumstances indicate. Due to the importance of flight recordings, extreme care must be taken in handling the recorders to prevent damage. In the event adequate facilities to read out the flight recorders are not available in India, facilities made available by other States should be used, giving consideration to the following:

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

Read-outs of flight recorder recordings should be carried out in the presence of IIC/Commission/ Committee of Inquiry. The Flight Recorders Group may also be responsible for recovery and analysis of information contained on other

aircraft computers (for example, flight management systems, traffic collision avoidance system, and terrain awareness and warning system), on memory units containing satellite navigation information, and on other portable electronic recording devices that can store some data related to the accident. The group may also be responsible for collecting and synchronizing flight data, audio and video information stored on ground-based devices.

2.3.7 Meteorology Group

When the weather is an important factor in an accident, a separate Meteorology Group, composed of meteorology and operations specialists, can best serve the investigation. The Meteorology Group should be responsible for the collection and compilation of meteorological data pertinent to the accident, including both surface and upper air reports of actual conditions, pilot reports, recorded meteorological data, as well as forecasts of anticipated conditions prepared and issued by the agencies involved. This group would also be responsible for investigating the systems, sensors, equipment and processes used to generate and provide weather information. Of necessity, the Meteorology Group must maintain close coordination with other groups, particularly the Operations Group, the Air Traffic Services/Airports Group and the Witness Group.

2.3.8 Air Traffic Services and Airport Group

When air traffic services or navigation aids are involved in the occurrence, the Air Traffic Services and Airport Group, which should include air traffic services specialists, should be established. This group should be responsible for the review of the records of the air traffic services units concerned, including radar screen recordings, the radio communication and telephone line voice recordings; and, for the verification that written transcripts of voice communications are consistent with the recordings. This group should provide, when appropriate, a reconstruction of the history of the flight based on air traffic services information. In addition, the Group should determine the operating status of pertinent navigation aids, communications equipment, radar, transponder equipment, computers, and other equipment; and, should provide technical data on all such equipment and its operation, whenever it is deemed necessary. When applicable, this group should investigate the operational status of the airport, pertinent navigational aids, communications equipment, radar, transponder equipment, and computers, and provide technical data on all such equipment and its operation.

2.3.9 Survivability Group

When required, the Survivability Group will be established to investigate the evacuation, the crash response, the firefighting, the survival and the rescue issues. The activities of this group include an examination of the respective equipment and of the manner in which it was used. Close coordination with the Human Factors Group, Operations Group and Cabin Safety Group will be required. This group could also logically be a sub-group of the Medical/Human Factors Group.

2.3.10 Cabin Safety Group

The Cabin Safety Group is responsible for thoroughly exploring all the

aspects of the accident related to the actions of the passengers and cabin crew members. This will normally include the following aspects: passenger/crew member survivability factors; company policies and procedures as they relate to passenger/crew member safety; industry policies, procedures and regulations; and flight attendant training with respect to operational safety issues.

2.3.11 Maintenance & Records Group

Maintenance and Records Group is responsible for reviewing the maintenance records to ascertain the maintenance history of the aircraft regarding adequacy of inspection, malfunctions that might be related to the occurrence, flight time on the aircraft, engines and components, and the flight time since overhaul. These activities are normally performed at the maintenance base of the operator. The function of this group involves close coordination with the other technical investigation groups, the State of Registry and the operator. This group is also responsible for reviewing recovered technical flight documents. Close coordination with the Operations Group will be required.

2.3.12 Systems Group

The Systems Group is responsible for the detailed examination of all systems and components, among others hydraulics, pneumatics, electrical and electronics, radio communication and navigation equipment, air conditioning and pressurization, ice and rain protection, cabin fire extinguishers, and oxygen. The examinations will include determination of the condition and operational capabilities of components. It is important that all system components be accounted for, within reason. The examination includes determination of the positions of associated controls and switches, as well as the identification and downloading of data contained in built-in test equipment. This group must coordinate its activities with the Flight Recorders, Operations, Site Survey, Maintenance and Records, Structures and Power plants groups.

2.3.13 Structures Group

The Structures Group is responsible for collecting and analyzing the facts and evidence related to the airframe and flight controls. If the wreckage is scattered, the Group's first concern is to locate and identify as many sections, components and parts as possible and to plot their positions on a wreckage distribution chart. A reconstruction of the aircraft structure may be necessary, and this task could vary from laying out various pieces of wreckage on a flat area to the more complicated re-assembly of all available pieces in position on a framework. This procedure is most often used for in-flight break-up, in-flight fire and explosion type accidents. The main purpose of such a reconstruction is to identify the point of initial failure and to establish the progression of the break-up pattern. Close cooperation with the Site Survey Group is usually required.

2.3.14 Power plants Group

The Power plants Group is responsible for collecting and analyzing the evidence related to the engine(s), including fuel and oil systems, propeller(s) and power plant controls. The initial work of this group may be carried out in conjunction with the Structures Group and the Site Survey Group in the locating and plotting of wreckage. All power plant fires should be investigated. This group is also responsible for determining the type of fuel used, the possibility of fuel

contamination, and the effectiveness of the power plant fire extinguisher system. The functions of this group must be coordinated with the Site Survey, Structures, Systems, Flight Recorders and Operations Groups.

2.3.15 Site Survey Group

The Site Survey Group is responsible for producing, in pictorial and graphic format, a description of the accident site, showing the location and distribution of the wreckage, human remains and other associated items, such as impact marks. This group must establish a probable flight path, an impact angle and impact speed. The activities of this group are linked to the Aircraft Performance Group, Structures Group and Recorders Group.

2.3.16 Crashworthiness Group

Crashworthiness Group is responsible for determining the survivability issues for all aircraft occupants. The activities of this group will overlap with those of the Structures Group, Site Survey Group, Survivability Group, Flight Recorders Group and Witness Group. This group is often a sub-group of the Structures Group.

Appendix E5

Guidelines for Smaller Investigations of Incidents and Accidents

1 GENERAL

1.1 The investigation of incidents and non-major accidents may be conducted by one investigator, sometimes assisted by one or a few other investigators. In such situations, the Investigator-in-charge will have the responsibility for the organization, conduct and reporting of the investigation, and will also be active in the investigation work appropriate to his expertise and background. If, for example, the Investigator-in-charge has a pilot background, then another team member could have different technical expertise and background. Depending on the circumstances of the occurrence, other subject-matter experts (such as air traffic services, aircraft performance, recorders, and human factors) could be assigned to the investigation team.

1.2 Smaller investigations will vary from occurrence to occurrence. For example, the investigation could be a field investigation for which some or all of the investigators would deploy to the occurrence site, the location of the aircraft, the airline's offices, and/or the air traffic facility; or, it could be an office investigation where all or most of the investigation is conducted from the investigation authority's offices.

1.3 Where a non-major accident occurs on an airfield, there will likely be significant pressure to remove the wreckage so that normal operations can resume. In the same vein, for incidents that occur in flight or on the airport maneuvering area, there might be significant pressure to move the aircraft and to return it to normal operations. In both these situations, the primary concern for the investigation should be the potential for loss of evidence. In this regard, the investigator may have to put a priority on properly documenting the wreckage site and/or the aircraft prior to its removal.

1.4 For incidents wherein there has been little or no damage, there will likely be significant pressure to return the aircraft to normal operations. Removing a recorder may delay the dispatch of an otherwise serviceable aircraft. In this regard, the investigator may have to put a priority on: first, ensuring that flight recordings are protected properly; second, determining if the recordings are required for the investigations; third, downloading the recordings; and fourth, releasing the aircraft for operations.

1.5 For incidents and non-major accidents, it may be difficult to get on-site support from all entities having an interest in the investigation, such as from foreign States, airlines and aircraft and component manufacturers. As a result, extra effort will have to be taken to ensure good communications between the investigators and these other entities throughout the investigation.

2 RESPONDING TO A NOTIFICATION

2.1 Although immediate notification of accidents and incidents to the accident investigation authority is essential, the uncertainty regarding the circumstances of incidents and non-major accidents, and a perception that such occurrences may be low-risk events, frequently lead to delayed and incomplete notifications. Such time delays usually lead to the loss of perishable evidence.

2.2 The following are important considerations associated with incidents and non-major accidents:

(a) Immediately contact the reporting source to ensure that all the required information has been

(b) provided, to determine who and what organizations may have been involved in the occurrence, to

(c) determine who else has been informed of the occurrence, and to determine what actionshave already been taken in response to the occurrence.

2.3 Notify national and local authorities, air traffic services, and other organizations who may be involved in or who have an interest in the occurrence regarding:

(a) the type of investigation that will be conducted;

(b) the requirement to secure the occurrence site, aircraft, wreckage, and other involved equipment to ensure their preservation, and the requirement to preserve and to photograph any evidence of a transitory nature;

(c) the requirement to secure all documentation and recordings associated with the occurrence; and

(d) the urgency to obtain the names and contact information of all those who may havebeen involved in the occurrence flight and of all eyewitnesses.

3 SECURING DOCUMENTATION

3.1 From the early stage in the investigation, it is important to secure the operational and maintenance documents of the occurrence aircraft, as well as all other documents relevant to the occurrence. What documents will be required for the investigation also depends on the nature of the occurrence. The Investigator-in-charge should decide, as soon as possible, what documents need to be obtained. He should contact the relevant organizations to collect the documents.

3.2 The operator, maintenance facility, air traffic services and airport service providers, the civil aviation authority, and meteorological services are examples of organizations that should be contacted as soon as possible to collect and secure documents necessary for the investigation. Typically the Investigator-in-charge or a person delegated by him should contact the applicable organizations preferably by telephone, by e-mail or any other suitable means, to request that required documents and recordings be secured. For more guidance as to the typical documentation to collect, refer to the applicable sections of the Investigations Management System Event Checklist and the Major Accident Investigation Guide. Both documents are appendices to this manual.

3.3 Flight recorders are an important source of factual information for investigations; consequently, recorder data should be recovered as a matter of course when the decision is made to investigate. An aircraft involved in an incident (and its flight recorders) may have moved a considerable distance from where the occurrence took place. Some operators have the equipment to copy the flight data recorder (FDR) and cockpit voice recorder (CVR) recordings without removing the unit from the aircraft.

3.4 Before demanding that a FDR or CVR be removed from an aircraft, the following should be carefully considered:

(a) Is the recorded data vital to or useful to the investigation?
(b) Can the data be obtained from other sources?
(c) Can a suitable copy of the data be made without the recorder being removed from the aircraft?
(d) If a copy of the recordings cannot be made at the location of the aircraft, what is the length of time that the aircraft can operate before the desired data is overwritten?

Note. — Removing CVRs for incidents: ICAO Annex 6 states that "Flight recorders shall not be switched off during flight time". In addition, the aircraft minimum equipment list normally does not allow an aircraft to be flown with a "purposely" removed or disabled flight recorder. The investigation authority might be taking an unacceptable risk if the CVR is pulled and the operator continues to fly without a replacement installed since, if the aircraft subsequently sustains another occurrence, there would be no CVR recording.

4 FIELD PHASE OF THE INVESTIGATION

4.1 When arriving at the site of the occurrence, investigators should meet leaders of firefighting and rescue teams, police, and other officials to determine the accident site situation, who has control, what has been done, and what has not been done. Before taking control of the site, the investigator should assess the circumstances of the occurrence, the geography and condition and boundaries of the site, the hazards that exist, and the requirements for ensuring the security and safety of the site. When ready to take control of the site, the investigator should establish site boundaries, security, and access control procedures. For non-major accidents, it would be prudent to use local police authorities for securing the accident site. This would relieve the investigators from this task and allow them to concentrate on other investigation matters.

4.2 The detailed on-site examination requires an orderly approach both to the examination and the recording of the information. The following is a partial list of actions required at the occurrence site:

(a) locate the flight recorders;
(b) initiate photo and video recording, in particular of perishable and important parts;
(c) collect perishable evidence and flight recorders;
(d) mark and photograph components in their original places;
(e) construct a wreckage distribution plot;
(f) locate major components and initiate searches for missing components;
(g) assess general failure patterns (wings, fuselage and empennage);

(h) Document the initial ground impact and the subsequent path of the aircraft.

4.3 The Investigator-in-charge should also consider the following activities:
(a) Initiating an event flow chart to track the progress of the investigation. To assist in this regard, investigators should use, and adapt as necessary, the *Investigations Management System Event Flow Chart*
(b) interviewing aircraft crew members;
(c) interviewing eyewitnesses, including local authorities and first responders;
(d) conducting preliminary examinations of systems, structures, engine(s), and propeller(s);
(e) sending flight recorders to a readout facility, and conducting an immediate initial assessment of the recordings; and
(f) Sending aircraft parts and components for laboratory testing and analysis.

4.4 Prior to leaving the occurrence site, the Investigator-in-charge should ensure that:
(a) All required wreckage of interest has been removed from the site and is secured elsewhere;
(b) All wreckage not required for the investigation has been returned to the rightful owners; and
(c) Responsibility for the accident site has been passed to the appropriate local authority or the owner of the aircraft.

4.5 To avoid leaving the accident/incident site with information undetected or unrecorded, the Investigator-in charge should consider referring to the applicable sections of the Investigations Management System Event Checklist and the Major Accident Investigation Guide — both documents are appendices to this manual.

5 POST-FIELD PHASE OF THE INVESTIGATION

5.1 Subsequent to the field phase, significant investigation work remains, and the Investigator-in-charge must work diligently to maintain and manage the progress of the investigation. In general, the post-field phase involves the continued collection and validation of evidence; the examination of all pertinent personnel, company, aircraft, facility, government and other records; the examination of selected wreckage in the laboratory; the testing of selected components and systems; the reading and analysis of recordings; the conduct of further interviews; the determination of the sequence of events; the analysis of all investigation information; and completion of technical and group reports, if any. The post-field phase can take many months, depending on the size and complexity of the investigation.

5.2 To ensure that all pertinent information is considered, the Investigator-in-charge should refer to the applicable sections of the Investigations Management System Event Checklist and the Major Accident Investigation Guide, and should maintain an Investigations Management System Event Flow Chart. All these documents are appendices to this manual.

6 INVESTIGATION REPORTING

Reporting — General

6.1 Timely and effective release of investigation information, including preliminary and other

reports, interim statements, final reports and safety recommendations, is important to ensure that those involved and/or implicated in the occurrence are kept informed of the progress of the investigation and of the safety deficiencies uncovered.

Safety recommendations

6.2 Annex 13 requires that at any stage of the investigation of an accident, the accident investigation authority of the State conducting the investigation shall recommend to the appropriate authorities, including those in other States, any preventive action to be taken promptly to enhance aviation safety. Consequently, safety recommendations can be made any time during the investigation or be made in the safety recommendations part of the Final Report.

6.3 Safety recommendations should describe the safety problems and provide justification for the recommended safety actions. A safety recommendation should identify what actions to take, but leave scope for the authorities responsible for the matters in question to determine how to accomplish the objective of the recommendation.

6.4 The safety recommendations made during the investigation as well as the preventive actions taken in response to these recommendations should be presented in the safety recommendations pa rt of the Final Report. Publishing the preventive actions taken has significant value for accident prevention for other authorities involved in similar operations.

Final Reports

6.5 The Final Report of an investigation, including its recommendations, is the catalyst for preventing further occurrences. Therefore, the Final Report must establish in detail what happened, how it happened and why it happened. For reporting on small investigations, many States have created abbreviated report formats that only contain the history of flight, information on the deficiencies discovered by the investigation, analysis of the factors contributing to the occurrence, and findings related to the deficiencies. The findings and the causes/contributing factors of Final Reports should usually lead to safety recommendations so that appropriate preventive actions can be implemented.

Appendix F

Format and Content of the Final Report

For format and content of Final report, refer Appendix 1 to Chapter 1, Doc 9756, Part IV- Manual of Aircraft Accident and Incident Investigations, reporting.

Appendix G

Roster Guidelines

Aircraft accident investigation is a specialized task which should be undertaken by qualified investigators only. The Ministry of Culture, Tourism and Civil Aviation has recently modified its organization structure and established Aviation Safety and Accident Investigation Section under the Civil Aviation Division.

The outcome of an accident investigation is largely dependent upon the aviation knowledge, skills and experience of the assigned aircraft accident investigators. Therefore, the Ministry of Culture, Tourism and Civil Aviation shall maintain a roster with the list of experts trained in Accident and Incident Investigation and having experience of fifteen years or more in their career in aviation. Operations expert, medical/human factors expert, air traffic services and airport expert, meteorology expert, power plant, structures and systems experts shall be included in the roster. Persons from the roster shall be selected as investigators in accordance to their qualification, expertise and training. In events where these requirements can't be met, CI may reassess the requirements keeping in mind the scope of the investigation.

1. QUALIFICATIONS

The investigators enlisted in the roster should have:

(a) an understanding of the depth of investigation that is necessary in order for the investigationto conform with the legislation, regulations and other requirements.

(b) a knowledge of aircraft accident investigation techniques;

(c) an understanding of aircraft operations and the relevant technical areas of aviation;

(d) the ability to obtain and manage the relevant technical assistance and resources required to assist the investigation

(e) the ability to collect, document and preserve evidence

(f) the ability to identify and analyze pertinent evidence in order to determine the causes and, ifappropriate, make safety recommendations; and

(g) the ability to write a final report that meets the requirements of the accidentinvestigation.

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

2. ENLISTED INVESTIGATORS – QUALIFICATIONS & EXPERIENCE

The experience requirements for senior level personnel to be enlisted in the roster shall be to fulfill the obligation of ICAO Annex 13. They must have personal experience of fifteen years

or more in their respective professional fields. Qualification in the legal and statistical Analysis field will be desirable. When assigned to an accident investigation, such personnel will be relieved of their regular duties as and when required for the investigation.

As of now and in future, the appropriately qualified personnel in the roster available with the MoCTCA will require training in the accident investigation techniques in order to participate in or to conduct an aircraft accident investigation. These personnel will have considerable practical experience in aviation as a foundation on which to build their investigation skills such as a pilot, aeronautical engineer or aircraft maintenance engineer. Personnel qualified in flight operations, airworthiness, air traffic management, or aviation related management will also be provided accident investigator training, since accident investigations will often involve specialized areas. It will be ensured at all times that those selected for training as investigators understand the aviation infrastructure and are able to relate to the many different areas of aviation.

An accident involving a general aviation or small commuter aircraft, depending on the conditions may be investigated by a Committee of Investigation comprising of two persons or at times small reports prepared by a single investigator.

Appendix G1

Accident Investigation Training Policy and Program

TRAINING GUIDELINES

1. GENERAL

Aircraft accident investigators require different levels of experience, knowledge and training according to the particular role to which they are assigned. Investigators within MoCTCA and as well as the Industry will be imparted training commensurate with their responsibilities as an accident investigator, group leader, investigator-in-charge, accredited representative or expert.

The training guidelines and course 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.

Training persons for aircraft accident investigation involves several phases. These phases include initial training, on-the-job training, basic accident investigation course and an advanced accident investigation course supplemented by specialized courses. While on-the-job training is an ongoing process that continues for many years, there will be sufficient time intervals between each formal course to allow the investigator to consolidate the information and the techniques learned.

Formal courses are designed to complement on-the-job training by exposing the candidates to a cadre of expert investigators. The experts conducting the training will be from those with experiences in a particular area of accident investigation i.e. aviation medicine physicians, psychologists, aeronautical engineers and representatives of manufacturers.

2. PHASE 1 — INITIAL TRAINING

The to-be-investigators will be imparted initial training first. The aim of the initial training is to familiarize new investigators with the legislation and with the procedures and requirements of the MoCTCA. The following subjects are included in the initial training or indoctrination:

a) Administrative arrangements
   - Civil Aviation (Investigation of Accident) Rules, 2071
   - International agreements (including Annex 13-Aircraft Accident and Incident Investigation);
   - Memoranda of understanding with other organizations;
   - Liaison arrangements with local authorities;
   - Structure of the Civil Aviation Division of MoCTCA ;
   - Aircraft accident investigation procedures manual;
   - Definitions and accident classification;
   - Equipment and tools;
   - Transport arrangements;

- Ethics and conduct; and
- Expenditure control.

b) Initial response procedures
- Procedures for calling after occurrence;
- Notification of other authorities and organizations;
- Securing of records, recordings and samples;
- Photography
- Handling of Flight Recorders
- Accident site jurisdiction and security;
- Investigator safety at the accident site including psychological stress;
- Recovery of human remains;
- Requests for autopsies; and
- Family assistance.

c) Investigation procedures
- On site investigation;
- Preservation of evidences;
- 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.

d) Reports
- Preliminary report;
- Final report including aspect of reopening;
- Submission of reports and ADREP (when implemented in Nepal);
- Follow up on recommendations;

3. PHASE 2 — ON-THE-JOB TRAINING

Following the initial training, on-the-job training will be imparted to officers. During this second phase, they 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 on-the-job training will be carried out by associating with the on-going investigations with one of the experienced investigators and will not be limited to one investigation.

4. PHASE 3 — BASIC ACCIDENT INVESTIGATION COURSES

After completing the phase 1 and phase 2 of the initial training, the officer who is under training will attend a basic accident investigation course as soon as is practicable, preferably

within the first year of recruitment.

Basic aircraft accident investigation courses should cover the following topics:

a) the responsibilities of the States involved, as defined in Annex 13 — *Aircraft Accident and Incident Investigation*;
b) the accident site considerations, such as security, hazards, safety precautions, wreckage
c) diagramming, collection of evidence and control of access;
d) the investigators' personal equipment and protective clothing;
e) the examination and recording of the wreckage and witness marks;
f) the range of apparatus available for recording evidence;
g) witness interview techniques;
h) the full range of in-flight recorders and ground-based recorders;
i) the determination of the time and origin of any aircraft fires;
j) crashworthiness and survival aspects;
k) the properties and the modes of failure of materials used in the aircraft structure;
l) the design of aircraft systems and likely modes of failure;
m) aerodynamics and aircraft performance;
n) the examination of power plants;
o) human performance;
p) aviation medicine and pathology; and
q) the methodology of report writing.

5. PHASE 4 ADVANCED ACCIDENT INVESTIGATION COURSES AND ADDITIONAL TRAINING

Once an officer gains experience as a trained investigator, he will be sent for an advanced accident investigation course where he can update his knowledge of the basic techniques and increase his knowledge in special areas relevant to accident investigations. Additionally they will be called upon to investigate accidents involving a variety of aircraft types, thereby getting an opportunity to have a basic knowledge of most of the major air transport aircraft types that are operated in Nepal. In this regard the officers will be asked to undergo aircraft technical training courses at manufacturers and operators facilities. Preferably, such aircraft type courses which include specialized technology transport category aircraft (i.e. aircraft equipped with a glass cockpit, fly-by-wire systems and aircraft which contain composite materials in their structure).

Investigators with a technical or engineering background will attend the aircraft type courses for technical/ maintenance personnel. Similarly, investigators with a pilot background will attend the aircraft type courses for pilots, which could include introductory flight training in a flight simulator. Efforts will also be made to impart other additional training to officers by sending them to attend conferences and seminars conducted by aircraft accident investigation organizations. The officers will be deputed to major investigations as observers.

6. ADVANCED COURSE

Most topics covered in the basic course will also apply to advanced courses, but the instructors will vary their treatment of these topics to suit the purpose of the course and the experience level of the officers for that batch. In general, an advanced course is desirable for preparing an investigator for the responsibilities of group leader or investigator-in-charge of a major investigation. Such a course will aim to give the investigator an understanding of and some competence in the organization of a major accident investigation. In addition to the review of the organization of a major investigation, topics that should be discussed include:

— the provision of family assistance to those involved in an accident;

— relations with the media;

— an introduction to methods for cataloguing a large number of fragments of wreckage;

— management of a large accident site for security, safety and protection of the personnel;

— preparation of briefings and answers to formal questions for members of government;

— the methods of undertaking investigations that involve both civil and military aircraft; and

— liaison with the law enforcement authorities in accidents 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 enhanced ground proximity warning systems (EGPWS);

— reconstruction of evidence recorded in damaged solid state recorders;

— the use of virtual video presentations in large structural reconstructions of wreckage; and

— the use of computer simulations and program for flight simulators to recreate aspects of the aircraft's flight path which are of interest to the investigation.

7. RECURRENT TRAINING

a) All investigators will be provided a recurrent training once in three years period.

b) The curriculum for a recurrent training will aim to update the knowledge of participants with latest techniques, amendments in procedure manual, technologies, regulations, investigator safety in accident site etc.

c) The recurrent training will be conducted in house by senior officers to whom specific topics will be assigned by Civil Aviation Division.

d) Recurrent training of empanelled experts will be carried out every three years. In addition to the training of the investigators, case histories of important/complex investigations will be discussed and analyzed.

8. TRAINING RECORDS

Aviation Safety and Accident Investigation Section will maintain training dossiers of all

investigators and enlisted experts. All officers and experts should also keep updated records of their training. It will be the responsibility of officers/experts to provide copies of certificates of training by them to Aviation Safety and Accident Investigation Section for maintenance of records

Appendix G2

Job Description of the Investigators

Chief Investigator/ Joint Secretary

1. To institute an investigation as per Annex 13 obligations.
2. Determine the extent of investigation to be carried out on the basis of the nature of accident/ incident and comprise a commission, Investigation Committee or tabletop exercise.
3. To recommend a qualified investigator to look into the nature of the incident or accident for the appointment of an accident investigation in-charge and, as required, investigators.
4. To ensure initial notifications, draft final and final report are disseminated to concerned States.
5. To receive progress report of incident / accident investigation from time to time,
6. To periodically evaluate the implementation status of the recommendations received from the incident or accident investigation.
7. To periodically assess the requirement of amendments to the regulation and procedure manual.

Investigator In-charge

1. As per Provision 4.9.1
2. The Investigator-in-charge should also consider initiating an event flow chart to track the progress of the investigation.

Technical Team (Go-Team)

1. Reviewing the cargo manifest and working with local safety officials as necessary;
2. conducting an initial assessment of the circumstances of the accident site(s), the geography and condition of the site(s), and the hazards that exist, including biohazards;
3. defining the boundary(ies) of the site(s) required for the investigation, and the hazardous zones within the site(s);
4. on behalf of the Ministry assuming responsibility for the custody of the site(s);
5. taking action to mitigate the risks within the site(s), to the degree possible;
6. determining the safety equipment and safety procedures for investigators operating on the site; and
7. Establishing and maintaining the safety of operations and of personnel at the accident site(s).

SAIS

1. As defined in 2.2.3

Engineering investigators:

1. Prepare list of necessary documents to be collected from different agencies
2. Prepare List of Equipment necessary for the site visit
3. Participate actively and as far as practicable, collect equipment, devices, documents and other necessary items from the crash site itself.
4. Coordinate wreckage plotting and keep record of each dispersed part.
5. Review documents and reports, conduct interviews and prepare a report. If necessary, lead engineering group investigations.
6. Complete tasks as assigned by the Investigation In-charge.

Operations Investigators

1. Prepare list of necessary documents to be collected from different agencies
2. Prepare List of Equipments necessary for the site visit
3. Participate actively and as far as practicable, collect equipments, devices, documents and other necessary items from the crash site itself.
4. Coordinate wreckage plotting and keep record of each dispersed part.
5. Review documents and reports, conduct interviews and prepare a report. If necessary, lead Operations group investigations.
6. Coordinate with aviation medicine experts for the analysis of Human Factors Investigation.
7. Complete tasks as assigned by the Investigation In-charge.

ATS, Medical and Pathological, Human Factors, Meteorology and other Investigators:

As Assigned by the Investigator In-charge.

APPENDIX H

Ministry of Culture, Tourism and Civil Aviation
Accident Investigation Section/Commission
Release of Wreckage

Accident Investigation Number ……

Registered Owner/Operator……

Aircraft Registration and Type ……

Date of Accident ……

Location ……

The Accident Investigation Commission, formed on.....date has / has not completed its investigation of the aircraft wreckage described above. All wreckage except those listed below is hereby released to the registered owner/operator or his designated representative for appropriate disposition.

Name of the item	Item details (description and condition)	Date returned

If no parts are retained, insert NONE in this blank ……..

……..

Signature

(Member-Investigation Commission)

(This section may be signed by a person, not the owner or the owner's representative, who has knowledge of the disposition of the aircraft wreckage and its parts. Such signature does not place responsibility for the disposition of the wreckage upon that person.)

I HEREBY ACKNOWLEDGE

……...Receipt of the above described aircraft wreckage.

……..…… Signature

(Registered Owner/Operator or his Representative)

APPENDIX I

Format of letters to be given to investigators

Date……

Mr/Mrs……..

Sub: ……..

As per the decision of Government of Nepal dated…**.....**, you have been appointed as member of the Accident Investigation Commission to investigate accident of …… that occurred on date……at……..

Regards,

……..