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AIR SAFETY PROCEDURES MANUAL

AIR SAFETY DIRECTORATE

OFFICE OF THE DIRECTOR GENERAL OF CIVIL AVIATION

TECHNICAL CENTRE

OPP. SAFDARJUNG AIRPORT

NEW DELHI-110003

PREFACE

The Air Safety Procedures Manual has been prepared for use and guidance of officers of Air Safety Directorate in the performance of their duties.

All matters pertaining to Air Safety Officers duties, responsibilities and procedures have been covered to the extent possible. Officers are expected to use good judgment while dealing with the matters where specific guidance has not been given. While exercising their delegated powers, officers should follow the Gazette notification of the Government of India in the Ministry of Tourism and Civil Aviation, New Delhi S.O. Nos. 726 (E) and 727(E), the dated 04th October 1994. Changes in aviation technology, legislation and developments within the industry may necessitate changes to requirements and the relevant procedures followed by DGCA.

The manual will be updated from time to time based on suggestions received or to incorporate any changes in the procedures that may be carried out.

(Lalit Gupta**)**
Joint Director General

Dated: 24.10.2018

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CHAPTER-1

DGCA REGULATORY RESPONSIBILITIES AND METHODOLOGY

1.1 GENERAL

The Directorate General of Civil Aviation (DGCA) is the Regulatory Authority in the field of Civil Aviation in India. It is responsible for regulation of air transport services to/from/within India and for enforcement of Civil Air Regulations, Air Safety and Airworthiness Standards. It also co-ordinates all regulatory functions with International Civil Aviation Organization.

The headquarter is located in New Delhi with regional offices in the various parts of India. Directorate General of Civil Aviation is an attached office of the Ministry of Civil Aviation.

There are 5 (five) Regional Air Safety offices located at Delhi, Mumbai, Chennai, Hyderabad, and Kolkata. Apart from the Regional Air Safety Offices, there are Regional/ Sub- regional Offices in respect of various other Directorates of DGCA i.e. Airworthiness, Aerodrome Standard, Flight Standard, Training and Licensing and Air Traffic Management located at various cities of India. In addition one office of Aeronautical Engineering Directorate is located at Bangalore and the Gliding Centre at Pune.

[India is participated in ICAO by the Representative of India.]

1.2 STRUCTURE OF DGCA

DGCA has the following 11 Directorates;

(i) Administration Directorate

(ii) Aerodrome Standards Directorate

(iii) Air Safety Directorate

(iv) Air Transport Directorate

(v) Airworthiness Directorate

(vi) Flight Standard Directorate

(vii) Information & Regulation Directorate

(viii) Aeronautical Engineering Division

(ix) Training & Licensing Directorate

(x) Flying Training Directorate

(xi) Air Space and Air Traffic Management Dte.

A map and the organizational structure including the location of various regional Air Safety offices is placed in Annex 1A.

1.3 RESPONSIBILITIES AND FUNCTIONS OF THE DGCA

Operation of aircraft involves a number of factors which contribute to the safety of aircraft. Although for every mode of travel there is an element of risk and danger to the travelling public, it is more so in the case of air travel for obvious reasons. A review of history of aircraft travel will show that there have been number of accidents resulting in loss of human life and property. In the early phase of aviation these dangers and risks were limited to daring individuals and group of people who were aware of the risks. Hence, as the air travel became a more common mode of public transport the responsibilities of ensuring safety of public became the responsibility of States. Almost all the States have established Civil Aviation Department to look after the various aspects of safety for air travel.

- The factors contributing to the safety of air travel are of two types viz. the human factors and the machine factors i.e. the aircraft. It is the prime objective of the manufacturer to see that when an aircraft is delivered to a customer, it is airworthy, meaning that it meets the requirements and conforms to type certificate and is in a safe condition for operation.

- To ensure the safety of air transport as mentioned earlier, most of the States through legal procedures have acquired powers to regulate aircraft operations.

- ICAO plays a vital role in this regard through annexes, standards, advisory materials and recommended practices and helps the States.

- DGCA set up in India was established in pursuance to Indian Aircraft Act 1934 and aircraft rules made there under. The set up as existing today is as given in Para 1.2. Air Safety Directorate is one of the wings of DGCA.

- The responsibilities and functions of the DGCA are enumerated below:

- Registration of civil aircraft;

- Formulation of standards of airworthiness for civil aircraft registered in India and grant of certificates of airworthiness to such aircraft;

- Licensing of pilots, aircraft maintenance engineers and flight engineers, and conducting examinations and checks for that purpose;

- Approval of Cabin Crew training centers, Cabin Crew training Programme, SEP Instructors.

- Licensing of air traffic controllers;
- Certification of aerodromes and CNS/ATM facilities;
- Maintaining a check on the proficiency of flight crew, and also of other operational personnel such as flight dispatchers and cabin crew;
- Granting of Air Operator's Certificates/ Permit to Indian carriers and regulation of air transport services operating to/from/within/over India by Indian and foreign operators, including clearance of scheduled and non-scheduled flights of such operators;
- To overseeing the implementation of SSP and coordinates as appropriate, the activities of the various State aviation organizations encompassed under SSP. Also establishing corresponding SMS for service providers/ organizations engaged in commercial operations, maintenance of aircraft, aerodrome operations, provision of air traffic services, design organizations, training to implement a safety management system.
- Conducting investigation into Serious incident /incidents and taking preventive measures for the same including formulation for implementation of Aviation Safety Management Programmes;
- Carrying out amendments to the Aircraft Act, the Aircraft Rules and the Civil Aviation Requirements for complying with the amendments to ICAO Annexes, and initiating proposals for amendment to any other Act or for passing a new Act in order to give effect to an international Convention or amendment to an existing Convention;
- Coordination of ICAO matters with all agencies and sending replies to State Letters, and taking all necessary actions arising out of the Universal Safety Oversight Audit Programme (USOAP) of ICAO;
- Supervision of the institutes/clubs/schools engaged in flying training including simulator training, AME training or any other training related with aviation, with a view to ensuring a high quality of training;
- Granting approval to aircraft maintenance, repair and manufacturing organizations and their continued oversight;
- To act as a nodal agency for implementing Annex 9 provisions in India and for coordinating matters relating to facilitation at Indian airports including holding meetings of the National Facilitation Committee;
- Rendering advice to the Government on matters relating to air transport including bilateral air services agreements, on ICAO matters and generally on all technical matters relating to civil aviation, and to act as an overall regulatory and developmental body for civil aviation in the country;

- Coordination at national level for flexi-use of air space by civil and military air traffic agencies and interaction with ICAO for provision of more air routes for civil use through Indian air space;

- Keeping a check on aircraft noise and engine emissions in accordance with ICAO Annex 16 and collaborating with the environmental authorities in this matter, if required;

- Promoting indigenous design and manufacture of aircraft and aircraft components by acting as a catalytic agent;

- Approving training programmes of operators for carriage of dangerous goods, issuing authorizations for carriage of dangerous goods, etc.

1.4 RESPONSIBILITIES AND FUNCTIONS OF AIR SAFETY DIRECTORATE

Air Safety Directorate at DGCA (HQ) is headed by Director Air Safety. Director Air Safety/ DDG (Air Safety) reports directly to the DG for all safety related functions. For other matters including administration of the directorate reporting is through JDG (Air Safety).

The functions of the Air Safety Directorate are as under:-

1. **Investigation of Civil Registered Aircraft Incidents:**

1.1 Under Rule 13 of Aircraft (Investigation of Accidents and Incidents) Rules 2017 the serious incidents to aircraft with AUW up to 2250kg and to aircrafts other than turbojet engine aircrafts are investigated by the Investigator-in-Charge from Air Safety Directorate. Notification of the occurrence is forwarded to the concerned State i.e State of Manufacture, State of Design, State of registry, State of Operator in accordance with the Aircraft Rules 2017 and ICAO Annex 13. Draft report is forwarded for the comments to states that participated in the investigation. After the completion of the investigation or inquiry and acceptance of the report by the central government it is put on the website of the DGCA and forwarded to concerned states in accordance with ICAO Annex 13.

1.2 A significant occurrence is intimated to the MOCA, in addition if on the basis of the initial notification/preliminary investigation an occurrence falls in the category of serious incident/accident, it is intimated to AAIB.

1.3 Under Rule 13 of Aircraft (Investigation of Accidents and Incidents) Rules 2017 the incidents are investigated by the Investigator-in-Charge from Air Safety Directorate.

1.4 Incidents other than para 1.1 and 1.3 are investigated by Permanent Investigation board of the Airlines under supervision of officer of the Regional Air Safety Offices.

2. **Accident/Incident Prevention work:**

In addition to investigation work, Air Safety Directorate shall perform the following Accident/ Incident prevention programme:-

2.1 To carry out the Regulatory audit of airlines/operators.

2.2 To carry out surveillance inspection of airlines/operators e.g., pre-flight medical check of crew, ramp inspection, load and trim check, FDTL etc.

2.3 To issue Civil Aviation Requirements, Air Safety Circulars, publication of annual accident summary etc.

2.4 To carry out spot checks, night inspection of airlines/operators and any aviation related agencies limited to the area/domain of Air Safety Directorate.

2.5 To monitor implementation of recommendations made by various courts, committees pertinent to DGCA.

2.6 To monitor action taken reports on Regulatory audits carried out on airlines and aviation agencies.

2.7 To maintain the occurrence data and analysis of the data.

2.8 To coordinate implementation of measures to prevent Wildlilife (bird/ animal) Strikes to aircraft at all airports. Coordinate for organizing NBCC meetings.

2.9 To coordinate with the ICAO and other aviation agencies concerning safety.

2.10 To coordinate with the Ministry of Civil Aviation on various Technical issues including parliament matters.

2.11 To organize safety seminars/training courses.

3. **SSP and SMS implementation work:**

SSP/SMS Division has been formed in DGCA, Safety Accountabilities and responsibilities have been incorporated in SSP India document which is also placed on DGCA website.

Functions and responsibility of Air Safety Directorate are as follows:

3.1 Coordinate the functioning of SSP/SMS division.

3.2 Carryout all the activities on behalf of the DGCA for the Implementation of SSP

3.3 Coordinate for organizing Steering Committee meeting.

3.4 Acceptance of SMS Manual, Phase wise implementation of SMS and SPI's of the operators in coordination with other Directorates

3.5 Oversight of the implementation of the SMS by the operators.

3.6 To issue Civil Aviation Requirements and SSP/SMS Division circulars

3.7 Acceptance of FSDS Manual of Operators.

4. **Approval of Flight Safety Organisation and Personnel:**

4.1 Approval of Flight safety manual.

4.2 Approval of Flight Safety Organisation.

4.3 Approval of Chief and Deputy Chief of Flight Safety of the organization.

5. Any other work assigned by the Director General.

6. Regional Air Safety Offices:

Air Safety offices are located at Delhi, Mumbai, Hyderabad, Kolkata, and Chennai. The Delhi, Mumbai, Kolkata and Chennai offices are headed by Director Air Safety and Hyderabad office is headed by Assistant Director of Air Safety. All regional heads of Air Safety report directly to Director Air Safety HQ/DDG (Air Safety).

A Regional Head of Air Safety Office is responsible for effective functioning of his office. He should distribute the works pertaining to his office among his officers based on their qualification, knowledge, experience, training and expertise in the specific areas etc.

Regional Air Safety offices shall perform following functions:

- To carry out the investigation of incidents occurring to operators/airlines in their region.
- Preservation of evidences in case of accidents/ Serious Incident till the arrival of representative of AAIB.
- To carry out the investigation of Ground incidents.
- To carry out the investigation of Air Miss/Air Prox/ATC violations.
- Participate in the Airport operational area inspection, Airport security meeting, Airfield Environment Management Committee, Regional operator Committee meetings.
- Monitoring of incidents of operators/airlines.

- CVR/DFDR monitoring.
- ATC Tape monitoring.
- To carry out the airport inspections (Surveillance/ Audit).
- To carry out surveillance inspection of airlines/operators e.g., preflight medical check of crew, ramp inspection, load and trim check, FDTL etc.
- To carry out night inspections and spot checks limited to the area/domain of Air Safety Directorate.
- To participate in the regulatory audit of airlines/operators.
- To report all occurrences in their region.
- To submit Safety data on routine basis.

7. Coordination of Regional Air Safety Offices with Air Safety Directorate (HQ).

- Regional Offices shall coordinate with Air Safety Directorate (HQ) on all safety matters and report all occurrences to DAS/DDG (Air Safety) on daily basis by telephone/fax/E-Mail. In addition they will report all occurrences to AAIB by mail on daily basis.
- To forward headquarter every month the surveillance /accident prevention work carried out.
- Coordination meeting between regional Air Safety offices and Air Safety Directorate (HQ) will be held once in a year. During this meeting all the technical and financial/administrative issues will be discussed pertaining to their region.

1.4 DUTIES AND RESPONSIBILITIES OF OFFICERS OF AIR SAFETY DIRECTORATE

DUTIES AND RESPONSIBILITIES OF DIRECTOR AIR SAFETY

1. Investigation of Serious Incident, Incident, precautionary landing, forced landing, Air Misses and other potential hazardous situation arising in air/ ground operation.
2. Coordination with AAIB for their Investigations of Accident/Serious Incident.
3. Planning and monitoring, maintenance of the data and follow up of accident prevention works/surveillance work.
4. Framing and amendment of Regulatory requirement of all matters from time to time

concerning Air Safety Directorate.

5. To review the plaint and file/prepare the draft/ written statement and file affidavits.
6. SSP/ SMS implementation in India.
7. Accident/ Incident prevention work.
8. Monitoring and planning Training of Officers.
9. In addition Director Air Safety Headquarters has following functions:

- To coordinate and review the functions of all Air Safety Regional Offices.
- To Issue suspension of any certificate, rating, license, authorization or approval during the investigation of any matter.
- Issue of approval of Flight Safety Manual.
- To issue the approval of Flight Safety Organisation, Chief of Flight Safety & Deputy Chief of Flight safety.
- Acceptance of SMS Manual, Phase wise implementation of SMS by the Operators and FSDS manual

DUTIES AND RESPONSIBILITIES OF DEPUTY DIRECTOR AIR SAFETY

1. Investigation of Serious Incident, Incident, precautionary landing, forced landing, Air Misses and other potential hazardous situation arising in air/ ground operation.
2. Coordination with AAIB for their Investigations of Accident/Serious Incident.
3. Issue of approval of Flight Safety Manual (DDAS HQ only).
4. Framing and amendment of Regulatory requirement of all matters from time to time concerning Air Safety Directorate.
4. To review the plaint and file/prepare the draft/ written statement and file affidavits.
5. Carry out regulatory audit and follow up on the findings.
6. SSP/ SMS implementation in India.
7. Accident/ Incident prevention work.

8. Review the applications for approval of Flight Safety Organisation, Chief of Flight Safety & Deputy Chief of Flight safety.

9. Flight Safety data management and analysis.

DUTIES AND RESPONSIBILITIES OF ADAS (E)

1. Investigation of Serious Incident, Incident, precautionary landing, forced landing, Air Misses and other potential hazardous situation arising in air operation.

2. To compile the investigation report and to carry out analytical analysis of the happening to promote the air safety.

3. Accident/ Incident prevention work.

4. Carry out regulatory audit and assist in the follow up on the findings. Maintaining of Audit data base.

5. SSP/ SMS implementation in India.

6. Review of Flight Safety and Operational Manual submitted by various air operators.

7. To review the plaint and file/prepare the draft/ written statement and file affidavits.

8. Review the applications for approval of Flight Safety Organisation, Chief of Flight Safety & Deputy Chief of Flight safety.

9. Assist in Safety data management and analysis.

DUTIES AND RESPONSIBILITIES OF AIR SAFETY OFFICER (E)

1. Investigation or assist in investigation of Serious Incident, Incident, precautionary landing, forced landing, Air Misses and other potential hazardous situation arising in air operation.

2. To compile the investigation report and to carry out analytical analysis of the happening to promote the air safety.

3. To prepare the statistics of the occurrences.

4. To assist in Accident/ Incident prevention work.

5. To Assist in SSP/ SMS implementation in India.

6. Review of Flight Safety and Operational Manual submitted by various air operators.

8. Assist in Safety data management and analysis.
9. Assist in maintaining in Audit data base.

DUTIES AND RESPONSIBILITIES OF DEPUTY DIRECTOR (OPERATIONS)-POSTED IN AIRSAFETY DIRECTORATE

1. Investigation of ATC/ CNS incidents, Airprox incidents, Apron Incidents and Runway Incursions.
2. Suggest actions required to avoid ATC incidents in future.
3. Carry out Aerodrome/Surveillance Inspection
4. Follow up action on inspection report with Airports Authority of India & aerodrome operators.
5. Wildlife (Bird / Animal) strike data management and analysis. Co-ordination with various agencies for bird strike prevention.
6. Assist in organizing National Bird Control Committee meetings.
7. Associate with Airfield Environment Management Committee.
8. Suggest actions required on the reports for BWHM-Wildlife bird/animal hazard management.
9. Associate in drafting of CAR, Air Safety/Operations Circular.

DUTIES AND RESPONSIBILITIES OF ASSISTANT DIRECTOR (OPERATIONS)-POSTED IN AIRSAFETY DIRECTORATE

1. Investigation/ associate in investigation of ATC incidents, Airprox incidents, Apron
   a. Incidents and Runway Incursions.
2. Suggesting actions required to avoid ATC incidents in future.
3. Monitoring & checking readability of ATC Tape.
4. Carry out Aerodrome/Surveillance Inspection
5. Follow up action on inspection report with Airports Authority of India & aerodrome operators.
6. Wildlife (Bird / Animal) strike data management & co-ordination with various agencies for bird strike prevention.

7. Organise National Bird Control Committee meetings on behalf of DGCA.
8. Associate with Airfield Environment Management Committee.
9. Suggest actions required on the reports for BWHM-Wildlife bird/animal hazard management.
10. Associated in drafting of CAR, Air Safety/Operations Circular.

DUTIES AND RESPONSIBILITIES OF OPERATIONS OFFICER-POSTED IN AIRSAFETY DIRECTORATE

1. Assist in investigation of ATC incidents, Airprox incidents, Apron Incidents and Runway Incursions.
2. Monitoring & checking readability of ATC Tape.
3. Associate in carry out Aerodrome/Surveillance Inspection
4. Follow up action on inspection report with Airports Authority of India & aerodrome operators.
5. Wildlife (Bird / Animal) strike data management & co-ordination with various agencies for bird strike prevention.
6. Organise National Bird Control Committee meetings on behalf of DGCA.
7. Associate with Airfield Environment Management Committee.

1.5 STATUTORY AUTHORITY

- Rule 156 of Aircraft Rules, 1937 empowers Director General of Civil Aviation to issue General or Special Order in writing, authorizing an officer:
  - at all reasonable times enter any place to which access is necessary for the purpose of exercising his powers or carrying out his duties under these rules;
  - at all times during working hours enter that portion of any organization, factory or place in which aircraft, aircraft components, items of equipment, materials are being designed, manufactured, overhauled, repaired, modified, assembled, tested, stored, and inspect any such organization, factory or place, aircraft, aircraft component and item of equipment and drawings relating thereto;
  - at any time inspect any aircraft including a private aircraft which is required by these rules to be certified as airworthy or in respect of which a certificate of airworthiness is in force

or has been suspended or deemed to be suspended;

- enter, inspect and search any aircraft for the purpose of securing compliance with any of these rules or the provisions of the Aircraft Act, 1934 (22 of 1934).

 Any person authorized by the Director-General to inspect shall advise the owner or operator of the aircraft and the organisation in the method of inspection, manufacture and maintenance of aircraft.

 The activities of the Air Safety officers will be governed by the following:

- The Aircraft Manual, Civil Aviation Requirements and powers delegated vide SO 726 & 727 for exercising the duties and functions.
- Procedures Manual.
- Air Safety Circulars, applicable AICs.
- Other relevant directives and instructions that may be issued from time to time by the Director General.

1.7 STAFFING REQUIREMENTS

 Staffing of the Directorate of Air Safety with a sufficient number of suitable Air Safety Officers, experienced, qualified and capable of accomplishing the wide range of activities covered in this manual is paramount to the success of the Safety Oversight Programme of the DGCA.

 Air Safety Officers must not only have the knowledge, experience and qualifications to carry out their duties in a professionally sound manner, but also possess the personality to win the respect and confidence of the operators. This would require a reasonable level of tact, understanding, firmness, impartiality, integrity and an exemplary personal conduct both in the office and at the Operator's premises.

1.8 QUALIFICATIONS REQUIREMENTS OF OFFICERS OF AIR SAFETY DIRECTORATE

 Individuals seeking positions as Air safety Officer should have extensive academic and technical education and have progressed through positions of increased technical and supervisory responsibility in the aviation industry or the military services.

 The satisfactory or unsatisfactory execution of the various Air Safety functions depends to a large extent on the qualifications, experience, competence and dedication of individual Officers. In addition to the vital importance of technical competency in performing safety

inspections, the surveillance of approved operators and approved maintenance organizations, it is likewise critical that Officers possess a high degree of integrity, be impartial in carrying out their tasks, be tactful, have a good understanding of human nature and possess the ability to get along well with people. Considering the specialized and sensitive nature of the Officer's job profile, the qualifications, experience and personal characteristics of each person employed to perform Officer's duties will be verified and carefully evaluated before selections are made.

The induction of Air Safety Officers presently in the Air Safety Directorate is at two levels; viz. Air Safety officer and Assistant Director Air Safety/Sr. Air Safety officer based upon Qualifications/ Experience for other positions (DDAS/DAS) officers are inducted on deputation or short term contract basis depending upon the requirements. For details of qualification and experience requirements reference may be made to the recruitment rules.

DIRECTOR AIR SAFETY

(a) **Essential:**

(i) Degree in Aeronautical Engineering or a pass in Associate Membership examination Parts II&III / Sections A&B of the Aeronautical Society of India.

(ii) 10 years experience in Airframe, Aircraft Structure Systems/Designs or engines/power plants or electrical/ instruments/Avionics in a reputed manufacturing / overhauling / maintenance establishment

Desirable:

(i) Wide knowledge of civil aviation in all its aspects like flying operations, air navigations, tele-communications, aircraft structures, aero-engines, aircraft systems, meteorology and air traffic control

(ii) Experience of drafting reports.

Note 1: The Departmental Officers in feeder category who are in the direct line of promotion shall not be eligible for consideration for appointment on deputation. Similarly, deputationists shall not be eligible for consideration for appointment by promotion.

Note 2: The period of deputation/contract, including period of deputation/contract in another ex-cadre post held immediately preceding this appointment in the same or some other organisation / Department of the Central Government, shall ordinarily not exceed 4 years. The maximum age limit for appointment by deputation (including short-term contract) shall be not exceeding 56 years as on the closing date of the receipt of applications

(b) For departmental promotion, 5 years experience in the Deputy Director Grade.

DEPUTY DIRECTOR AIR SAFETY

(a) **Essential**:

(i) Degree in Aeronautical Engineering or a pass in Associate Membership examination Parts II&III / Sections A&B of the Aeronautical Society of India.

(ii) 5 years" experience in Airframe, Aircraft Structure Systems/Designs or engines/power plants or electrical/instruments/Avionics in a reputed manufacturing/overhauling/ maintenance establishment.

(Qualifications relaxable at Commission's discretion in case of candidates otherwise well qualified; in particular, the qualification regarding experience is relax able in case of candidates belonging to Scheduled Castes and Scheduled Tribes for posts reserved for them).

Desirable:

(i) Experience in aircraft accident investigation.

(ii) Second Class Navigator's License.

(iii) Pilot's Licence.

Note1: The Departmental Officers in feeder category who are in the direct line of promotion shall not be eligible for consideration for appointment on deputation. Similarly, deputationists shall not be eligible for consideration for appointment by promotion.

Note 2: The period of deputation/contract, including period of deputation/contract in another ex-cadre post held immediately preceding this appointment in the same or some other organization / Department of the Central Government, shall ordinarily not exceed 4 years. The maximum age limit for appointment by deputation (including short term contract) shall be not exceeding 56 years as on the closing date of the receipt of applications

(b) For departmental promotion, 5 years experience in the Assistant Director Air Safety(E)/ Senior Air Safety Officer.

ASSISTANT DIRECTOR AIR SAFETY

(a) Essential:

(i) Degree in Aeronautical Engg. of a recognized University or a pass in Associate Membership examination Parts II&III / Sections A&B of the Aeronautical Society of India.

(ii) 5 years‟ experience in airframe, aircraft structure system/designs or engines/power plants or electrical/ instruments/Avionics in a reputed manufacturing/overhauling/maintenance establishment.

Note 1: Qualifications are relaxable at the discretion of the Union Public Service Commission in case of candidates otherwise well qualified.

Note 2: The qualifications regarding experience is relaxable at the discretion of the Union Public Service Commission in case of candidates belonging to Scheduled Castes and Scheduled Tribes, if at any stage of selection, the UPSC is of the opinion that sufficient number of candidates from these communities possessing the requisite experience are not likely to be available to fill up the vacancies reserved for them.

Desirable:

(i) Experience in investigation of aircraft accidents.

(ii) Pilot's license

(iii) Navigator's license

(iv) Flight Engineer's license on modern transport aircraft.

(b) For departmental promotion, 5 years experience in the Air Safety Officer (E).

AIR SAFETY OFFICER

(a) Essential:

Degree in Aeronautical Engineering of a recognized University or a pass in Associate Membership examination Parts II&III / Sections A&B of the Aeronautical Society of India. (Qualifications relax able at Commission's discretion in case of candidates otherwise well qualified; in particular, the qualification regarding experience is relax able in case of candidates belonging to Scheduled Castes and Scheduled Tribes for posts reserved for them).

Desirable:

(i). Experience in investigation of aircraft accidents. (ii). Experience as a Pilot or Navigator.

DEPUTY DIRECTOR OPERATIONS

(i) Degree in engineering in Aeronautical or Electrical or Electronics disciplines from a recognized university or,

Masters in Science in the subject of Electronics or Physics.

(ii) Eight years experience in one or more of the following:-

- Air Traffic control with Aerodrome Control or Approach Control or Area Control rating, or

- Licensing of Aerodromes or Flight crew or Air Transport, or

- Management of Airside Operations of major or International Civil Airports, or

- Aircraft flying with commercial pilot license, or aircraft flying in Defense services, or Flight operations department of a Scheduled airlines.

Note 1: (i) The period of required experience may also be considered by combining experience in more than one field listed above.

(ii) The period of the actual training in any of the specialized area (as specified in essential qualification)

(iii) May be counted towards the experience provided that such benefits will be restricted to a maximum period of one year.

Note 2: Qualifications are relaxable at the discretion of the Union Public Service Commission, for reasons to be recorded in writing, in case of candidates otherwise well qualified.

Note 3: The qualification regarding experience is relaxable at the discretion of Union Public Service Commission, for reasons to be recorded in writing, in case of candidate belonging to Scheduled Caste or Scheduled Tribe , if at any stage of the selection the Union Public Service Commission is of the opinion that sufficient number of candidates from these communities possessing the requisite experience are not likely to be available to fill up the posts reserved for them.

ASSISTANT DIRECTOR OPERATIONS

(i) Degree in engineering in Aeronautical or Electrical or Electronics disciplines from a recognized university or, Masters in Science in the subject of Electronics or Physics.

(ii) Three years experience in one or more of the following:-

- Air Traffic control with Aerodrome Control or Approach Control or Area Control rating, or

- Licensing of Aerodromes or Flight crew or Air Transport, or

- Management of Airside Operations of major or International Civil Airports, or

- Aircraft flying with commercial pilot license, or aircraft flying in Defense services, or Flight operations department of a Scheduled airlines.

Note 1: (i) The period of required experience may also be considered by combining experience in more than one field listed above.

(ii) The period of the actual training in any of the specialized area (as specified in essential qualification)

(iii) May be counted towards the experience provided that such benefits will be restricted to a maximum period of one year.

Note 2: Qualifications are relaxable at the discretion of the Union Public Service Commission, for reasons to be recorded in writing, in case of candidates otherwise well qualified.

Note 3: The qualification regarding experience is relaxable at the discretion of Union Public Service Commission, for reasons to be recorded in writing, in case of candidate belonging to Scheduled Caste or Scheduled Tribe , if at any stage of the selection the Union Public Service Commission is of the opinion that sufficient number of candidates from these communities possessing the requisite experience are not likely to be available to fill up the posts reserved for them.

OPERATIONS OFFICER

(i) Degree in engineering in Aeronautical or Electrical or Electronics disciplines from a recognized university or, Masters in Science in the subject of Electronics or Physics.

(ii) Two years experience in one or more of the following:-

- Air Traffic control with Aerodrome Control or Approach Control or Area Control rating, or
- Licensing of Aerodromes or Flight crew or Air Transport, or
- Management of Airside Operations of major or International Civil Airports, or
- Aircraft flying with commercial pilot license, or aircraft flying in Defense services, or Flight operations department of a Scheduled airlines.

Note 1: (i) The period of required experience may also be considered by combining experience in more than one field listed above.

(ii) The period of the actual training in any of the specialized area (as specified in essential qualification)

(iii) May be counted towards the experience provided that such benefits will be restricted to a maximum period of one year.

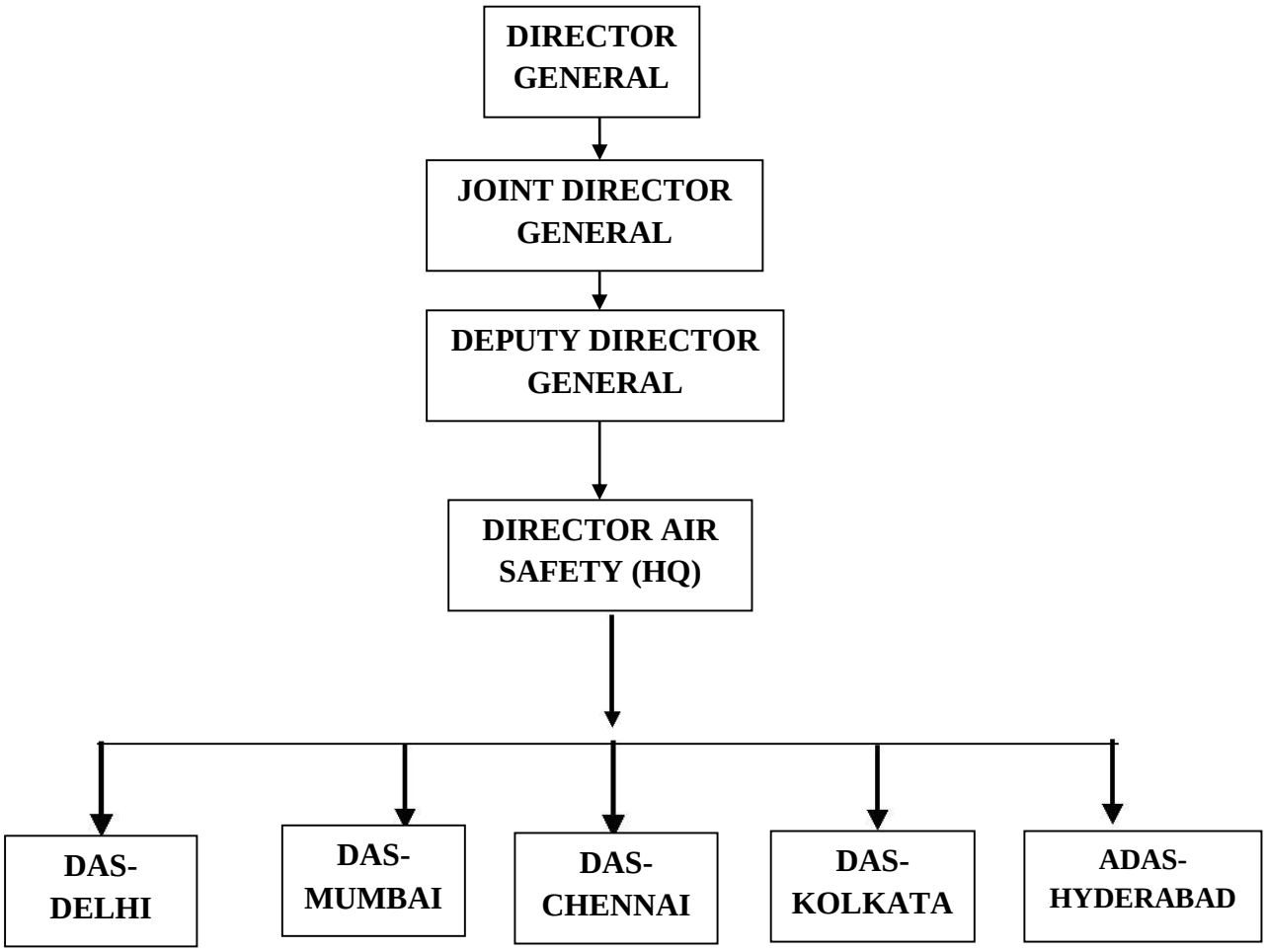
Note 2: Qualifications are relaxable at the discretion of the Union Public Service Commission, for reasons to be recorded in writing, in case of candidates otherwise well qualified.

Note 3: The qualification regarding experience is relaxable at the discretion of Union Public Service Commission, for reasons to be recorded in writing, in case of candidate belonging to Scheduled Caste or Scheduled Tribe , if at any stage of the selection the Union Public Service Commission is of the opinion that sufficient number of candidates from these communities possessing the requisite experience are not likely to be available to fill up the posts reserved for them.

ANNEX- IA

Organization Structure

Air Safety



CHAPTER-2

PERSONAL ETHICS, CONDUCT AND CREDENTIALS

2.1 GENERAL

This section contains direction and guidance for Air Safety Officers pertaining to principles of ethics and conduct as this affect the performance of duties. Although some scenarios are listed in this section, all circumstances that an officer may encounter cannot possibly be covered. As officers are always in the public eye, they are expected to exercise good judgment and professional behaviour at all times while on and off duty.

2.2 UNIQUE RESPONSIBILITIES OF OFFICERS OF AIR SAFETY DIRECTORATE

Air Safety Directorate is exposed to a number of circumstances that are critical to their positions which may not be pertinent to other directorates of DGCA. The officers are faced in position of frequently interpreting and evaluating the quality of training programs, operations and safety manuals, pilot, cabin crew, ATC personnel, AMEs and personnel involved in aviation activities. It is imperative that all officers be sensitive to the responsibilities and demands of their positions and be objective and impartial while performing their duties. The officers must also be sensitive to actual as well as perceived appearances of any conflict that could disrupt the effectiveness or credibility of the officers and thereby of the Directorate of Air Safety office.

2.3 ON-THE-JOB ETHICS AND CONDUCT

The conduct of an Officer has a direct bearing on the proper and effective accomplishment of official job functions and responsibilities. The officers are required to approach their duties in a professional manner and to maintain that attitude throughout their activities. Through their conduct, officers working in direct contact with operators, and with the public, bear great responsibility in the determination of public perception of the DGCA.

2.4 RULES OF CONDUCT

All officers must comply the Govt. of India's conduct Rules. In addition all officers must observe the following rules of conduct:

- Report for work on time and in a condition that will permit performance of assigned duties;

- Render full and industrious service in the performance of their duties;
- Maintain a professional appearance, as appropriate, during duty hours;
- Respond promptly to directions and instructions received from their superiors;
- Exercise courtesy and tact in dealing with staff, junior officers, colleagues, superiors and members of the public;
- Obtain approval of all absences from duty;
- Conserve and protect office property, equipment, and materials (Officers may not use or permit others to use office equipment, property, or personnel for other than official work);
- When duties concern the expenditure of public funds, have knowledge of and observe all applicable legal requirements and restrictions;
- Safeguard classified information and unclassified information that should not be given general circulation, shall not disclose or discuss any classified information or "official use only" information unless specifically authorized to do so;
- Observe the various laws, rules, regulations, and other authoritative instructions, including all rules, signs, and instructions relating to personal safety;
- Uphold with integrity the public trust involved in the position to which assigned;
- Report known or suspected violations of law, regulations, or policy through appropriate channels;
- Not engage in private activities for personal gain or any other unauthorized purpose while in government service;
- Give any superior or official conducting an official investigation or inquiry all information and testimony about all matters inquired of, arising under the law, rules, and regulations of the Govt. of India.
- Not use illicit drugs or abuse alcohol or other substances;
- Not make irresponsible, false, or defamatory statements that may attack, without foundation, the integrity of other individuals or organizations. Officers are accountable for the statements they make and the views they express;
- Officers must always keep in mind, no matter how trying the circumstances, that they are visible representative of the Government. In their direct contact with a dynamic highly organized and high profile industry it is crucial that the officer project a strong professional image.

2.5 OUTSIDE EMPLOYMENT AND FINANCIAL INTERESTS

- Business Interests. Officers should seek NOC before engaging in any airline or other business activity for which the DGCA has oversight responsibility.

- Conflict of Interest. Officers who wish to participate in outside aviation activities (such as flight instruction, visiting facility, commercial flying, or any other aviation-related activity) should seek prior consent and approval from the Director General.

- Public Speaking. Officers may not receive payment for speaking on issues that deal with their official job functions.

- Fund Raising. Officers may not participate in fund raising or soliciting donations from any business or activity for which their office is assigned oversight responsibility.

2.6 DRESS

- Officers should be aware that their personal appearance affects their professional image; therefore, they should adhere to the guidelines as given below:

- Officers while on visits to air operator facilities approved organizations and on official functions should be formally dressed.

- During training officer's dress should be compatible with the air operator's practice but should lean towards formality.

- During in-flight inspection, the sight of a non-uniformed person moving in and out of the flight deck can be disturbing to hijack-conscious passengers. Officers should therefore maintain a low profile, dress conservatively, restrict movements between cabin and flight decks and display the Authorization issued by the Directorate General of Civil Aviation.

- When performing duties at an airport, the Airport Entry Pass must be worn at all times on the ramp and air-side of the terminal.

2.7 TYPES AND USE OF CREDENTIALS

- Although the credentials contain the general authorization for the officers to carry out their duties, the specified duties may only be performed after the officer has been authorized/ deputed by his seniors. The two type of credentials issued to officers of Air Safety Directorate are as follows:

- Authorization: It is a Photo Identity Card issued by the Director General which identifies an officer as an "authorized Person" for the purposes of Rule 156 of the Aircraft Rules 1937 and authorizes him to perform the duties as per the exercise of powers under therules.
- Airport Entry Pass: It is a Photo Identity Card issued by the Bureau of Civil Aviation Security which allows an officer free and uninterrupted access to restricted areas at civil airports in the country while performing official duties to the extent stated on the authorization as stated above. An officer must display the pass on an outer garment to be permitted entry into airport secured areas, and while working in these areas.
- Lost or Stolen Credentials: If either one or both of these credentials are lost, stolen, or damaged, the officer should report the occurrence immediately to the concerned officers/ authorities.
- Eligibility Requirements: Officers assigned to carry out inspections and audit are eligible to receive the DGCA credential; however, the officers must have completed a 'Basic Airworthiness Officers' course. To be eligible for the Airport credential, the officers must posses DGCA credential; have fulfilled the requirements set forth in this manual authorizing the conduct of ramp inspections; and have a job function that requires the conduct of inspections.

2.8 ADMISSION TO THE FLIGHT DECK

- The flight deck of an aircraft being a secure area, the Air Safety Officer on official duty shall enter the flight deck only after obtaining the prior approval of the Pilot In Command. While maintaining the status of his/her own position, the officer must recognize and support the Pilot-in-Command's authority unless he/she is obviously about to violate a regulation. Even in these conditions, the officer should at first appear to be acting in an advisory capacity and only resort to the powers vested in him/her by the government as a last resort.

- If required, an officer on duty may travel in the flight deck for familiarization purposes. Under normal circumstances he shall make every effort to reserve the use of any observer seat through the operator's flight dispatch or other designated office at least 24 hours prior to scheduled departure time.

- While in the flight deck, the officer must avoid distracting the crew. The Officer is a new person to talk to, and a new source of information. A flight deck conversation can be valuable to the officer as a source of information and to establish a good relationship with the flight crew but it must be carefully controlled so as to avoid distractions at critical times.

- If an officer has reason to believe that an aircraft is in an unsafe condition, he/ she may detain the aircraft pursuant to Section 8 of the Aircraft Act, 1934 directing Air Traffic Services (ATS), where available, to deny take-off clearance could be the best course of action. This would give the officer more time to co-ordinate other recourses.

CHAPTER-3

TRAINING

3.1 GENERAL

- To carry out the role of an investigator and surveillance inspector/ auditor over the operators in the most effective and efficient manner, training of officers in various fields of advanced aviation technology has become an important tool. Initial training of newly recruited Officers who may not have Civil Aviation background is considered essential, for effective discharge of their duties and responsibilities vested in them. Equally important is the refresher training of officers, already serving in the department, on various subjects and topics and periodic training on selected special subjects.

- This chapter details the training requirements for the officers with the intention to provide Basic, Refresher, Specialized, and Type training in the field of aircraft manufacture, operations, investigation and regulatory control. The purpose of this chapter is to ensure that officers of Air Safety Directorate are in tune with the changes in technology, procedures, rules, regulations etc., by laying down the procedures and curricula for training in order to enhance the level of knowledge, standardize the training programme and to derive the maximum benefit from the time and energy invested in imparting training.

- The chapter deals with curriculum and syllabus of training for newly recruited officers and refresher Training for the serving officers.

- The syllabus will be updated on ongoing basis to include topics so that the knowledge of officers is continuously updated to keep abreast of the latest developments taking place in the Aviation field.

- All officers who join the Air Safety Directorate will be required to undergo Basic training course.

- Subsequently, the officers will be subjected to Type training courses, Investigation Courses, Surveillance and Audit Technique Courses etc. in the related areas of specialization. Further, the officers will be subjected to OJT on specific functions such as investigation procedures, conducting maintenance/ operational surveillance and enforcement of Rules and Regulations by Senior Officers of the group to which the new officers are attached. The Head of Office will decide the formation of groups.

- Notwithstanding the above, all the officers are advised to acquire knowledge in all areas of aircraft operations, irrespective of their specialization and undergo training as and when deputed by Hdqrs /Regional Offices.

3.2 TRAINING ADMINISTRATION

- The training programme will be coordinated by the Director of Air Safety (HQ)
- The Heads of offices of various field offices will monitor and ensure that their officers are trained on all topics included herein and relieve the officers for the training courses whenever they are detailed for training.
- Regional offices may organize training on some topics at their end using the resources available in their respective regions. External help from the airlines and various organizations may be sought for specialized training. Such training courses must be coordinated with the HQ to enable participation of officers from other field offices and HQ
- Course completion certificate shall be given to officers completing the training courses successfully or interaction session to assess the knowledge of participants. Regional offices shall maintain a separate file for each individual officers containing details of training undergone by the concerned officer. The concerned officer shall submit a copy of such certificates to the Head of office who in turn will ensure that the training details are forwarded to Headquarters immediately for updating centralized training records.
- For Type training within the country, in the jurisdiction of Region, the Director of Air Safety of the region may nominate officers working under his jurisdiction without the approval of Hdqrs. The officers from outside the region will however be nominated by Headquarters. It shall be the responsibility of the respective head of office to ensure that the nominated officers are relieved to attend the course.
- For Investigation & Type training courses outside the country, Headquarters will nominate officer(s) to undergo training either at manufactures facility or any other DGCA recognized agency, as per the need and requirement.

3.3 TRAINING COURSES

As per the Training Manual

CHAPTER-4

MONITORING OF REGIONAL OFFICES

4.1 JURISDICTION OF REGIONAL OFFICES

4.1.1 Keeping in view the vast geographical location and increase in the aviation activities in some regions, the jurisdiction of Regional Air Safety Offices are defined as follows; it is imperative that all regional Offices shall follow these instructions.

4.1.2 Matters requiring urgent attention shall be referred to Headquarters by Regional Officers.

4.1.3 Air Safety Directorate comprises of 5 Regional offices located at Delhi, Mumbai, Kolkata, Chennai and Hyderabad.

Region	Regional Office	Jurisdiction
Northern Region	DAS Delhi	Delhi, Haryana, Jammu & Kashmir, Himachal Pradesh, Uttaranchal, Rajasthan, Chandigarh, Uttar Pradesh and Punjab
Western Region	DAS Mumbai	Maharashtra, Goa, Daman & Diu Gujarat, Madhya Pradesh and Chhattisgarh
Eastern Region	DAS Kolkata	Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, Sikkim, W. Bengal, Orissa, Bihar, Jharkhand, Assam, Tripura and Manipur
Southern Region-I	DAS Chennai	Tamil Nadu, Kerala, Pondicherry, A&N Island, Lakshadweep
Southern Region-II	ADAS Hyderabad	Andhra Pradesh, Telangana and Karnataka

4.1.4 Director of Air Safety of the regions would function within the powers delegated to them by the Central Government and by the DGCA as reflected in various notifications.

4.1.5 The Regional Air Safety Offices should refer matters that may have repercussions in their respective regions to the Headquarters.

4.2 MONTHLY REPORTING SYSTEM (MRS)

4.2.1 Regional Air Safety offices are engaged in performance of functions entrusted to them. These offices perform various functions and are engaged in several other activities to enhance safety standards of aircraft and its operations, ensuring adequacy of infrastructure of operators, quality of technical manpower etc. In addition, these offices carry out the planned surveillance activities, audits night inspections and spot checks. Also they may conduct special meetings for spreading the safety awareness to the various stake holders of aircraft /airport operation.

4.2.2 MRS helps in assessing the performance of individual officers about the quantum and quality of work done in the form of surveillance checks, investigations and contributions made in enhancing safety standards. It is also a vital tool for assessing manpower requirements of various offices and wherever necessary, to augment the same in different regions.

4.2.3 It is necessary that the work carried out by the field offices is projected to the Headquarters. A Monthly Reporting System which depicts the entire area of activities for the month in which our offices are engaged shall be sent to Headquarters by the 10th of the following month; however an executive summary on the activities of the month must reach the headquarters latest by 4th of the month. Copy of proforma of the MRS is enclosed as Annexure I.

4.2.4 MRS should be forwarded by the regional air safety offices in the form of D.O. letter addressed to the Director of Air safety, headquarters. In case, head of office is either on tour or on leave, the next senior most officer shall sign the D.O. letter. Forwarding of MRS under the signature of the head of office implies that he has gone through the contents of MRS.

4.3 ANNUAL INSPECTION BY HEADQUARTERS

4.3.1 Every Regional Air Safety Office will be visited by Director Air Safety or higher Officers from Headquarters from time to time. This inspection would cover the assessment of the working of the Air Safety offices vis-à-vis Aircraft Rules, Civil Aviation Requirements and the Air Safety Procedures Manual, Enforcement Manual and the observance/compliance of Regulations/ CARs by the Operators in the respective regions.

4.3.2 A 15-days notice will be given to each office before the visit. Regional offices shall keep their

records updated at all times so as to enable the visiting officers to complete their task in the shortest possible time.

4.3.3 The purpose of the visit is not to find faults with the Regional Offices, but to ensure that headquarters' instructions and requirements are being meticulously observed and enforced on the operators and approved organizations. In case there is any practical difficulty in complying with these instructions/requirements, the same would be sorted out during such visits.

4.3.4 The composition of the inspection team shall be decided by the Headquarters depending upon the availability of the officers. Regional Officers should avail of this opportunity to discuss all the issues including administrative issues with the visiting team from headquarters so that that these could be resolved to their satisfaction.

4.3.5 Check list for Inspection is placed as annexure II.

4.4 VISIT OF DGCA AND OTHER SENIOR OFFICERS

4.4.1 The Director General and other Senior Officers of headquarters visit various stations from time to time. Sometimes these officers transit through these stations. It is imperative that Head of Regional office along with his Senior Officer(s) receive these officers at airport and extend all cooperation to them. It must also be ensured that Senior Officers of other discipline/ directorates are received with due respect and help extended to them, when asked for, provided the office has been intimated of their visit.

4.4.2 Officers often visit other regions as investigator/ part of audit team appointed by the Headquarters or to carry out various other official functions such as inspections etc. It must be ensured that before starting official work, they inform the Head of Regional office of the purpose of their visit and if possible, pay a courtesy call to the office. All officers must adhere to these basic norms.

4.5 SAFETY AND SECURITY OF OFFICE PREMISES

4.5.1 Regional offices are entrusted with variety of responsibilities; the records held in all offices are therefore vital and are to be preserved for a long time. All the Regional offices are therefore required to take effective measures to protect these documents from damage due to environment, fire hazard, tampering of records etc.

4.5.2 All offices should procure adequate number of portable/hand held fire extinguishers. Such fire extinguishers can be of dry chemical/carbon dioxide/ water type. Such fire extinguishers should be located at strategic locations in the office building so that in case of exigencies, these fire extinguishers are easily accessible to the officers and staff for use. These fire extinguishers should be kept serviceable at all times.

4.5.3 All officers and staff shall be adequately trained in using these fire extinguishers. The services of Airport Fire Services may be utilized where possible. A contingency/ emergency plan

including the emergency telephone numbers shall also be displayed at prominent location in the office.

ANNEXURE-I

MONTHLY REPORTING SYSTEM FOR THE MONTH OF _____

PART - I

A. Statistics for the month of accident, serious incident, incident, Bird Hit, Air prox. etc.

Operator	Place/Date /Regn.	Type of occurrence	Brief details	Any other relevant information (Pilot/ AME grounding, enforcement action, runway closure etc.)

B. Details of pending data on each incident as in point A above

Operator	Place/ Date/ /Regn.	Type of occurrence	Brief details	Investigation Status	Recommen dations	ATR on each recommend-ation

C. Meetings/Seminars/ In-house Work-shop etc.

Date	Subject	Organised by	Lectures given by	Remarks

D. Training of Officers

Name of Officer	Type of Training.	Period of Training.	Organised by

PART-II

Surveillance Inspection

OFFICE	ITEM OF INSPECTION	DFDR	PRE – FLIGHT MEDICAL	SMS	FLIGHT SAFETY
DAS Delhi	Target				
	Carried out				
DAS Mumbai	Target				
	Carried out				
DAS Kolkata	Target				
	Carried out				
DAS Chennai	Target				
	Carried out				
ADAS Hyderabad	Target				
	Carried out				

SURVEILLANCE INSPECTION

TOTAL NO. OF SURVEILLANCE INSPECTION : (Target:)
TOTAL NO. SURVEILLANCE CARRIED OUT :

Total Number of Findings:___ CAT – I :___ CAT – II:___ Pending:____

SURVEILLANCE AT A GLANCE
ENTIRE AREA OF ACTIVITY

1	2	3		4		5		6		
Total No. of Surveillance Targets	Total No. of Surveillance Conducted	Total No. of deficiency detected		Total deficiency corrected		Total deficiency pending		Break up of pending deficiency		
		CAT – I	CAT – II	CAT – I	CAT – II	CAT – I	CAT – II	1 month	2 month	>2 month
---	---	---	---	---	---	---	---	---	---	---

SURVEILLANCE AT A GLANCE
SCHEDULE AIRLINES (ONLY)

1	2	3		4		5		
Total No. of Surveillance Targets For Scheduled Airlines	Total No. of Surveillance conducted (Airline wise)	Total No. of deficiency detected.(Airline wise)		Total No. deficiency pending. (Airline wise)		Break-up of pending deficiencies month wise (Airline wise) (Number)		
		CAT-I	CAT-II	CAT-I	CAT-II	01 month	02 months	> 02 months
Total								

SURVEILLANCE AT A GLANCE
NON SCHEDULE OPERATORS

1	2	3		4		5		
Total No. of Surveillance Targets For Non Scheduled Operator	Total No. of Surveillance conducted (Non Schedule Operator)	Total No. of deficiency detected. (Non Schedule Operator)		Total No. deficiency pending.(Non Schedule Operator)		Break-up of pending deficiencies month wise (Non Schedule Operator)		
		CAT-I	CAT-II	CAT-I	CAT-II	01 month	02 months	> 02 months
Total								

SURVEILLANCE AT A GLANCE
STATE GOVERNMENT OPERATORS

1	2	3		4		5		
Total No. of Surveillance Targets For State Govt. Operator	Total No. of Surveillance conducted	Total No. of deficiency detected.		Total No. deficiency pending.		Break-up of pending deficiencies month wise		
		CAT-I	CAT-II	CAT-I	CAT-II	01 month	02 months	> 02 months
Total								

SURVEILLANCE AT A GLANCE
PRIVATE OPERATORS

1	2	3		4		5		
Total No. of Surveillance Targets For Private Operators	Total No. of Surveillance conducted	Total No. of deficiency detected.		Total No. deficiency pending.		Break-up of pending deficiencies month wise		
		CAT-I	CAT-II	CAT-I	CAT-II	01 month	02 months	> 02 months
Total								

ENFORCEMENT ACTION DETAILS

S.No	Date/Place	Name of Operator/ Personal	Suspension Details	Status

NIGHT SURVEILLANCE AT A GLANCE

S.No	Name of Operator /AMO / Aircraft	Area of Inspection & Date	Finding Details	Action Taken

CONSOLIDATED SURVEILLANCE INSPECTION REPORT WITH RESPECT TO REGIONAL OFFICES

S.No	Date	Airline/ Operator	Area of Inspection	Finding	Reference as CAR/ Rule	Status	Remarks

Annexure-II

Checklist for Inspection of Regional Air Safety Office

Name of the Office	**:**
Location	**:**
Name of the Head of the Office	**:**
Name & Designation of the Inspecting Officer	**:**
Date(s) of Inspection	**:**

S/N	Aspects to be inspected	Remarks	Signature/Initial
1.	Check for continued availability of Internet/ Intra-net facility to the office.		
2.	Check whether all the officers of the office are able to access Internet especially DGCA web site for updation of DGCA documents such as Aircraft Rules, CARs, Surveillance checklist etc.		
3.	Check that whenever a new requirement / revised requirement such as amendment to Aircraft Rules, CAR, ASC etc. is issued, it is properly discussed in the office preferably by means of meeting/workshop on the subject.		
4.	Check the procedure of intimating occurrences through AIRS, PIB investigations, follow up on recommendations and other incident prevention activities		
5.	Check whether surveillance program as planned by the office during the beginning of the year is being adhered to. Note: At times some surveillance planned for one particular month may be carried out during subsequent months due to some reasons but the area of surveillance planned for must have been carried out.		
6.	Check whether Deficiency reporting form is raised for shortcomings observed during surveillance inspections. Also, check how many cases are open / closed.		

7.	Check what action is taken by the office in case discrepancies observed during surveillance and intimated by Deficiency reporting form are not closed within a reasonable time by the operator.		
8.	Check whether all the officers of the office are able to access DGCA website through Internet to access ICAO Annexes and Guidance Materials.		
9.	Check for the availability of Accident Investigation Kit and personal safety/protective material		
10.	Check that office transport(s) is maintained well and is in good operating condition to facilitate movement of officers for technical duties.		
11.	Check for any difficulty faced by the office regarding administrative and / or financial matters including approvals / sanctions.		

Date: _____ **Signature of Officer:**

Designation : _____

AIR SAFETY PROCEDURE MANUAL

PART II

CHAPTER-1

NOTIFICATION, CLASSIFICATION OF OCCURRENCE AND INVESTIGATION

1.1 NOTIFICATION

1.1.1 a. It is true that the definition of an incident is not specific, but it is important to bear in mind that occurrence becomes reportable, "if it endangers or if not corrected would have endangered the aircraft, its occupants or any other person". This criterion is to be used at all times.

b. It is incumbent that the notice and information of occurrence as stipulated in the Rules 4 of Aircraft(Investigation of Accidents and Incidents) Rule 2017 shall be sent immediately by telephonically as soon as possible by the quickest means available followed by written report within 24 hours by the person in command of the aircraft or if he be killed or incapacitated the owner, operator, the hirer or other persons on whose behalf he was in command of the aircraft to the:

- Director General of Civil Aviation (Attn: Director Air Safety, HQ),
- the Regional Air Safety Office(s) where the Operator is based and where the location of the occurrence falls,
- information to District Magistrate and the Officer In-charge of the nearest police station in case of accident fatality or serious injuries to occupants or otherwise.
- Aircraft Accident Investigation Bureau

c. The Head of Concerned Regional office on receiving the information will transmit the information immediately regarding occurrence as per the format given in the procedure manual to the DAS(HQ)/JDG/DDG/DDAS(HQ) telephonically followed by written information through fax or email along with his assessment and proposed action. He shall also ensure that the occurrence data is transmitted to DAS (HQ) in ECCAIRS format.

d. In addition Head of Concerned Regional office will transmit the information regarding occurrence to AAIB which is manned 24/7 to following contact details:

Phone numbers +9111 24610843, 24610848
Fax number +9111 24693963
Email ID opsctrl@aai.aero

Sh. Bir Singh Rai, JDG, AAIB
bsrai.dgca@nic.in , +91 9871935864

Please refer to MoCA website for the name and contact details of other members of AAIB.

If on the basis of preliminary information of the occurrence/damage/injuries received from the site, it is apparent that occurrence falls in the category of serious incident or accident then DAS (HQ) will intimate the occurrence to AAIB.

In case of such occurrence to aircraft other than turbojet aircraft with AUW below 2250 kg, the classification of occurrence as serious incident will be carried out by DAS (HQ). DAS (HQ) will put up order for appointment of Investigator-in-Charge under Rule 13 of the Aircraft (Investigation of Accident) incident Rule 2017.

Also in case of the significant incident DAS (HQ) will put up order for the appointment of the Investigator-in-Charge under Rule 13 of the Aircraft (Investigation of the Incident and Accident) Rules 2017.

e. In case of serious incidents to be investigated by DGCA, DAS (HQ) shall forward the information as much as received within a period of 5 working days of occurrence to the State of Manufacture, the State of Design/State of Operator (if not India), the State which have a special interest in the serious incident, as per format contained in ICAO Annex 13. Format of notification is given in Annex-4.

1.1.2 The details omitted, if any, from the notification as well as other known relevant information shall be dispatched as soon as it is possible to do so, to the State of Manufacture, the State of Design/State of Operator (if not India), the State which have a special interest in the serious incident.

1.1.3 In case of the foreign registered aircraft, the information shall also be sent to State of Registry and the State of the Operator and the States, which have a special interest in serious incident.

A list of addresses of aircraft accident and incident investigation authorities of States to whom such Notification is required to be sent can be found in the ICAO Manual of Aircraft Accident and Incident investigation, Part I – Organization and Planning (Doc 9756).

The State of the Operator shall also be requested to intimate the presence and description of dangerous goods on board the aircraft, if any.

The State of Registry, State of Operator, State of Design or State of Manufacturer shall each be entitled to appoint an accredited representative to participate in the investigation. These States may appoint one or more advisers, proposed by the operator/manufacturer/design organisation to assist its accredited representative.

1.1.4 In addition to the statutory responsibility of notification is as given in Para 1.1.1(b) &(c) above, the Regional offices of the DGCA, ATC units of Airports Authority of India and Aerodrome Operators are required to report to the Director General of Civil Aviation (Attn: Director Air Safety, HQ), any such occurrence which comes to their knowledge.

1.1.5 Air Safety regional offices will intimate the incident details to DGCA HQ. Upon receipt of notification from airline/ operator/ DGCA regional offices, Air Safety Directorate, DGCA HQ will intimate the incident details to other concerned domain directorate. Detailed notification procedure is given in **Annex-5.**

1.2 INVESTIGATION:

The sole objective of the investigation of an accident or incident shall be the prevention. It is not the purpose of this activity to apportion blame or liability.

For the investigation of Incidents/Serious Incidents ICAO DOC 9756 **"**Manual of Aircraft Accident and Incident Investigation **"** may be referred**.**

1.2.1 Director-General may order the investigation of any serious incident involving an aircraft or a person associated with the maintenance and operation of aircraft, or both, and may, by general or special order, appoint a competent and duly qualified person having experience in aviation accident/incident investigation as Investigator-in-Charge under Rule-13 of Aircraft (Investigation of Accident and Incident) Rules 2017 for the purpose of carrying out such investigation.

1.2.2 The above investigating authorities shall have independence in the conduct of the investigation and have unrestricted authority over its conduct. The investigation shall include:

a) the gathering, recording and analysis of all available information on that accident/ serious incident or incident;

b) if appropriate, the issuance of safety recommendations;

c) if possible, the determination of the causes; and

d) the completion of the final report.

1.2.3 The scene of the serious incident shall be visited, the aircraft/wreckage examined and statements taken from witnesses. (Please refer Appendix – 'A' Investigation Handbook). Head of all Air Safety offices will ensure that investigation field kits and essential personal protective items are complete and kept in state of readiness. This will ensure that the investigator will reach the site without any delay.

1.2.4 Investigator in charge should be up to date with latest procedures/ Rule/ international regulations. Also Air Safety Directorate, DGCA HQ will update for any new procedures in case it is required if investigator in charge is on the site of investigation.

1.2.5 It shall be the responsibility of the Operator/Ground Handling Agent of the operator/Airports Authority/Aerodrome Operator/ Police to provide necessary assistance and the information required thereon to the relatives of the victims/survivors as per ICAO guidelines.

1.3 PROTECTION/PRESERVATION OF AIRCRAFT/ WRECKAGE / EVIDENCES:

1.3.1 DGCA Regional Office(s)/The Officer In-charge of Aerodromes closest to the site of Serious Incident in coordination with Local Police Authorities shall take immediately all reasonable measures to protect the evidence and to maintain safe custody of the aircraft including parts thereof and its contents until the arrival of the Investigator-in-Charge at the scene whenever serious incident occurs at a place under their jurisdiction. Normally, the action taken for arranging for guarding of the wreckage include the preservation, by photographic or other means of any evidence which might be removed, effaced, lost or destroyed. (Ref: Air Safety Circulars on role of police already circulated to all State Administration)

All the documents relating to the aircraft and its personal, ATC/CNS and also fire services shall be segregated and sealed by the concerned operators and shall be handed over to DGCA Officers who shall determine the adequacy of action as deemed appropriate and may seal any other documents etc. pertinent to the investigation as any of the material could be of use to the investigating authority.

1.3.2 The DGCA Regional Office(s)/The Officer In-charge of Aerodromes closest to the site of Serious Incident/incident and Police authorities shall ensure that the Captain and the Co-pilot are immediately subjected to medical check-up for consumption of alcohol. The doctors carrying out such a medical check-up shall take sample of blood, urine etc. as required for detailed chemical analysis.

1.3.3 All the parts of the aircraft or relevant material picked up from the site should be preserved and recorded on a sketch. The positions at which the flight data and voice recorders are found if installed on the aircraft should be recorded on a sketch.

1.3.4 After preliminary observations at the incident site, the aircraft/wreckage should be shifted to a safer site for further examination. Owner / Operator of the aircraft shall make all the arrangements to get the aircraft/wreckage shifted under supervision of the Investigator-in-Charge.

1.4 DISCLOSURE OF RECORDS:

1.4.1 Following records shall not be disclosed or made available to anybody for purposes other than accident or incident investigation:

a) all statements taken from persons by the investigation authorities in the course of their investigation;

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

c) medical or private information regarding persons involved in the accident.

d) cockpit voice recordings and transcripts from such recordings; and

e) Recordings and transcriptions of recordings from ATC units and

f) opinions expressed in the analysis of information, including flight recorders information.

g) Any other document classified as “evidence”.

1.4.2 These records 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/included in report.

1.5 SUBMISSION OF REPORT (S):

1.5.1 Preliminary report by the Investigator-in-Charge should be finalized within two weeks of the incident/serious incident or as stipulated in the appointment order and in the format of ICAO Annex 13 and provided in Annex-3 to Procedure Manual. It shall contain the requisite information including any safety hazard, either in human factor, Aircraft factor and/or any other relevant factor that is prima facie evident during the early stages of investigation such as lack of piloting proficiency if any or any unwarranted disregard of safety requirements, in

case these are obvious to enable framing and implementation of immediate corrective safety measures.

1.5.2 The Final investigation report should be finalized in the format as stipulated in ICAO Annex 13 and provided in Appendix-B to procedure manual. 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 corrective action.

1.5.3 Identity of involved crews/personnel shall not be disclosed in investigation report/or in any appendices attached thereto.

1.5.4 The findings of the report should primarily flow out of the analysis and the conclusions, recommendations should also be drawn out of the findings as directly relevant to incidents.

The investigation report of Investigator-in-Charge shall be submitted to the DAS (HQ), who would assign an officer below him to review the report and suggest any amendment to any part of the report. After the review the report will be presented to DAS (HQ), JDG/DDG (Air Safety) by the officer who carried out the investigation and the officer who reviewed the report.

The final draft report will be forwarded by DAS (HQ) to the State which participated in the investigation to invite their comments on the report within sixty days from the date of the transmittal letter. The comments received will be reviewed by DAS (HQ) in consultation with the Investigator-in-Charge and the reviewing officer. If the comments are accepted by the DAS (HQ),the Draft final report will be amended accordingly. Otherwise the comments would be appended with the report for the review of DDG/JDG with the reasons for not accepting the comments.

The final report after modification if any will be put up to the Director General for his acceptance. After the DG has accorded acceptance to the report, the report will be submitted to the MOCA by DAS(HQ) for making the report public. After the permission of the ministry to make the investigation report public has been received, the report will be put on the web site of the DGCA and will be available for sale.

1.6 IMPLEMENTATION OF THE RECOMMENDATION

1.6.1 Highest priority shall be accorded to the implementation of the recommendations made in the investigation report. DAS (HQ) will monitor the implementation status of the recommendations on weekly basis. He shall coordinate with the other Directorate of the DGCA and other external agencies as required for the purpose of the implementation action. He will bring to the notice of DG/JDG/DDG the status of implementation of recommendations on quarterly basis. He shall also convene special meeting under the chairmanship of DG/JDG/DDG purpose of implementation.

1.6.2 Safety recommendations including those received from other states/ AAIB, will be reviewed and comments of concerned organisation will be obtained by DAS (HQ). After the evaluation of the comments and recommendations decision will be taken for their implementation after the approval of JDG. The state making safety recommendations/ AAIB will be intimated of the action taken with in a period of 90 days by DAS HQ. In case the recommendation is not feasible to implement in a time frame of 90 days, a clarification will be submitted to the state/AAIB. The reason for not accepting the safety recommendations will also be communicated to that state if this may be the case. Air Safety Directorate will be the responsible entity to ensure the implementation of recommendation pertaining to DGCA.

1.6.3 DGCA will forward the recommendation to Regulator/ investigating authorities /manufacturers / Operator of other states in case of serious incident to the aircraft of all up weight less than 2250 Kg and not a turbojet engine and incidents.

1.6.4 Database of recommendations and action taken report will be maintain3ed by Air Safety Directorate, DGCA.

1.7 INVESTIGATION BY PERMANENT INVESTIGATION BOARD

Incidents other than the serious incidents shall be investigated by the Permanent Investigation Board of the Airlines under supervision of Officer of the Regional Air Safety Offices. The attendance of a representative of Regional Air Safety Office in PIB meetings is mandatory and the minutes of the meetings are to be maintained in the office for reference purpose. All efforts must be made to complete the investigation of incident with in a period as specified in ASC. Head of regional office of Air Safety will forward the final investigation reports to DAS (HQ) with their comments and classification of incident based on the element involved (Human factor, Engineering Error, Operation, occurrence category as per ADREP etc). After the review of the report, DAS (HQ) will accept the report and monitor the implementation of the recommendations. A monthly status of the implementation of the recommendations airline wise will be prepared. If the content of PIB/AIB report or any of the recommendations made in the report are not acceptable at DGCA HQ, then the DAS (HQ) will intimate the same to Air Safety Regional offices. The Regional Air Safety offices will intern coordinate with the concerned airline/ operator regarding amendments in report and after finalizing the report same will submitted again to DGCA HQ for acceptance.

1.8 REMOVAL OF FLIGHT RECORDERS FOR THE PURPOSE OF INVESTIGATION

1.8.2 In case of the serious incidents, CVR shall be removed from the aircraft at the earliest opportunity.

1.8.3 CVR is also required to removed in case of the following incidents

- Any failure of aircraft primary structure.

- Damage which necessitates repair before further flight due to ingestion, collision, meteorological conditions, hard or overweight landing, overheating, incorrect technique or practices etc.

- Any incident where any minor injury is sustained by a passenger or member of the crew while on board the aircraft e.g. injury to a passenger as a result of turbulence, scalding of a member of the cabin staff as a result of faulty design, inadequate servicing or the

  in correct handling of galley equipment.

- Declaration of an emergency situation.

- An emergency evacuation of the aircraft.

- Fire or Explosion.

- Fire or Smoke warning

- In-flight engine shut-down or significant loss of power.

- Significant leakage of fuel, hydraulic fluid or oil.

- Smoke toxic or noxious fumes in crew, passengers or freight compartments.

- Abandoned take-off.

- Unintentional deviation from the intended track or attitude, caused by a procedural, systems or equipment defect.

- Precautionary or forced landing.

- Discontinue approach from below decision height.

- Unintentional contact with the ground, including touch down before the runway threshold.

- Over-running the ends or sides of the runway or landing strip.

- The separation between the aircraft was less than prescribed for the situation.

- Runway obstructed by foreign objects.

- All undershoots/overshoots or aircraft leaving the runway paved areas.

- Collision between moving aircraft and vehicles or any other ground equipments.

- Difficulty in controlling intoxicated, violent or armed passengers.

1.8.4 Besides the above listed occurrences, Regional Air Safety Office(s) of the DGCA are empowered for removal of Cockpit Voice Recorder on any other occasion. Chief of the Flight Safety of the Operator in consultation with the Regional Air Safety Offices may also require removal of CVR at any other occasion for investigation/ Inquiry.

1.8.5 Director of Air Safety/Regional Controller of Air Safety in Consultation with DAS (HQ)/DDG (Air Safety)/JDG may exempt the removal of CVR in extraordinary situations. Record of such cases shall be maintained by the respective Regional Offices.

1.9 USE OF RECORDERS FOR INVESTIGATION

1.9.1 For the purpose of investigation information regarding the flight operation can be retrieved from

- FDRs. The term "FDR" (Flight Data Recorder) includes Digital Flight Data Recorders (DFDRs), Solid-State Flight Data Recorders (SSFDRs) and Universal Flight Data Recorders (UFDRs). The minimum parameters that are required to recorded is given in CAR Section 2 Series I Part V.

- Devices that record flight event data include, but are not limited to Quick Access Recorders (QARs), flight test equipment, FADEC, EEC, Engine Instrument Crew Alert System (EIACS), Maintenance recorders, EGPWS, GPS, any equipment having Non-volatile Memory (NVM). Information regarding equipment with NVM can be obtained from Aircraft manufacturer/Equipment manufacturer.

- Ground-based flight data recorders e.g. Radar, CNS/ATM, AOC, ACARs, etc

- Cockpit Voice recorders.

1.9.2 After an incident printouts/download of data from the maintenance recorder should be carried out to avoid any loss of data.

DFDR/QAR data/PCMCI card should be downloaded at the first available opportunity. However, downloading of the data should not be delayed beyond night halt of the aircraft or a time when there is likelihood of loss of the incident data.

It should be noted that optional data collection devices such as QARs and DARs should not be used for incident investigation alone (the FDR and CVR should always be secured). These devices are not crash-protected nor are they designed to withstand the same survivability or operational requirements as mandatory recorders, so they are not as reliable. For instance, optical disks frequently have data losses due to the inability to record during turbulence or violent motion.

The FDR data can be converted into engineering values at

- CVR/FDR lab at DGCA (HQ). The .has the capability for the decoding of the data of A320, Boeing 737-800 and Boeing 777 fitted with Honeywell recorder.
- CVR/FDR lab at DGCA (HQ) has the capability for the decoding of the data of Boeing 747, A310, A330, A319, A320, A321, B737-300/400 fitted with L-3 Communication recorder.
- Airline operator's facility under the supervision of the Investigator-in-Charge.

1.9.3. Cockpit voice recorder should comply with the requirements of the CAR Section 2 Series I Part VI. However the maintenance manual should be referred for the determining the source of recording on each channel.

The primary purpose of the cockpit voice recorder is to provide the investigation with a record of the communications on the flight deck, the radio communications with the ground controllers as well as a record of the general acoustic environment onboard the aircraft. Experience has shown that significant sounds are often recorded, e.g. switches being actuated, flap and landing gear selectors being operated, aural warning signals, engine noise, cockpit noise associated with changes in airspeed, etc. This type of information is of considerable assistance to the investigation, especially when the precise time of each sound can be determined from the recording. CVR should be removed after the incident. Decoding/analysis of the CVR data of any aircraft fitted with Honeywell and L-3 recorder can be carried out at CVR/FDR lab in DGCA (HQ) or at operator facility under the supervision of Investigator-in-Charge.

1.9.4. If any of the recorders is damaged, attempt should not be made to download data from the damaged recorder. This fact should be immediately brought to the notice of DAS (HQ). Further retrieval of the data should be undertaken in consultation with the Aircraft manufacturer/component manufacturer/Investigation Authority having capability in handling damaged recorders (e.g. NTSB USA, BEA France, AAIB UK etc).

1.9.5. Intimation regarding the sealing of the ATC tape and preserving of the Radar display and data should be immediately made to the concerned ATC unit/Aerodrome-In-Charge. ATS and radar data is useful in ATC incidents, Airprox incidents, take-off landing incidents, level burst, investigation of the incidents to aircraft not equipped with the flight data recorders etc.

1.9.6. The data of the recorders may be used for the simulation of the flight. The benefits of animating data include assimilating complex information and facilitating analysis. In some instances, when investigating complex scenarios, flight animation can lend credibility to findings and subsequent recommendations. Investigators must be very cautious when using flight animations as they may not be able to portray a complex incident event accurately and perhaps lead to misinterpretation. The pitfalls of flight animation include pretty picture syndrome (seeing is believing), fabrication, subjective information, and drawing conclusions without understanding underlying principles. The current limitations of sample rates,

resolution, aircraft architecture (where the parameters are obtained), interpolation issues, and difficult to measure factors such as weather, all affect the objectivity and quality of a flight animation.

1.10 **METALLURGICAL EXAMINATION OF FAILED PARTS**

In general, major component failures result from either

(1) Inadequate design strength, or

(2) Excessive loads imposed upon the component, or

(3) Deterioration of static strength through fatigue or corrosion.

Since all Civil Aircraft are designed and tested to at least the minimum standards of the pertinent national regulations, failures directly attributable to inadequate design strength are remote if the aircraft is operated within its design limitations. Sometimes, however, especially when the aircraft is first introduced, different loadings are experienced from those anticipated and static failures occur within the operating limitations. This seldom occurs, but a certain amount of suspicion should always be directed to failures involving new designs. Most of the component failures attributable to inadequate design strength are usually associated with deficient repair or modification work, or with an improperly manufactured part or component. Since the manufacturer's standards and procedures are supervised by government and industry agents, major manufacturing mistakes are kept to a minimum. Faulty repair or modification work is responsible for a large proportion of failures in this grouping.

In this respect, verification of manufacture approved replacement parts and repair on modification procedures is essential.

The failed metal parts should be sent to Metallurgical examination lab at DGCA (HQ)/NAL Bangalore for determining the possible mode of the failure.

1.11 **FUEL AND OIL EXAMINATION**

For every incident case fuel, engine oil, lubricating oil, hydraulic fluids etc., used in the aircraft are drawn from incident site/aircraft and should be sent to Physical and Chemical Lab (Fuel Lab) of Aircraft Engineering Directorate O/o DGCA, New Delhi for analysis and for further investigation. Testing of fuel, engine oil, lubricating oil and hydraulic fluids are mandatory requirement and essential part of investigation.

For fuels used in aircraft i.e. Aviation Turbine Fuel/ Aviation Gasoline two litres are required for testing. The sample should be collected in a air tight aluminium container. The sample should be collected from aircraft fuel tank and the source from which fuel was filled in the aircraft. In case

of Piston Engine aircraft, aviation gasoline sample should be collected from carburettor, aircraft fuel tank and source from which aviation gasoline was filled in the aircraft. The details of collected sample should be written on the container for reference/testing.

For engine oil used in the aircraft i.e. lubricating oils, hydraulic fluids etc., one litre of fluid is required for testing. The sample should be collected from different parts of engine and unused (fresh) sample should also be collected for comparison of results and should be kept in different non-metallic air tight containers. The details i.e. grade of oils / the source from where it is collected should be written on the container.

The sample collected in a container should be kept in a cool and dry place free from sun light. It should be sent immediately to the Physical and Chemical Laboratory, Aircraft Engineering Directorate, O/o DGCA, New Delhi along with the relevant specification for testing.

1.12 **SYSTEM/COMPONENT EXAMINATION**

An incident may result from the failure of an aircraft system. In such cases the suspected components should be subjected to bench check/performance check/teardown inspection. Investigators should avail themselves of appropriate detailed schematic diagrams or working drawings to determine what components are included in each system, then make every effort to account for all of these components. These diagrams or drawings will also be helpful in analyzing the effect of a malfunctioning component on the remainder of a system. Each system can be broken down into six areas which should assist in accounting for components. These areas are (1) supply, (2) pressure, (3) control, (4) protection, (5) distribution and (6) application. Documentation of components should include nomenclature, manufacturer, part number, serial number and, where provided, the specification number. Some components having the same part number may be used in various places in the same system, especially in the hydraulic and pneumatic systems. Therefore, it will be necessary to obtain a current listing from the operator showing the location of components in the system by serial number. This information may be obtained from the manufacturer.

Documentation of the systems and components should not merely consist in cataloguing or listings. Rather, it should comprise a fairly detailed description of the appearance and condition of the components as well as the position of any movable parts. Complete sentences should be used rather than terse, cryptic phrases. One of the first items to be documented should be the positions of switches and controls in the cockpit. However this information should be cross checked as they may change due post incident activity in the cockpit.

Readings on all available instruments should also be documented. Such documentation, supplemented by photographs, should be accomplished as soon as possible.

The inspection of components should be performed under the supervision of the Investigator-in-Charge at the facility of the airline operator if it is available, or the components should be sent to OEM facility/approved overhaul maintenance facility. While dispatching the component, care should
be taken to avoid any transit damage/ contamination of the component and it should carry Red Tag. The Red Tag should indicate the SR No., Part No, reason for removal, date of removal, component

hours (if applicable) and the contact details. The shop investigation report should give the reason for the failure and any recommendations to prevent its reoccurrence.

1.13 **FIELD INVESTIGATION**

The field kit should contain equipments as per Annexure 3 to this chapter to enable examination of the wreckage, the plotting of impact points and wreckage patterns, parts identification and the recording of observations.

The investigation at the site should begin with an assessment of the aircraft/wreckage with particular attention to ensuring that major structural and flight control surfaces are within the wreckage pattern. In a cursory examination of the site determine any damage to major structural members: wings, vertical and horizontal tail, the engines, propellers and propeller blades, etc. As the initial survey continues, it should be determined whether all flight control surfaces are present as well; ailerons, flaps, elevators, trim tabs, spoilers, etc. As the number of surfaces may be quite extensive, a common practice is to have each member possess a simple diagram of the aircraft (usually obtainable from the operator's or maintenance manual). As each structural section is identified and each flight control surface is found, the appropriate part of the illustration can be "coloured in". Later, all illustrations can be compared to assure the investigation team that the entire aircraft is at the site. The lack of a major section, or control surface may be indicative of a loss prior to impact and the effort to recover the missing parts should begin as soon as possible, hence the need to accomplish this basic inventory early in the investigation.

An assessment of the basic terrain features surrounding the site should be made prior to detailed analysis. If the terrain rises where the impact occurred, the evidence of impact may indicate a steeper angle than would exist if the terrain were level or descending. Similarly, if the area is heavily forested, the degree of impact may be greater than if the area were devoid of large structures or vegetation.

During the survey if any part is found separated, it should be indicated by stake or paint marking on the surface having unique number. Its location should be recorded by using the GPS. Photograph of the object with stake/paint marking should be taken. Based on this wreckage distribution chart should be plotted.

The marks of first impact of the aircraft with the ground should be found. From these and the distribution of the wreckage, it can usually be determined which part of the aircraft struck the ground first. The path of the aircraft may be deduced by careful examination of ground marks, tyre marks on the surface or scars upon trees, shrubs, rocks, poles, power lines, buildings, etc. Wing tips, propellers or landing gear leave tell-tale marks or torn-off parts at points of contact with fixed objects. Ground scars used in conjunction with height of broken trees or bush will assist in establishing the angle and attitude in which the aircraft struck the ground.

Examination of the runway for the tyre marks will help in establishing aquaplaning when the conditions are existing.

1.14 INVESTIGATION OF ATC INCIDENTS BY INVESTIGATION BOARD

Airprox Investigating Board (AIB) will be notified/constituted at all Regional Offices i.e. Delhi, Mumbai, Kolkata, Chennai and Hyderabad. Teams will investigate all Air Traffic incidents in their respective regions. Investigating Team will comprise of following officers:

1. Director Air Safety/Regional Controller of Air Safety/his representative	Convener
2. DGM (S&P) of Airports Authority of India	Member Secretary
3. Representative of DGM level from Communication Department	Member
4. Representative of Aviation Safety Directorate of AAI	Member
5. Representative of Operations Department of concerned airlines (in case there is involvement of any pilot of the airlines), if considered necessary	Member

- The Investigating Board may opt any other member if felt necessary. In case Air Force pilots or Air Force ATCO are a party to these incidents, matter be referred to DGCA, who will arrange participation of IAF representative in the investigating team.

- Investigating Team will review all evidence like transcript, DFDR Read out (whenever required), statements of all concerned etc.

- Airprox Investigating Board if so desires will seek clarification from ATCO, CNS Personnel, pilots or any other Airport personnel and may verify tape transcript if so desired.

- After due deliberation by Investigation Team, an Investigation Report will be made by Member Secretary in coordination with the Convener and other Members. Investigation Report shall include a summary, all relevant information in chronological sequence, findings, cause and safety recommendations for the purpose of prevention of similar incidents.

  In addition following information should be submitted as appendices to the report:

  a) Statements of personnel involved.

  b) All relevant tape transcript.

  c) Meteorological reports.

d) Flight Progress strip and Radar data.

e) Technical status of facilities.

f) Any other relevant documents.

- The Investigation Report has to be signed by all the Members of the Investigating Team. In case any Member differs with the contents of the Report he may give his dissent in writing to the convener.

- Investigation report is to be treated as "Confidential".

- Convener will forward two copies of Investigation Report to Director Air Safety (DGCA Headquarters) including dissent, if any, and his views on the same. A copy of the Investigation Report will also be forwarded to ED (ATM) and ED (AS) of Airports Authority of India.

- Investigation Report will be finalized within 4 weeks of occurrence. In case of any likely delay, DGCA will be kept informed with the reasons for such delay.

Acceptance of Report:

Report will be accepted by Director Air Safety (HQ) in consultation with ED (ATM) and ED (AS). They will meet twice in a month to review all ATS Investigation Reports. They may add, delete or amend any recommendation/cause if considered necessary. They may also decide to send back Investigation Report for reinvestigation for reasons such as inadequate investigation, lack of factual data/evidence to support

1.15 **INVESTIGATION OF GROUND INCIDENTS**

Vehicular incident not involving aircraft will be investigated by a team consisting of representative from involved airline flight safety department & GSD department / Airside department of airport operator. The report is to be submitted to Regional Air Safety Office for final acceptance. DGCA may at its discretion order for separate enquiry of any incident.

Incident involving aircrafts, serious ground incidents, Vehicular incidents, safety related occurrences involving failure of airport lighting system, equipment and other infrastructure will be investigated by Regional Air Safety Office of DGCA.

1.16 **DATA COLLECTION, ANALYSIS AND SHARING**

Daily occurrences data is received from Air Safety Regional Offices/ Airline Operators/Airports Authority/Aerodrome operators. This data is entered in a daily incident data reporting format and put up to JDG through DAS for decision on the occurrences. After decision on the occurrences the information is forwarded to Regional Air Safety Offices/Operator through mail. ECCAIRS will be used by Air Safety Regional offices to report occurrences to DGCA HQ. Air Safety Regional Offices will maintain the data for incidents/ occurences/ wildlife strike and data will be submitted to DGCA HQ every three months. Further all regional offices will also maintain records for the recommendations made in PIB/AIB report and review the action taken with the operator every quarterly. Occurrence category flow chart is given in Annex "1". The annual analysis of incident database will be shared with the operators during the NAST meeting and internally with the domain directorates. In addition specific analysis carried out by Air Safety Directorate will be shared with the operators during the NAST meeting and will also be published on DGCA website.

1.17 **HUMAN FACTOR IN INVESTIGATION**

Since the beginning of aviation, human error has been recognized as a major factor in accidents and incidents. Indeed, one of aviation's biggest challenges has been — and will continue to be — human error avoidance and control. Traditionally, human error in aviation has been closely related to operational personnel, such as pilots, controllers, mechanics, dispatchers, etc. Contemporary safety views argue for a broadened perspective which focuses on safety deficiencies in the system rather than in individual performance. Evidence provided by analysis from this perspective has allowed the identification of managerial deficiencies at all operating stages of the aviation system as important contributing factors to accidents and incidents.

The investigation of major catastrophes in large-scale, high-technology systems has revealed these accidents to have been caused by a combination of many factors, whose origins could be found in the lack of Human Factors considerations during the design and operating stages of the system rather than in operational personnel error.

Human Factors issues are involved in most aviation occurrences. Thus, to advance aviation safety, we must improve our ability to identify the involvement of Human Factors issues in accidents and incidents. By doing so we can learn more from these experiences and implement new and better measures to prevent repetitive occurrences. We cannot prevent humans from making errors, but we can certainly reduce the frequency and minimize the consequences.

Accident investigation reports usually depict clearly what happened and when, but in too many instances they stop short of fully explaining how and why the accidents occurred. Attempts to identify, analyse, and understand the underlying problems that led to the breakdowns in human performance and thus to the accidents are sometimes inconsistent. By stating that a pilot did not follow the rules implies that the rules are well-founded, safe, and appropriate. Hence, the investigation reports often limit conclusions to phrases such as "pilot error", "failed to see and avoid", "improper use of controls", or "failed to observe and adhere to established standard

operating procedures (SOPs).” This narrow focus is but one of many obstacles to the effective investigation of Human Factors.

The investigation of Human Factors in aircraft accidents and incidents should be an integral part of the entire investigation and its resulting report. Humans do not act alone; they are but one element of a complex system. Often, the human is the last barrier that stops the sequence of events from causing an accident. However, when events combine and interact together to cause a catastrophe, the investigation authority must ensure that all elements of the complex system are investigated to understand why the accident happened. A systematic search for the “Why” is not intended to pinpoint a single cause, nor is it intended to assign blame or liability, nor even to excuse human error. Searching for the “Why” helps identify the underlying deficiencies that might cause other incidents or another accident to happen.

During investigation to identify the human performance following factors should be reviewed and identified:

- human error
- fatigue
- medication, alcohol and Drugs
- medical histories
- training records
- workload
- equipment design
- Work environment

Identification of human fatigue

Initial Screening Questions

If any of the following is true, proceed with the detailed methodology:

- Does the person 72-hour history suggest little sleep, or less sleep than usual?
- Did the accident occur during times of reduced alertness (such as 0100 to 0600)-Circadian factor?
- Had the person been awake for a long time at the time of the accident?
- Does the evidence suggest that the accident was a result of inaction or inattention on the part of the person?

Detailed Methodology

It is important to establish two factors before concluding that person fatigue contributed to an accident. First, determine whether the person was susceptible based on sleep lengths, sleep disturbances, circadian factors, time awake, and/or medical issues. Second, if it is determined that the person was likely experiencing excessive fatigue, evaluate information concerning the

person's performance, behaviours, and appearance at the time of the accident to determine whether they were consistent with the effects of fatigue.
A finding that the person was susceptible to the development of a fatigued state in the absence of performance or behaviours consistent with fatigue should not be used to support person fatigue as a probable cause or contributing factor in the accident, but may still be an important safety issue to be addressed in the accident report.

Following checklist may be utilised for determining the fatigue an interview with the family members/ hotel staff in case of crew will also give the useful inputs. If applicable, have the person evaluated by a physician who specializes in sleep medicine.

S.No	Probable questions for the person	Input from the person
A	**Sleep Length**	
1.	Describe your typical sleep pattern of when you go to bed, awaken, and how much sleep you get during days off.	
2.	What time did you fall sleep the night before the accident? What time did you wake up? What was the quality of your sleep? (Repeat for two nights before, three nights before, etc.)	
3.	Did you take any naps? When, where, for how long, and why?	
4.	Use receipts, cell phone records, work schedules, log books, alarm clock setting, or other records to help complete the operator's sleep/activity schedule before the accident.	
B	**Fragmented/Disturbed Sleep**	
5.	Use sleep/wake information collected in "Sleep Length" to examine the lengths and patterns of sleep episodes for split sleeps or daytime sleep.	
6.	Ask person o Are there factors in your environment (e.g., noise, light, phone calls, etc.) that interfere with your sleep? o Was your sleep pattern different or disrupted in the days leading to the accident?	
C	**Time awake**	
7.	Determine how long the person had been awake at the time of the accident, using interviews or records to estimate wake up time	

	from most recent significant sleep before the accident.	
D	**Additional Suggestions**	
8.	Check work records and records of previous accidents/incidents for evidence of prior falling asleep.	
9.	Determine what kind of training person has received regarding fatigue management.	
10.	Review person's environment and tasks for unusual conditions on the accident day that would have depressive effect, like low lighting, operational delays, or boredom.	
E	**Operator Performance**	
11.	Did the person overlook or skip tasks or parts of tasks?	
12.	Did person focus on one task to the exclusion of more important information?	
13.	Was there evidence of delayed responses to stimuli or unresponsiveness?	
14.	Was there evidence of impaired decision-making or an inability to adapt behaviour to accommodate new information?	
F	**Operator Behaviour and Appearance**	
15.	Determine whether the person's appearance or behaviours before the accident were suggestive of sleepiness/fatigue, as based on witness interviews, operator report of being tired, audio or video records of the persons's behaviour.	

1.18 VOLUNTARY REPORTING SYSTEM AND DATABASE

1.18.1 Rule 19 of the Aircraft (Investigation of Accident and Incident) Rules, 2017 provides guidelines for establishing a voluntary incident reporting procedure to facilitate collection of information on actual or potential safety deficiencies that may not be captured by mandatory incident reporting system. The voluntary reporting system shall be non punitive and afford protection to the source of information.

Detailed procedure has been laid down in Aeronautical Information Circular (AIC) 03/2015.

1.18.2 Processing of voluntary report:

The voluntary reporting system of India pays particular attention to the need to protect the reporter's identity when processing all reports. Every report will be read and validated by the coordinator/ alternate coordinator. They may contact the reporter to make sure he understands the nature and circumstances of the occurrences / hazard reported and/or to obtain the necessary additional information and clarification.

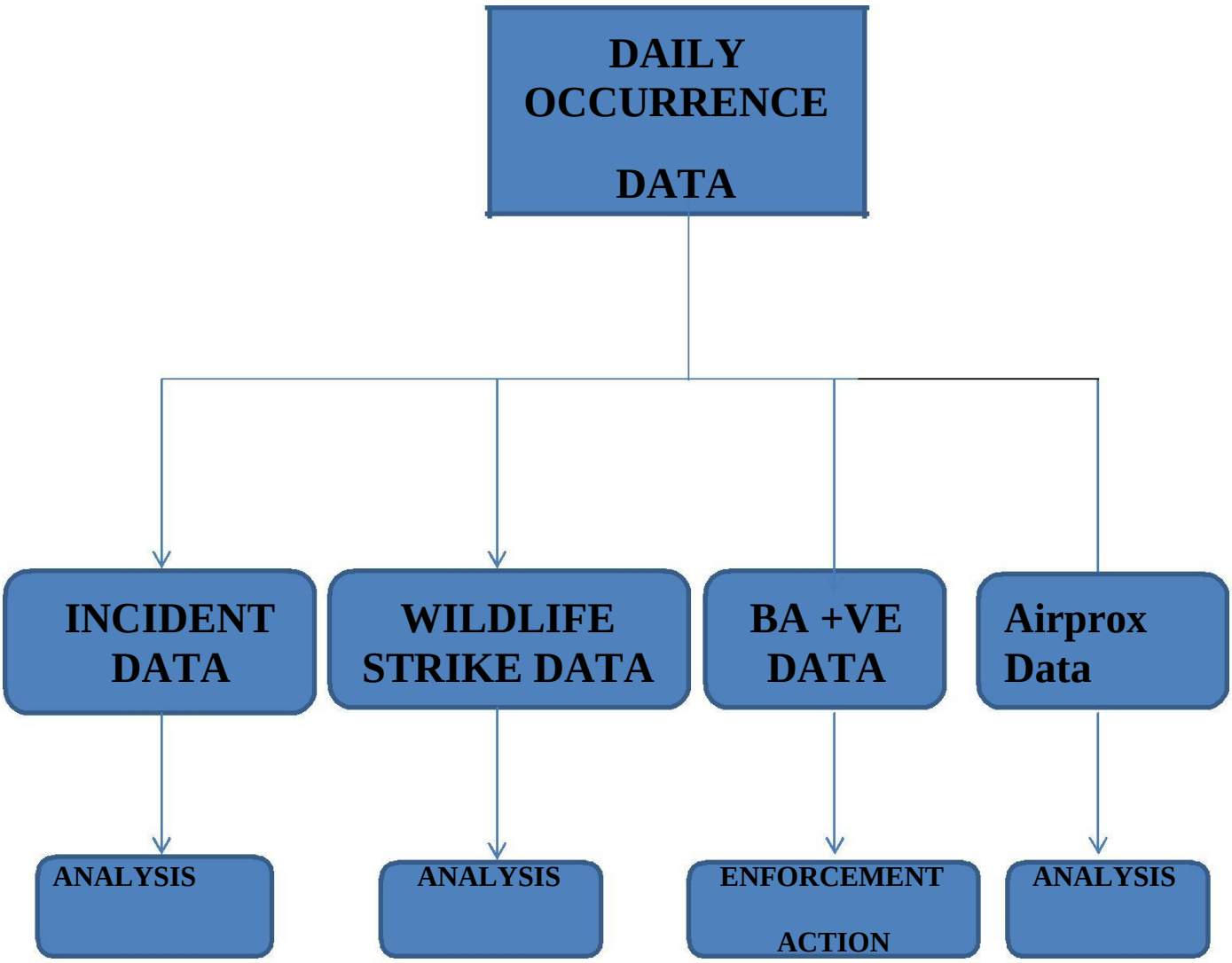
When the coordinator/ alternate coordinator is satisfied that the information obtained is complete and coherent, he will de-identify the information and enter the data into the voluntary reporting system database (VRSD) and the original report received will be destroyed. Should there be a need to seek inputs from any third party, only the de-identified data will be used.

The coordinator/ alternate coordinator will endeavour to complete the processing within ten (10) working days if additional information is not needed. In cases where the coordinator/ alternate coordinator needs to discuss with the reporter or consult a third party, more time may be needed.

Relevant de-identified reports and extracts may be shared with the aviation community through periodic publication so that all can learn from the experiences.

If the content of Voluntary report suggests a situation or condition that poses and immediate or urgent threat to aviation safety, the report will be handled with priority and referred, after de-identification, to the relevant organizations as soon as possible to enable them to take the necessary safety actions

Annex-1


DAILY OCCURRENCE DATA
INCIDENT DATA
WILDLIFE STRIKE DATA
BA +VE DATA
Airprox Data
ANALYSIS
ANALYSIS
ENFORCEMENT ACTION
ANALYSIS

Annex-2

Preliminary report on Incident/ Serious Incident to (Type)…….. (Registration)…… at/ on/ near…… (Place)……. On date…….

1. Aircraft Type

   Model
   Nationality
   Registration

2. Owner
3. Operator or hirer
4. Date of Incident/ Serious Incident
5. Time (GMT)
6. Last point of departure
7. Point of intended landing
8. Geographical location of site of Incident/ Serious Incident (LAT/ LONG)
9. Type of Operation
10. Phase of Operation
11. Type of Incident/ Serious Incident
12. Injuries to Persons

Injuries	**Crew**	**Passengers**	**others**
Fatal			
Serious			
Minor			
None			

13. Damage to aircraft
14. Brief description of the Incident/ Serious Incident

15. Progress of Investigation and significant facts established during the investigation, particularly any lack of adequate piloting proficiency of any unwarranted disregards of Safety requirement by the pilot.

16. Precautionary action taken or under consideration.

Signature of Investigator

Annex-3

INVESTIGATION FIELD KIT LIST

GENERAL

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

SURVEY EQUIPMENT

- Large-scale maps of the accident area.
- Magnetic compass
- Global Positioning System receiver
- Laser surveying equipment
- Clinometer
- Navigational computer, protractor and dividers
- Measuring tape, at least 20 m long, and a 30-cm-long ruler Reel of cord, 50 to 300 m long.

MARKING EQUIPMENT

- Labels, tie-on tags and adhesive tags.
- Flag markers and stakes.
- Writing material, graph paper, waterproof notebooks and clipboards.
- Pens, pencils, grease pencils, indelible marking crayons and permanent markers.

TOOLS AND SAMPLING MATERIALS

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

- Inspection mirror
- Magnifying glass (10 x)
- Syphons
- Plastic bags (assorted) and plastic sheets
- Chemical tape

SAFETY ITEMS

- First-aid kit.
- Heavy gloves, protective overalls and other protective equipment, such as hard hats, goggles and face masks.
- Protective clothing and equipment to protect against biological hazards.
- Safety Shoes and Gum boots
- Knee guards
- Hearing protection (air muffs).

MISCELLANEOUS ITEMS

- Model aircraft.
- Photographic equipment for colour prints/slides (film, zoom lens, macro lens, wide-angle lens and electronic flash unit).
- Video camera
- Binoculars with integrated compass and distance measuring.
- Stereo IC Recorder, spare cassettes and batteries.
- Portable means of on-site communication, e.g. cellular telephone or walkie-talkie, spare batteries.
- Reel of cords
- Computer (Laptops).

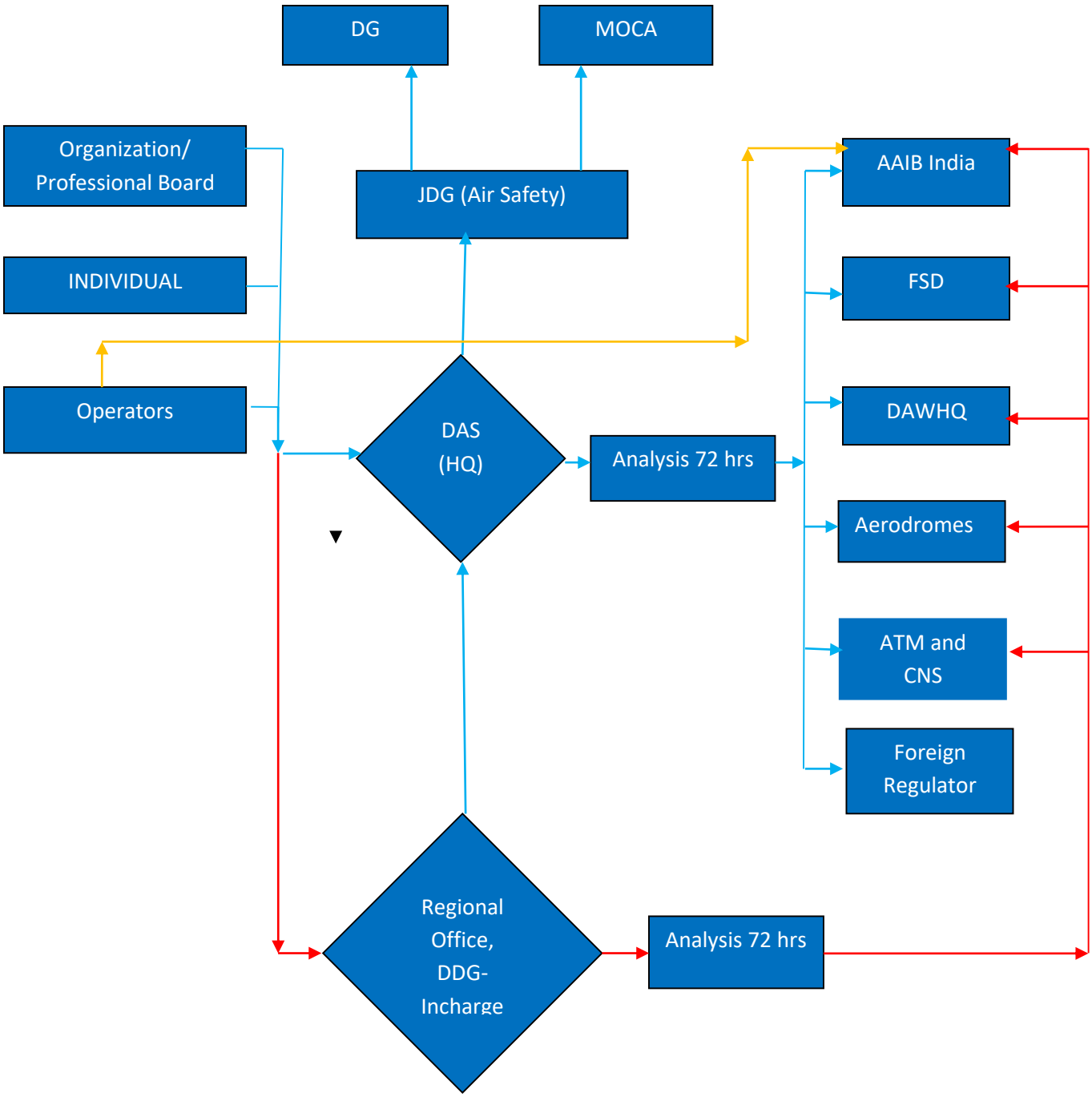
Annex-4

NOTIFICATION

1 2	For accidents the identifying abbreviation ACCID, for serious incidents INCID Manufacturer Serial No. Model a)Nationality Registration marks	
3	Name of owner, operator and hirer, if any, of the aircraft	
4	Name of the pilot-in-command, and nationality of crew and passengers	
5 6 7 8 9 10 11 12	Date and time (local time or UTC) of the accident or serious incident Last point of departure and point of intended landing of the aircraft Position of the aircraft with reference to some easily defined geographical point and latitude and longitude Number of crew and passengers; aboard, killed and seriously injured; others, killed and seriously injured; Description of the accident or serious incident and the extent of damage to the aircraft so far as is known; An indication to what extent the investigation will be conducted or is proposed to be delegated by the State of Occurrence Physical characteristics of the accident or serious incident area, as well as an indication of access difficulties or special requirements to reach the site; 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;	
13	Presence and description of dangerous goods on board the aircraft.	

Annex-5

MOR and Hazard Reports, Reporting and sharing of Information



CHAPTER-2

OFF ROSTERING OF AVIATION PERSONNEL FOR THE PURPOSE OF INVESTIGATION.

2.1 INTRODUCTION

For the purpose of investigation it is essential to interview or obtain the account of Pilot who flew the involved aircraft, the aircraft maintenance engineer who performed inspection or maintenance prior to the occurrence flight or maintenance at any point of time which has bearing on the investigation. .To make them available for investigation and to allow for necessary corrective action before being allowed to be rostered for duty, Director General of Civil Aviation based on preliminary report of accident/incident at times order pilots/AME not to exercise the privileges of their licence pending finalization of investigation.

2.2 PROCEDURE FOR OFF ROSTERING

The procedure to be followed for off rostering of the personnel is given below:

1. In case the preliminary investigation reveals issues of pilot/ATCO proficiency/Aerodrome operator/Ground Handler or perfunctory inspection by AME. The officer investigating the incident/Serious incident or the Head of the concerned regional office shall make such communication in writing to DAS (HQ). DAS (HQ) in consultation with DDG/JDG shall issue orders in writing quoting the relevant proviso of Regulations to pilots/engineers not to exercise the privileges of their licence.

2. Action in case of accidents will be as per the AIC 19 of 1985.

3. Initially these orders will be issued for a of period up 8 weeks in case of incident and a period of up to of 12 weeks in case of serious incident.

4. All regional offices will forward a list to Headquarters every month giving details of incidents where pilots/engineers were off rostered.

5. A monthly review shall be carried out by Director Air Safety (HQ) and same shall be put up to JDG/DDG.

6. It must be ensured that whenever pilots or engineers are debarred to exercise the privileges of their licence, the investigation of the incidents are promptly carried out. In case of incident it should be completed within 4 weeks.

7. If due to any reason this time schedule cannot be maintained, Officer investigating the serious/incident or the head of the concerned regional office shall put up a case to DAS (HQ) for taking necessary direction from DDG/JDG in the matter.

8. Release of the personnel involved in accident/Serious incident being investigated by AAIB for normal duties, shall be in consultation with the AAIB.

CHAPTER-3

ACCIDENT/ SERIOUS INCIDENT INVESTIGATION

3.1 PARTICIPATION OF DGCA OFFICERS IN GO TEAM

The Go Team is a group of investigators on the recommendation of AAIB who are assigned to accident/serious incident investigations. Regional officer of Air Safety Directorate may be used as the Go Team by AAIB after issuing a written authorization in accordance with Rule 7of the Aircraft (Investigation of Accidents and Incidents) Rules 2017.

3.2 NOTIFICATION AND INITIAL RESPONSE

Early notification is essential to initiate and organise the investigation. Initial information concerning the facts and circumstances of the occurrence will often be incomplete and erroneous. For this reason, early factual information transmitted for alerting purposes must be handled with considerable discretion. Parties notified are to be cautioned about the preliminary nature of the data.

3.2.1 HEADQUARTERS RESPONSIBILITIES AND PROCEDURES

3.2.1.1 **Domestic Investigations**

Initial notification of aviation accident/incident will be received by the Director Air Safety (HQ). On the requirement of AAIB the Director Air Safety (HQ) will launch a Go Team in consultation with the DG/JDG/DDG.

Following a decision to dispatch the Go Team, the DAS (HQ) will:

(1) Notify DG, JS (MoCA), AAIB and the Go Team Member for preliminary circumstances of the accident.

(2) Obtain the Go Team Member's decision regarding travel, ascertain if he/she will accompany the team, and notify the In-charge of the Team.

3.2.1.2 **International Investigations**

The DAS (HQ) will advice the DG/JDG/DDG.

3.2.2 REGIONAL OFFICE RESPONSIBILITIES AND PROCEDURES

Regional offices will notify headquarters (JDG, DDG, DAS HQ and DDAS) whenever an accident (or incident with serious implications) occurs that involves the following:

- Air carrier, commuter, NSOP, Private Operators and other operators
- Public figures or officials with widespread recognition or prominence,
- Fatal midair collisions or collisions involving ATC, or
- Matters of potentially high public interest.

3.2.2.1 **Regional office responsibilities related to a Go Team Launch**

Air Safety Regional Offices are responsible for implementing notification procedures in their geographic areas of jurisdiction. These offices will ensure that specific personnel are designated to be on-call. The Regional Office with geographic jurisdiction for the accident/serious incident will typically provide at least one investigator to travel immediately to the site and perform such duties as authorized by AAIB in writing. After working hour or during weekend telephonic authorization will be accepted followed by written authorization from AAIB.

Stakedown Guidelines

Regional Office personnel assigned to the initial stakedown of an accident/serious incident have important duties that contribute to the overall success of the investigation. Those personnel include investigators dispatched to the scene, as well as those handling administrative affairs. Personnel assigned to respond to the accident scene are obligated to reach the scene as quickly and as safely as possible and to remain at the scene until properly relieved by AAIB.

3.2.3 SAFETY AT ACCIDENT SITE

Aircraft wreckage sites may expose investigators to certain risks, including biohazards, airborne hazards, adverse terrain and adverse climatic conditions. The Air Safety officer will coordinate with the local authorities at accident site (Local police, National Guard, or fire and rescue), if present, to determine hazards at the accident site and safety resources available to the investigative staff. Personnel involved in the recovery, examination and documentation of wreckage may be exposed to physical hazards from such things as hazardous cargo, flammable or toxic materials and vapors, sharp or heavy objects, pressurized equipment and disease. The IIC and/or a designated air safety officer will be responsible for conducting a risk assessment of the accident site, which will identify possible hazards, and determine the level of risk (high,

medium, low) at the work site. An environmental risk assessment can be conducted while en route and a more detailed assessment accomplished following the initial visit to the accident site.

The safety officer will then develop countermeasures to identified risks and ensure that the appropriate countermeasures are applied at the accident site. The safety officer or the on-scene local authority will conduct daily safety briefings with all individuals who are working at the accident site. Throughout the on-scene phase of the investigation, the IIC and the group chairmen will monitor everyone to exercise good judgment, use necessary protective devices and clothing and use extreme caution when working in and around the wreckage.

It is the job of the IIC and/or a designated air safety officer to ensure that hazardous material is identified at the accident site, and decisions to either remove the material or reduce the risk of contamination or injury must be made before the investigative team is permitted to enter the site. Once such actions have been taken, work at the site will be permitted. All team members should be advised to be on the alert for any undeclared hazardous material and, if such material is found, should immediately notify a group leader or the IIC so that appropriate measures can be taken.

Go team should equipped with bio hazard suit, face mask, gloves and air respirator etc during onsite investigation.

3.2.4 Precautions to be taken at accident site

Investigators should be aware of the potential hazards at an accident site and what precautions to take. The investigator-in-charge should know about potential hazards and should establish safety practices.

Accident hazards may include downed power lines, leaking natural gas, propane, heating oil or other flammable liquids or gases, dangerous goods, biological hazards or buildings that have become structurally unsound from fire or impact damage etc.

Precautions to be taken for:

A) Fire:

There is a high fire risk associated with most aircraft wreckage, and precautions should be taken to ensure the safety of all personnel as well as to protect the wreckage. Fire-fighting equipment should be readily available while a high fire risk remains, and there should be "No Smoking" permitted within the guarded area. Aircraft batteries should be disconnected as soon as possible and if aircraft fuel tanks are still intact, they should be emptied at earliest opportunity. The quantity of fuel removed from each tank should be measured and recorded. If there has been a large spillage of fuel, the investigators must control any activity that could increase the possibility of ignition, such as the moving of parts of the wreckage. Care should be exercised to control possible sources of ignition, such as static electricity. Likewise, the operation of Radio or

Electrical equipment or the use of salvage equipment should be avoided until the fire risk has been assessed and eliminated.

B) Dangerous Cargo:

The accident investigation authority should ascertain whether or not dangerous goods were carried aboard the aircraft. A preliminary check of the freight manifest and an inquiry to the operator should resolve this question. Dangerous goods may include such items as radioactive consignments, explosives, ammunition, chemicals etc.

If such materials are carried, the same should be removed by qualified personnel before any harm is caused to persons working in close proximity to the wreckage. No examination of the wreckage should be initiated until the level of radiation in case of radioactive substance has been measured and the site declared safe for examination.

Accidents involving aerial spraying have the potential to expose investigators to hazardous materials in the form of pesticides and insecticides. With a few exceptions, these chemicals are toxic, even in small quantities. At the accident site, personal protective equipment must be used, and face masks equipped with appropriate filters should be worn.

Wreckage hazards:

The handling of wreckage is inherently hazardous and requires the use of protective clothing and appropriate equipment. Wreckage may shift, roll over or be suspended in trees and may need to be secured. The moving of large parts of wreckage should be supervised by the investigators and carried out by professional operators using appropriate equipment. This applies in particular when cranes are used. In such instances it is advisable for investigators to remain upwind of the wreckage so as to limit their exposure to soot, dust and other airborne substances. If, for some reason, a part of the wreckage is left suspended, no work should take place underneath it or nearby, in case the cables and chains should fail or the wreckage shift.

There are many hazards specific to a wreckage such as: pressure containers, flares, generators and accumulators. Pressure containers include oxygen bottles, evacuation slide inflation bottles, fire extinguishers and protective breathing equipment. Solid state chemical oxygen generators can reach temperatures of 400^0 Celsius when they are activated. All such items should be rendered safe and removed from the site.

Other hazards include:

Tires. Tires may be damaged on impact or in a hard landing and thus could explode at any time. Tires should be approached from the front or the rear and should be deflated as soon as possible. Before deflating tire pressure shall be measured and recorded.

Propellers. Some propellers have feathering springs, and if the hub is cracked, it can come apart forcefully. Investigators should not attempt to take apart a propeller assembly. Disassembly and inspection is best done at a properly equipped facility.

Batteries: When disconnecting and removing the batteries care should be taken because, the sparks could ignite spilled fuel and other flammable materials. Also, battery acid is extremely corrosive.

Flammable liquids and gases. Flammable liquids and gases can ignite or explode. The inhalation of fuel vapours or the direct contact of fuel with the skin is harmful. The aircraft should be defuelled and the amount of fuel removed should be recorded. Smoking should not be permitted at the accident site.

Firearms/ammunition. Such items might be aboard the aircraft and should be removed by experts.

Depleted uranium. This material is sometimes used in counter-balance weights in larger aircraft. It can be hazardous if the outer protective coating is breached.

Radioactive materials. Such materials may be carried as cargo or used in aircraft components, such as in the engine ice-detection system of some aircraft.

Soot and insulation materials. Soot and insulation materials are hazardous in confined spaces, such as the cabin or cargo bins. Face masks and eye protection should be worn when working in such spaces.

Biological hazards

Accident investigators are at risk of exposure to biological hazards, including blood-borne pathogens such as the human immunodeficiency virus (HIV) and the hepatitis B virus (HBV). Biological hazards may be present in the cockpit and cabin wreckage as well as on the ground where bodies and survivors have lain. Since it is not possible to readily identify contaminated blood and other commingled bodily fluids, it is prudent to take precautions when working around and in the wreckage, when handling the wreckage at the site and when performing off-site examinations and tests on wreckage parts.

Precautions must be taken to prevent the viruses from entering mucous membranes (such as the eyes, nose and mouth) or non-intact skin such as open cuts or rashes. The accident site may contain liquid, semi-liquid and dried blood, other bodily fluids, fragmented bones, tissues and internal organs. In the dried state, particles of these substances may become airborne and come into contact with the unprotected eyes, nose and mouth.

General guidelines on personal protective equipment are contained in the Appendix 1 to this chapter. A kit containing personal protective equipment should be made available to each investigator. The kit should include a full-cover protective suit, several pairs of latex gloves, work gloves, face masks, goggles, shoe covers and protective boots, and disinfection chemicals.

Procedures to be followed at the accident site should include an initial survey for biological hazards in the form of visible blood or other bodily fluids. When there are serious injuries or fatalities, there will often be bodily fluids remaining after the dead and injured are removed. Areas contaminated by spilled blood or bodily fluids should be identified and roped off and have only one single point of entry/exit. Only persons using personal protective equipment should be allowed access to the contaminated areas. Any components that are removed from the accident site for examination and testing should be treated with the same care as exercised at the accident site.

While wearing personal protective equipment in the biological hazard area, investigators should not eat, drink or smoke; apply cosmetics, lip balm or sun block; touch the face, eyes, nose or mouth; or handle contact lenses.

Biological hazard waste, such as clothing and contaminated personal protective equipment, should be disposed of. Investigators should carefully pull off the outer work gloves first, then peel off the latex gloves and drop both pairs into a biological hazard disposal bag. Contaminated personal protective equipment should never be reused. Exposed skin should be wiped immediately with moist towelettes, then washed with soap and water

3.2.5 INITIAL NOTIFICATION AND STATUS REPORTS

While the Go Team is conducting the on-scene phase of the investigation, an official-use-only initial notification and subsequent status reports will be submitted to DG and MoCA. An initial notification is provided by the DAS (HQ) and the DDAS (HQ) and is usually distributed within a day of the launch of the Go Team. The initial notification briefly describes the circumstances of the accident and lists the members of the Go Team and the parties. Status reports on the progress of the investigation are issued to notify the DG/MoCA when significant new information is obtained about an accident under investigation. A status report might be issued upon the return of the investigation team from the site but only if new information is obtained following the distribution of the initial notification and subsequent status reports. If the results are potentially significant, status reports will be issued to disseminate the results of teardowns, records examinations and interviews.

3.2.6. **Headquarters Briefing**

The Air Safety Personal is required to brief DAS (HQ)/DDAS (HQ) on a daily basis. These briefings provide headquarters with the opportunity to 1) obtain an update of the recent findings 2) assess the progress of the investigation, 3) communicate relevant technical information to the on-scene team, and 4) provide assistance to the IIC/ as needed. The daily briefing with headquarters are independent of any briefings between group leader and their respective members.

3.3 POST-ON-SCENE ACTIVITIES

3.3.1 ADMINISTRATIVE TASKS UPON RETURN TO HEADQUARTERS

Once the Air Safety Personal returns to his headquarter, he or she will check to make sure the investigation was entered into the DGCA online Accident/Incident Reporting System.

3.4 REOPENING OF INVESTIGATION

Where it appears to Director General that any new and material evidence has become available after completion of the investigation under Rule 13 (1) of the Aircraft (Investigation of Accidents and Incidents) Rules 2017, as the case may be, it may order/direct the reopening of the investigation.

After reopening of the investigation, facts will be analysed by Director Air Safety (HQ) in consultation with Investigator-in-Charge or as directed by Director General.

Appendix 1

PERSONAL PROTECTIVE EQUIPMENT AGAINST BIOLOGICAL HAZARDS

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

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.

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.

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.

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.

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.

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

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.

Biological hazard disposal bags. Biological hazard disposal bags must be used for disposal of contaminated personal protective equipment. For transport, the disposed material should be double bagged

CHAPTER-4

ACCIDENT PREVENTION

4.1 INTRODUCTION

- DGCA has approved a number of organizations under various categories under Rule 133B. These organizations are engaged in design, manufacture, maintenance, testing, fuel storage and distribution, and training. It is DGCA‟s responsibility that these organizations, once approved, continue to function in compliance with the approval standards and are not allowed to degrade from their initial level of approval. To fulfil this responsibility, surveillance/ audit of such organizations is required to be carried out by Air Safety officials.

- **Surveillance** is inspection of an operator or an organization to be carried out at regularly by the Air Safety offices, to ensure adherence to the laid down requirements by them for safe operations. By definition, Surveillance is the monitoring of behaviour. Systems surveillance is the process of monitoring the behaviour of people, objects or processes within systems, for conformity to expected or desired norms. Although the word surveillance in French literally means "watching over", the term is often used for all forms of observation or monitoring. The word surveillance is commonly used to describe observation from a distance. In the present context, surveillance may be defined as an oversight carried out by DGCA and includes Planned Audits and Spot Checks. It is the examination and testing of systems including sampling of products, and gathering of evidence, data, information and intelligence.

- **Special Audits** are based on safety intelligence and are planned in addition to Scheduled Audits. Special Audits do not necessarily mean that the Auditee is unfit to remain in the aviation industry; however, there may be reasons for the additional scrutiny due to recommendations emanating from the accident reports or there exists repeated violations of safety norms by the operators/organizations.

4.2 PROCEDURE

The process of surveillance will consist of the following elements:

- Planning

- Preparation

- Conduct

- Reporting

- Finalization

- Follow-up Monitoring and improvement

4.2.1 **PLANNING**

(i) It is desired that all the aviation activities of the operator/ organization are subjected to surveillance inspection regularly. A comprehensive surveillance programme has been prepared with inputs from all Regional Air Safety offices. It has been attempted that all areas of operator/organization are covered by surveillance. Officers of Air Safety Directorate are required to keep a note of their assignments and ensure that the assignments are fully discharged.

(ii) Regional Air Safety offices shall prepare an organization-wise calendar of surveillance activity and provide the same to the organization.

4.2.2 **PREPARATION**

It is imperative that the surveillance is carried out by each officer of Regional Air Safety offices or a team of two Air Safety Officials.

(i) The following should be studied:

- Internal audit report of the concerned activity;
- Company operations manual.
- Company Flight Safety Manual;
- MOE, MCM, Maintenance Programme etc. as required;
- Previous surveillance findings and action taken information. This may be in the form of completed/closed audit finding forms or file correspondence.

(ii) A representative from the organisation/operator i.e. Operations manager/Flight Safety personnel may be associated with the inspection. This is done to enable the organization to provide any clarifications on the spot and to ensure that the findings are immediately known to the organization.

4.2.3 **CONDUCT OF SURVEILLANCE**

(i) The surveillance should be objective, without any bias, with a view to detect any weakness and deficiency in the practice and procedure followed by the

organisation in the light of the requirements laid down by DGCA/ manufacturer and should be used as a tool for enhancing safety standards.

(ii) Prior to commencement of the surveillance, a briefing meeting be held, explaining the purpose and scope of the surveillance. Open issues of the previous audits, organization's internal audit findings and corrective actions may also be discussed during the briefing.

(iii) As the officers are always in the public eye, they are expected to exercise good judgment and professional behaviour at all times while on and off duty. It is imperative that all the officers be sensitive to the responsibilities and demands of their positions and be objective and impartial while performing their duties.

Officers must conduct themselves while on-duty or off-duty in a manner that will not cause the public to question their reliability and trust worthiness in carrying out their responsibilities.

To facilitate comprehensive surveillance / audit, a compilation of checklists covering all areas engineering, operations, commercial, security etc of Organizations / operators in different Categories by DGCA have been supplied to all officers of Air Safety Directorate. This checklist shall be used while carrying out surveillance / audit, as per the programme drawn out so that the surveillance is comprehensive and meaningful. The contents of checklists are to be treated as general guidance of DGCA requiring adherence by approved organizations. The check lists may be suitably amended by the Air Safety Office to suit the requirements of individual organizations depending upon the nature of aviation activity carried out by them.

4.2.4 REPORTING

On completion of the surveillance, the deficiencies observed by the inspecting officers should be listed and discussed in a debriefing meeting with Accountable Manager/ Operations In-charge/Chief of Air Safety. After final discussion, deficiencies noticed shall be listed on Deficiency.

4.2.5 DEFICIENCY REPORTING FORM

For every deficiency observed, the organisation is required to submit target date for making good the deficiency on the DRF. If the organisation has already taken necessary rectification action to the satisfaction of Air Safety Office before the de-briefing meeting the same need not be listed in the DRF. The Air Safety Office may agree to the time frame depending upon the gravity of the deficiency in relation to safety and return the Form with necessary comments to the organization. It shall be binding on the organisation to adhere to the time frame fixed by the Air Safety Office. After completion of the corrective action the

organisation shall resubmit DRF after filling up the relevant column. The findings may be classified as Level l and Level 2. In case serious deficiencies i.e. Level 1 are noticed, the Air Safety Office should immediately forward the same to DGCA HQ for initiating action against the organisation. Completed DRF, after compliance of corrective action shall be submitted to Headquarters in soft copy.

4.2.6 COLLECTING EVIDENCE

Evidence is collected during the conduct of surveillance with relevant information recorded in the Surveillance Worksheet to support the final findings. It should be obtained with the knowledge of the Auditee and verified for correctness and completeness. Evidence includes:

- Oral evidence – record date, time, details of conversation on Audit Worksheet;
- Notes taken during an audit;
- Documents sighted during the audit – reference the document and page numbers;
- Copies of documents and records – verified where necessary for correctness and completeness.
- Photographs (record time, date, place and photographer on worksheet);
- Video recordings (record time, date, place and video operator on worksheet); and
- Physical evidence such as original document, records or defective parts.
- Surveillance records must be kept in a clear manner and provide a chronological history of surveillance activities and events.

4.2.7 DGCA REGULATORY AUDITS:

DGCA by a special order calls for the audit of operator/organisation from time to time. The Safety Audit Team is headed by the Director/Dy. Director Air Safety as a team leader and the other members of the team are drawn from Airworthiness, Flight Standard Directorate etc. The audit order prescribes the time frame for completion of safety audit and submission of the report.

A preparedness meeting (pre-audit) is called by Team Leader with the operator before carrying out the audit. In the meeting, modalities of the audit are discussed.

The DGCA audit is carried out on the operator/organisation covering all the areas of the activity of the operator like operations, engineering, flight safety, security, Ground support etc. During audit in depth examination of compliance of regulatory requirements as spelt out in the manuals prepared by the operator and their effective implementation in terms of procedures/systems developed by the operator is carried out. For Audit of technical Areas by Officer of Air Safety Directorate, a checklist is enclosed as **Appendix Á'**. During the audit representative from the operator's operations/flight safety is also associated.

At the end of the audit all the observations/deficiencies found during audit are communicated verbally/discussed to the operator for facilitating them to start taking action on the findings.

The final report on the audit is to be submitted by the team leader to DAS (Headquarters) – Prevention within four weeks of carrying out the audit or as specified in the order, whichever occurs earlier. He shall also submit the documentary evidences obtained during the audit process for the purpose of findings. After the review of the audit report, it is forwarded to The CEO/ Accountable Manager of the concerned operator preferably within 15 days for taking necessary action. The operator is given 30 days time to submit the action taken report.

The operator shall forward the action taken report to DAS (Headquarters) – Prevention with all the evidences in the form of circulars/amendment of procedures/amendment of manuals etc. The action taken report from the operator is examined at the headquarter w.r.t findings and if the action taken by the operator is considered adequate the findings are dropped. The operator is required to submit a revised action taken report for findings where action by the operator is not considered adequate.

4.2.8 DISCONTINUING AN AUDIT

The decision to discontinue an audit must be made by the relevant Head of the Office. However, in threatening situations, an individual Auditor may discontinue an audit. In such an event, the Lead Auditor and Head of the Office must be informed at the earliest opportunity. Events that may prevent an audit continuing include:

- The safety of the audit team is at risk;
- The objective of the audit becomes unattainable due to access limitations;
- Hindrance, harassment or aggressive behaviour of the Auditee;
- Non-availability of Auditee's key staff; or

- Enforcement action is assessed as being more appropriate.

Prior to discontinuing an audit, officers must draw the Auditee's attention to the delegation of powers under Aircraft Rules 1937 read with the Government of India then Ministry of Civil Aviation and Tourism Notification No.: S.O. 727(E) dated the 4th October 1994.

4.2.9 AUTHORIZATION CARDS FOR AIR SAFETY OFFICERS

Access of Authorized cards have been provided to all officers who need to have access to any place for carrying out any functions of inspection of aircraft or documents under rule 156 of the Indian Aircraft Rules 1937.

4.2.10 FINALIZATION

While pointing out the deficiencies, it is important to note that the relevant Regulations / Standards/Requirements /Operations Manual/ Flight Safety Manual / QC manual / MOE/ should be clearly spelt out. Where deficiencies are not covered by Regulations/ Requirements, the same may be treated as suggestion for improvement. If such deficiencies are serious in nature affecting safety it should be brought to the notice of Headquarters immediately for laying down the standards/requirements if necessary. However, they should be firm in their decision for upholding rules & regulations/ requirements.

4.3 MONITORING

At Headquarters, a review of surveillance activities of various Regional Air Safety offices is taken by the Director General. In the review meeting, the surveillance activities of various offices for the previous month are discussed.

APPENDIX- A

DGCA	**FLIGHT SAFETY ORGANISATION SURVEILLANCE / AUDIT CHECKLIST (DGCA/AS/CL/Aud/Sur)**
ORGANISATION – Name / address / email id:	
APPROVAL DETAILS / DATE/ SETUP/MANPOWER Approved(Chief of Flight Safety, Deputy Chief of Flight Safety, Organization)	
PLACE / DATE OF SURVEILLANCE / AUDIT	
DGCA TEAM	**NAMES OF POST HOLDERS PRESENT DURING SURVEILLANCE / AUDIT**

SURVEILLANCE / AUDIT AREA: Flight Safety Organisation Setup

(CAR , Section 5, Series F Part I)

SNO.	ITEM OF INSPECTION	OBSERVATION
1	Is the chief and deputy Chief of Flight safety approved by DGCA and their qualifications are as per the requirements	
2	Does the organisation has DGCA approval *Approval details / Date/ Setup/Manpower*	
3	Does the organisation flight safety setup/deployment of Manpower is in accordance with the approval	
i	Engineering Person	
ii	Flying Background person	

4	Whether the flight Safety Personnel are adequately in accordance with the requirements of CAR/Flight Safety Manual and trained on the type of aircraft, whose monitoring/investigation is entrusted to them	

SURVEILLANCE / AUDIT AREA: Flight Safety Manual(Para 3)

SNO.	ITEM OF INSPECTION	OBSERVATION
1	Whether Company's Safety Policy stated	
2	Whether procedure for the implementation of CAR Sec-5 Stated	
3	Whether Manual is approved	
4	Whether responsibilities for implementation of policies and procedures is clearly reflected in the manual	
5.	Whether flight Safety Manual is organized as Appendix A to the CAR	
6	Is the flight safety Setup is as per Appendix 'C'	
7	Do Chief of Flight Safety/ advisor Flight safety reporting to accountable manger	
8	Total Number of person in the Flight Safety & their description of Duties is as per the DGCA approval	
9	Is the quantum of Accident prevention work in the Manual is as Per Appendix 'D'	

10	Performa & Procedure for Voluntary Reporting System as per AIC 3 of 2015	
11	FOQA parameter exceedance to be given as per the aircraft	
12	Pre flight Medical Procedure is as per CAR Section -5 SERIES 'F' PART III	

SURVEILLANCE / AUDIT AREA: ACCIDENT/INCIDENT PREVENTION PROGRAMME(Para 6)

SNO	ITEM OF INSPECTION	OBSERVATION
1	Review of last two Internal Audits	
a	Frequency at which Internal Audit carried out at Main base and Line Stations	
b	Whether Internal audit covers different divisions like Operations, Maintenance, Commercial, Security, Ground Support etc	
c.	Whether the composition of the team is as per the requirements	
d	Whether the auditors meet, the qualification and experience requirements as given in the flight Safety Manual	
e	Whether the deficiencies brought to the notice of concerned departments and appropriate corrective action ensured.	
f	Whether the ATR is being evaluated for the adequacy	
g	Whether findings along with the ATR is being forwarded to the DGCA(Air transport and Air Safety)	

2	Whether the Annual Surveillance programme has been made	
3	Whether the Annual Surveillance programme include monitoring of	
i	Adherence to Standard Operating Procedures (SOPs) by In flight monitoring by Instructors/Examiners /Check pilots	
ii	The training requirements as laid down in the company operation/training manual before releasing a pilot for operation to new airports, marginal runways are carried out.	
iii	Monsoon release check during monsoon seasons.	
iv	FDTL monitoring	
v	Load and Trim sheets(0.01% of flights per month)	
vi	Loading of aircraft under high ambient temperature and elevation conditions, operations to airfield located in mountainous terrain.	
vii	Maintenance activities, MEL release(Quarterly)	
viii	Pre flight Medical examination	
ix	Apron discipline, procedures by ground support , serviceability of ground support equipments and other facilities(two checks per month)	
4	Periodic review of Emergency response procedure	
5	System exists for the detection and prevention of weather minima violations.	
6	Procedure is in place for voluntary/anonymous hazard reporting and their analysis	

SNO	ITEM OF INSPECTION	OBSERVATION
7	Whether flight safety has role in the assessment of new pilots and is their monitoring of their initial and transitional training	
8	91Analyzing and maintaining statistical data of incidents/accidents on a quarterly basis to determine the flight safety performance of the airline for that period	
9	Meetings of Pilots and engineers to discuss important safety issues/ Periodic Safety Seminars(Quarterly)	
10	Whether all the observations are forwarded to the concerned department promptly and timely response of corrective action are received from that department	
11	Publishing of monthly safety Journal	
12	Quarterly review of the implementation of the recommendations of the PIB, Accident reports, Safety Audits, Surveillance, spot Checks etc	
13	Safety Bulletins are being issued regularly	

SURVEILLANCE / AUDIT AREA: Monitoring of DFDR/QAR/PMR

CAR Section 5, Series F, part II

SNO	ITEM OF INSPECTION	OBSERVATION
1	As part of Safety Management System, service provider has in place DFDR monitoring system.	
2	FDM (Quantum).	
3	Facility exist for down loading and monitoring	
4	Parameters and their limits for the exceedance monitoring are defined (para 4.5)	
5	Exceedence has been classified in different categories depending on severity levels.	
6	Software for the animation/3-D presentation of the recorded data is available (Para 4.4)	
7	Software has open architecture (Para 4.6)	
8	Exceedence observed during the monitoring are being analyzed for the possible reasons(Para 5.2)	
9	Exceedence occurring during the training flight are being communicated	
10	Exceedence data is being trended across the fleet, over period of time to detect any inherent weakness in the system	
11	For the airfields where special takeoff procedure has been laid, the software has provision for the analysis of the take off profile(Para 5.3)	
12	Counselling of the crew is done based on the FDM findings.	
13	A quarterly statistical report giving summary of the general findings and suggested measures is prepared covering all type of aircrafts and is circulated to operational personnel	

14	During refresher the results and findings are discussed for the benefit of crew members	
15	FDM analysis is shared with flight operations, training and maintenance (wherever applicable) in de-identified form for them to develop safety control	

SURVEILLANCE / AUDIT AREA:INVESTIGATION(Para 6.1) & CAR Section 5, Series C, part I		
1	Operator has procedure for the notification of occurrence in place	
2	Operator has constituted a permanent investigation board and meetings are held regularly	
3	There is no frequent change of the members and board meetings are attended by all the members	
4	Time line for the investigation are being adhered to- **ASC 06 of 2013** / Reports are being finalized within six weeks of the occurrence.	
5	Reports conform to ICAO annex 13 format	
6	Component investigation report of the defective component, scrutiny of the engineering records, detailed investigation/analysis of records, recorders readout, crew training, FDTL record etc are taken into consideration in the final investigation report	
7	Dangerous goods incident/accident reporting system is in place and all the ramp personnel have been briefed about it.	
AREA OF AUDIT/SURVEILLANCE: DOCUMENTATION		
1	The Flight Safety department has documentation such as CARs, Air Safety Circulars, relevant AICs , ICAO Doc, Flight manuals, OEB's, Operation circulars etc	
2	Whether flight safety gets International/National Aviation Magazine/Bulletins and relevant matter is circulated to pilots/engineers	

(Signatures)
Name and Designation of Auditor

CHAPTER-5

ENFORCEMENT ACTIONS

5.1 INTRODUCTION

Rule 61 of Aircraft Rules, 1937 empowers DGCA to grant license/ approvals/ authorisations for inspection and certification to such persons who are engaged in maintenance of aircraft/ engine/ aircraft components or item of equipment. Licence is also issued to Flight Engineers in accordance with Section 'X' of Schedule-II of Aircraft Rules, 1937. Similarly under Aircraft Rules crew is issued license. The Air Safety Directorate of DGCA is vested with the responsibility of carrying out spot checks/ surveillance/ investigation of incidents to ensure that the aviation activities are carried out in accordance with Aircraft Rules, Civil Aviation Requirements, various directives issued by DGCA from time to time and manufacturer's requirements so that safety is not compromised. While carrying out surveillance, spot checks and investigation of incidents, if violation of any requirements which could affect safety is observed, necessary action is required to be taken by DGCA against the erring personnel as a deterrent to obviate recurrence of similar violation.

5.2 PROCEDURE

5.2.1 Any prima-facie violation of DGCA requirements/ manufacturer’s instructions committed by a licensed Aircraft Maintenance Engineer/ Flight Engineer/ authorised or approved persons/Pilots/Operations department or any other organisation engaged in aviation related activities, detected during spot checks/ surveillance/ investigation of incident shall be investigated by the concerned Regional Air Safety office. Usually the operators also investigate the lapses and takes action against their erring employees. Notwithstanding such investigation by the operator, independent investigation should also be carried out by the concerned office by an officer not below the rank- of Senior Air Safety Officer. The officer is required to carry out the investigation in a careful and diligent manner so that his views are not influenced by any means such as investigation report of the operator, personal relationship etc.

5.2.2 Upon completion, the investigating officer shall prepare and submit a detailed investigation report along with supporting evidence/ documents. The report submitted by the investigation officer should be examined by senior officers and submitted to the Head of office. The report should always be submitted on file with proper file noting and the senior officers should record their views on file.

If punitive action is required for the lapses in accordance with Sub-rule (14) of Rule I937, the concerned person shall be issued with a show cause notice in the form of a memorandum. While forwarding the case to Headquarters, the complete details of the case including the circumstances of the event, the lapses of the AME, Pilot, organisation; details of rules, requirement, procedures which have been violated should be furnished and should clearly bring, out that the investigation report has been provided to the erring person.

5.2.3 At Headquarters, the case forwarded by the regional office will be examined and a decision will be taken on the quality of action to be taken against the erring person in the light of recommendation from the regional office.

5.3 CONTENTS OF MEMORANDUM

The following information shall be reflected in the memorandum:

a) Background of the occurrence in which the erring person is found blameworthy detected during spot check, surveillance or routine inspection/investigation of incident and may relate to inadequate/improper maintenance action, improper certification or any action resulting in accidents, incidents including ground incidents, delays/cancellation attributable to the concerned person's actions.

b) Brief reason for blaming the erring person and the details of rules, regulations or procedures which have been violated.

c) Applicable rule of the Aircraft Rules, 1937 (Rule 19 of Aircraft Rules as the case may be, in light of which the memorandum is issued).

d) Time period to offer comments to the memorandum by the erring personnel and also action of concerned DGCA directorate in case the erring person fails to offer his comments.

5.4 ENFORCEMENT MANUAL

Notwithstanding the above all enforcement actions shall be in compliment to the relevant chapters of the DGCA Enforcement Manual.

GOVERNMENT OF INDIA
DIRECTORATE GENERAL OF CIVIL AVIATION

OFFICE OF THE DIRECTOR OF AIR SAFETY XXXXXXX
File No…….
Dated……

MEMORANDUM

During a spot check carried out by the representatives of this office on Boeing 737-XXX aircraft on XX.XX.XX (Date), it was observed that the fuel manifold installed on APU Sl. No. XXXX had some unauthorized repair carried out on it.

The above matter was investigated thoroughly and from the records, it was found that the last installation of the APU fuel manifold and its certification was carried out by Sh. XXXXX holder of AME license No. XXXX on XX.XX.XX (Date). Such repair was not carried out in accordance with Chapter 49 of AMM. It was also found that the AME was not approved to carry out the repair. Sh. XXXXX is therefore considered blameworthy under Rule-- for having violated the provision of the Aircraft Maintenance Manual for wrongly carrying out an unapproved repair in a perfunctory. He is also considered blameworthy under Sub-rule -- of Rule -- for wrongly certifying repair for which he is not approved.

Now, therefore, in accordance with Rule 19 of the Aircraft Rules, 1937, Sh. XXXXX hereby issued this memorandum to explain why action should not be taken against him for carrying out and certifying unauthorised repair stated above.

Sh. XXXXX is hereby advised to offer his comments in this memorandum which must reach this office within XXX days from the date of issue of this memorandum, failing which it will be assumed that he has no comments to offer and action will be taken against him as permitted under the Aircraft Rules, 1937.

A copy of the investigation report is enclosed for reference.

Authorised Signatory
with designation

Encl: Investigation report.

Sh. XXXXX

licence No. XXXX

M/s. XYZ Air Ways

CHAPTER-6

GUIDELINE FOR FOLLOWING ICAO ANNEXES/ GUIDANCE MATERIAL

6.1 INTRODUCTION

6.1.1 CAR Section 5 Series F Part I, CAR Section 8 Series A Part II, Section 2 Series A Part IV broadly gives the DGCA regulations and safety oversight of all the areas of activities of operators.

6.1.2 DGCA as a signatory to ICAO Convention 1944 is required to lay down standards and procedures for ensuring compliance with various Accident/Serious Incident Investigation; airworthiness related and operations related requirements and carry out continuous monitoring of all approved organizations. These regulations are primarily based on the Standards and recommended practices (SARPs) issued by ICAO in its various Annexes. Where required, ICAO guidance material contained in ICAO Documents Annex 13, Manual of Air craft Accident Investigation (Doc 6920), Airworthiness Technical Manual (Doc 9051), Procedures for an Airworthiness Organization, Manual of (Doc 9389), Procedures for Operations Inspection, Certification and Continued Surveillance, Manual of (Doc 8335), Preparation of an Operations Manual (Doc 9376) etc. is also used in laying down these regulations.

6.1.3 This Chapter gives the guideline to be followed by the officers at DGCA headquarters on receipt of amendment to ICAO Annexes/documents for incorporating the same in DGCA regulations/requirements.

6.2 PROCEDURE

6.2.1 Whenever an amendment to an ICAO Annex/ State letter is received, the same will be incorporated in headquarters copy of the Annex. Similarly, amendment to ICAO guidance material/ documents shall be incorporated in the headquarters copy of the document.

6.2.2 The amendment/ State letter will be reviewed for:

a) Current differences registered in EFOD data base

b) Provide advice to SARP Management Group (SMG), of possible regulation amendment/ development

c) Advise SMG, if no action is required.

6.2.3 Based on review by SMG work plan along with timelines for the amendment for Regulation will be prepared by the Project Officer.

6.2.4 Amendment to CAR shall be in accordance with procedure given in CAR Section 1 Series 'A' Part I.

6.2.5 It shall be ensured that the effective date of the applicability of the amendment to the Annex is adhered.

6.2.6 It shall be the endeavour of Air Safety Directorate to procure amendments to the Annexes and forward the same to all the Regional Air Safety Offices. Annex and ICAO Doc are also available on the DGCA web site (Intranet). Regional offices should review them on routine basis and keep their copies of Annex 13 and Manual of Accident Investigation updated. There should be appropriate record for revisions duly signed by an officer.

6.2.7 For details reference may please be made to DGCA, ICAO Annex Management Manual, Edition-2012

CHAPTER-7

COMPLIANCE OF CIVIL AVIATION REQUIREMENTS

7.1 INTRODUCTION

The Indian Aircraft Rules, 1937 Rule No. 133A empowers DGCA to issue Civil Aviation Requirement and rule 133 B(9), 155 and 155A (8) requires all approved organisation, Aircraft owners and operators to comply with requirements specified in the Publication titled "Civil Aviation Requirements". This chapter details the procedures that are to be followed by Regional Air Safety Officers to ensure the compliance with the Civil Aviation Requirements by the approved organisation, aircraft owners and operators.

7.2 PROCEDURE

7.2.1 Regional Air Safety Officers shall routinely logon to DGCA website to download CARs and other regulatory material and their amendments issued by Headquarters. The Interval between two successive visits to the DGCA website shall not be more than 10 days at any point of time.

7.2.3 On downloading CAR / amendment the designated officer shall bring it to the notice of the Head of Office and circulate a copy to all the officers through a Register. All officers are required to study the CAR / amendment and familiarize themselves with the requirement. Such familiarization should be completed within a fortnight of issuance of CAR by Headquarters.

The Head of the office shall arrange for an in-house discussion on the contents of the CAR / amendment and evolve modalities for the enforcement of the requirements. The details of compliance action to be taken by the affected organisation /operator along with the officers responsible for implementing the requirement shall be recorded on Form 3. The above process should be completed within 3 weeks of issuance of CAR/ amendment.

7.2.4 To ensure uniform implementation of the new requirement / amendment meeting of the organisation /operators who are required to comply with the requirements shall be organised on the 3rd week of issuance of the CAR by the Regional Air Safety Office. Contents of the CAR along with required compliance action shall be deliberated by the Head of Office of the Regional Air Safety Office and in his absence the next senior most Officers will preside the meeting and maintain the minutes of the meeting.

7.2.5 The operators / approved organisations concerned shall indicate the compliance action intended to be taken by them with proposed date of compliance.

7.2.6 Quality Assurance Manager / Nodal officer of the organisation / operator shall confirm the implementation of the requirements of CAR within the organisation to the Regional Air Safety Office.

7.2.7 On receipt of the above confirmation the dealing Air Safety Officer shall physically verify the compliance action taken by the organisation and record finding. Means adopted by the Air Safety officers to verify compliance should be attached with the inspection report and retained in the folder.

7.2.8 The entire records in respect of implementation of a particular CAR / amendment issued by Headquarters shall be maintained in separate folder with proper index and page number by the Regional Air Safety Office.

FORM 3

CIVIL AVIATION REGULATIONS/CAR COMPLAINCE

PART - I (FOR OFFICE USE)

Name of the Region:

1. DOCUMENT TITLE / CAR				
2. ISSUE	3. REVISION	4. PAGE No.	5. DATE	6. SUBJECT

7. REQUIRED COMPLIANCE ACTON BY APPROVED ORGANISATIONS / OPERATORS
(The action shall include Development / Amendment of Policy / Procedures / Audit check list)

8. DELIBERATION ON APPLICABILITY / IMPLEMENTATION ACTION WITH DATE

NAME OF THE ORGANISATION	OFFICER RESPONSIBLE TO IMPLEMENT	DUE DATE	SIGNATURE WITH DATE AFTER DISCUSSIONS	SIGNATURE OF THE OFFICER WITH DATE AFTER VERIFYING IMPLEMENTATION
I				
II				
III				
IV				
V				
VI				
VII				

9.AUDIT CHECK LIST REFERENCE AND ITEM NUMBER :

FORM 3A

CIVIL AVIATION REQUIREMENTS COMPLAINCE

PART - II (FOR OPERATOR / APPROVED ORGANISATION'S USE)			
NAME OF THE ORGANISATION:			
1. DOCUMENT TITLE / CAR			
2. ISSUE	3. REVISION	4. DATE	5. SUBJECT
6. REQUIRED COMPLIANCE ACTON BY APPROVED ORGANISATIONS / OPERATORS (The action shall include initiation / amendment of documented organisation's / procedures / Audit check list			
7. DEPARTMENTS , LOCATION AND AIRCRAFT REQUIRING COMPLIANCE (STRIKE WHICHEVER IS NOT APPLICABLE):			
8. PROPOSED DATE BY WHICH COMPLIANCE WILL BE COMPLETED			
9. CONCERNED MANAGER'S SIGNATURE WITH DATE			
10. ACCEPTANCE **OF THE ORGANISATION'S PROPOSAL BY AIR SAFETY OFFICE** _____ _____ _____ OFFICER'S SIGNATURE DATE (NAME)			
11. CONFORMATION ON IMPLEMENTATION ACTION BY VARIOUS DEPARTMENTS AND LOCATIONS			
NAME OF THE DEPARTMENT AND LOCATION / AIRCRAFT (IF APPLICABLE TO MORE THAN ONE)	EVIDENCE ATTACHED TO CONFIRM COMPLIANCE	SIGNATURE OF THE OFFICER WITH NAME DATE CONFIRMING THE COMPLIANCE	

I.		
II.		
III.		
IV.		
V.		
VI.		

12. **CONFIRMATION OF THE CHIEF OF FLIGHT SAFETY/QUALITY ASSURANCE MANAGER ON THE IMPLEMENTATION STATUS OF THE REGULATION /CAR IN THE ENTIRE ORGANISATION:**

NAME _____ SIGNATURE _____ DATE _____

13. CONFIRMATION OF THE AIR SAFETY OFFICER ON THE IMPLEMENTATION STATUES OF THE REGULATION /CAR BY THE ENTIRE ORGANISATION:

NAME OF THE DEPARTMENT AND LOCATION / AIRCRAFT (IF APPLICABLE TO MORE THAN ONE)	EVIDENCE OF PHYSICAL VERIFICATION OF COMPLIANCE (Provide file / check list reference with date)	SIGNATURE OF THE OFFICIAL WITH NAME DATE CONFIRMING THE COMPLIANCE VERIFICATION
I		
II		
III		
IV		
V		
VI		
VII		
VIII		

CHAPTER-8
MANUALS

8.1 INTRODUCTION

Air Safety Directorate receives generally three types of manual from the Airlines/operators. These are given below:

1. Safety Management System Manual.
2. Flight Safety Manual.
3. Flight Safety Documents System Manual.

8.2 PROCEDURES

Operators in accordance with the CAR Section 1 Series C Part I, CAR Section 5 Series F Part I are required to maintain an SMS manual, Flight Safety Manual and Flight Safety Documents System Manual respectively. The procedure for the approval/acceptance of these Manuals is laid down in Procedure Sheet attached as Annex 'A' and below.

8.2.1 SAFETY MANAGEMENT SYSTEM MANUAL

CAR Section 1 Series C Part 1 requires that all scheduled, non-scheduled operators, maintenance organisations, aerodrome operators, ANS Service Provider, design and production organisations, and flying clubs should make a Safety Management System Manual as per the guidance given in above quoted CAR, ICAO Doc 9859, and ICAO Annex 19. The Safety Management System Manual is to be accepted by the Director Air Safety, DGCA Headquarters. The Check Sheet for SMS Manual is attached as Annex 'B'.

The Air Safety Directorate, DGCA Headquarter in association with other directorates shall scrutinize the manual in respect of existing regulations and CAR. Acceptance shall be issued by Director Air safety (HQ) if all the parameters are met and after obtaining the approval of JDG. Air Transport Directorate shall be intimated accordingly.

The Surveillance/ A udit of SMS implementation for various operators will be carried out as per the checklist given as Annex 'C'

8.2.2 FLIGHT SAFETY MANUAL

CAR Section 5 Series F Part 1 requires that all operators engaged in scheduled air transport services / Cargo Services/ non-scheduled air transport services should make a Flight Safety

manual as per the guidance given in Appendix 'A' to the above quoted CAR. The flight safety manual is received in DGCA(HQ) and analysed for compliance with the CARs in Section 5 and CARs in other Sections as per check sheet given in Annex 'D' to this manual.

Approval shall be issued by Director Air Safety (HQ) or Deputy Director Air Safety (HQ) if all the parameters are met and after obtaining the approval of JDG. Air Transport Directorate shall be intimated accordingly.

8.3 FLIGHT SAFETY DOCUMENTATION SYSTEM

In accordance with the requirements prescribed in CAR Section 5 Series F part I and Air Safety Circular 2 of 2013, all Scheduled, non-scheduled and Cargo operators shall establish an effective Flight Safety Documentation System for use and guidance of operational personnel.

Before the grant of AOP, the operator will submit details of its Flight Safety Documentation procedure document and other documents forming part of the documentation system. The procedure document and other documents will be scrutinized by the Air Safety Directorate for conformance. Air Safety Directorate will accord acceptance to the FSDS for the operators and Air Transport Directorate shall be intimated accordingly. Subsequently the deployment of system will be inspected at the operator's facility. For the assessment of the flight safety documentation system, a check sheet given as Annex 'E' to this chapter will be used. The officer assigned for inspection, will fill up the checklist and clearly state the deficiencies observed. After review by Director Air Safety, DGCA Headquarters (DAS), deficiencies observed will be communicated to the concerned Operator. On receiving the deficiencies, operator will submit an action plan along with time lines to overcome the deficiencies. After resubmission by the operator, another assessment will be carried out to check the compliance.

ANNEX 'A'

PROCEDURE SHEET FOR APPROVAL OF MANUALS (Doc.No. : DGCA/AS/P/01)

1. Purpose : To establish & operate a system for approval/acceptance of SMS, FSDS & FS manual for successful completion of AOP.

2. Scope :

1. SMS Manual: Applicable to all operators carrying out commercial operation, Aerodrome operators, Maintenance organisations, Production and design organisations, Training organisations, Major Private operators – For Acceptance
2. Flight Safety Manual: Applicable to all operators carrying out commercial operations - For Approval.
3. FSDS Manual: Applicable to all operators carrying out commercial operations- For Acceptance.

3. Overall Responsibility : JDG/(Air Safety Directorate)

4. Procedure :

Sl. No.	Activity/ Description	Responsibility	Reference Documents / Records
4.1	**Receipt of SMS, FSDS & FS Manual(s) for approval / acceptance** The SMS, FSDS & FS Manuals prepared by the prospective operator in line with the requirement of respective CAR are received in Air Transport Directorate (AT-1) along with application for license & all other required documents & manuals. Subsequently, the SMS, FSDS & FS Manuals are received in Air Safety through Air Transport Directorate (AT-1) for approval/ acceptance. These manuals are marked & forwarded to ASO through AD / DD by DAS for basic scrutiny & assessment. The detail of the Manuals submitted is noted in Dak receipt Register.	DAS Dealing Assistance	SMS, FSDS & FS Manual (s). Record for approval / acceptance of Manual(s) (DGCA/AS/F/01-01)

4.2	**Assessment of received Manual(s):** All the submitted manuals related to air safety shall be assessed by the nominated officer(s). If any discrepancy is observed by ASO, the same are discussed with concerned AD / DD who in turn shall communicate / forward the discrepancies to the applicant operator through email/ letter for rectification.	ASO Concerned AD / DD	CAR, Aircraft Rules, Air Safety Circulars, Checksheets for evaluation of -- 1. SMSM (DGCA/AS/CL/01-01) 2. FSM (DGCA/AS/CL/01-02) 3. FSDSM (DGCA/AS/CL/01-03)
4.3	**Receiving the revised / amended documents:** Based on discrepancies, the revised / amended Manual(s) / documents are received from the operators which are incorporated in the relevant manual. In case, a lot of amendments / revisions are required in any manual, the entire manual is resubmitted by the operator.	DAS	Revised / Amended/ Resubmitted Manual(s) / documents
4.4	**Re-assessment of Manual(s) / Documents:** The amended / revised / resubmitted manual(s) / documents are assessed by concerned ASO and reviewed by concerned AD / DD.	ASO / AD / DD	Revised / Amended/ Resubmitted Manual(s) / documents
4.5	**Final Review of Manual(s) / Documents:** The manual is discussed & reviewed by DAS. If the discrepancies are still found and the operator is not able to understand the discrepancies, the operator is called for one to one meeting for discussion on the procedures and processes mentioned in the manual and taking necessary action against deficiencies observed during assessment of manual(s). If all the Manual(s) / documents are found in order, the manual(s) / documents are forwarded to the Competent Authority / concerned JDG along with the recommendation for approval/ acceptance.	DAS	Revised / Amended/ Resubmitted Manual(s) / documents
6	**Approval/ acceptance of Manual(s) / Documents:** Based on recommendation of DAS, the Manual(s) / documents related to Air Safety are approved/Accepted.	Competent Authority / Concerned JDG	Revised / Amended/ Resubmitted Manual(s) / documents
4.7	**Issuing letter of Approval / Acceptance:**		

	After approval/acceptance of Manual(s), a letter of approval/acceptance is issued to the applicant Operator. A copy of the same is forwarded to AT-1. Accordingly, the data for approved/ accepted manual(s) is updated in Air Safety Section.	DAS Dealing Asstt. and concerned ASO/AD/DD	Letter of approval Record for approval / acceptance of Manual(s) (DGCA/AS/F/01-01)
4.8	**<u>Retention of Approved/ Accepted Manual (s)</u>** The Approved/ Accepted manual is kept / stored in soft & hard form in Air Safety Directorate	ASO/ Dealing Assistant	Approved/accepted Manual

5. Process Efficiency Criteria:

Sl. No.	Process Activity Sl. No.	Activity	Process Efficiency Criteria
5.1	4.2	**<u>Assessment of received Manual(s):</u>**	The assessment of the manual(s) shall be completed within 30 working days after receipt from AT-1
5.2	4.4 & 4.5	**<u>Re-assessment & Final Review of Manual(s) / Documents</u>:**	Re-assessment & Final Review of Manual(s) / Documents shall be completed within 30 working days after receipt of revised manual.
5.3	4.7	**<u>Issuing letter of Approval/ Acceptance:</u>**	Letter of Approval / Acceptance shall be issued within 05 working days after approval.

6. Definitions:

Sl. No.	Abbreviations	Full Form
6.1	AD	Assistant Director
6.2	AOP	Air Operator's Permit
6.3	AS	Air Safety
6.4	ASO	Air Safety Officer
6.5	AT	Air Transport
6.6	CAR	Civil Aviation Requirement
6.7	CL	Check List
6.8	DAS	Director Air Safety
6.9	DD	Deputy Director
6.10	DGCA	Director General of Civil Aviation

6.11	FS	Flight Safety
6.12	FSDS	Flight Safety Document System
6.13	ICAO	International Civil Aviation Organization
6.14	JDG	Joint Director General
6.15	SMS	Safety Management System

7. Reference Documents:

- **CAR**
- **Aircraft Rules 1937**
- **Aircraft (Investigation of Accident & Incidents) Rules 2017**
- **ICAO Annexure 6, 13, 19**
- **ICAO Doc 9859**
- **Air Safety Circulars**
- **Aeronautical Information Circulars**
- **CAP 3100**

ANNEX 'B'

CHECKSHEET FOR SAFETY MANAGEMENT SYSTEM MANUAL

(DGCA/AS/CL/01-01)

Name of the Operator:

Guidelines:

i. Kindly refer following
   1. CAR Section-1, Series-C, Part-I.
   2. SSP Circular 02/2018

ii. In Status column mention **Yes** for compliance and **No** for noncompliance.

iii. In remarks state reason for non-compliance/ acceptance.

S.No	Items of observations		Manual Page No.	Status	Remarks
1	Whether contact details of the operator are mentioned on the covering page of the Manual.				
2	Whether table of Contents, Record of Revision, List of Effective Pages, &Distribution List are given	Distribution List			
		List of Effective pages			
		Records of revision			
		Table of contents			
3	Whether Chapter name, Chapter no. and Page no. are mentioned on each page of the manual.				
4	Whether issue no. , Revision No. and Effective date are mentioned on each page at the bottom.				
5	Whether issue no. , Revision No. and Effective date are mentioned on each page at the bottom is same as mentioned in the list of effective pages.				
Ch-1	**Document Control Procedure**				
	The manual's administration, approval and regulatory acceptance process is defined.				
	Provision for prior acceptance of DGCA is mentioned for any changes or amendments in the Manual.				
	Whether correlation between SMS Manual and other existing manual is defined.				

	The process for periodic review of the manual and its related forms/documents to ensure their continuing suitability, adequacy and effectiveness is defined.			
	Whether procedure of distribution of SMS Manual is defined.			
Ch-2	**SMS regulatory requirements**			
	Whether current and standard applicable regulatory requirements are given.			
Ch-3	**Scope and integration of the safety management system**			
	Whether Brief description of scope and extent of company's operation, fleet size and type of aircraft is given.			
	Whether the Scope of the Safety management System is defined.			
	Whether all the major areas, departments and sub contractual activities are covered under scope of company SMS.			
	Control of contracted activities:			
	Whether the details key issues, policy of contract is defined.			
	Whether the details of staff responsible for identifying and managing contracted activities is given.			
	Whether Integration of SMS with other management system such as QMS has been defined			
Ch-4	**Safety Policy**			
	Whether Safety Policy is defined and signed by the Accountable Executive.			
	Whether the safety policy reflect service provider commitment regarding safety, including the promotion of a positive safety culture;			
	Whether the safety policy include a clear statement about the provision of the necessary resources for implementation of the safety policy;			
	Whether the safety policy include safety reporting procedures;			
	Whether the safety policy clearly indicate which types of behaviours are unacceptable			

	related to the service provider's aviation activities and include the circumstances under which disciplinary action would not apply;			
	Whether the safety policy is communicated, with visible endorsement, throughout the service provider;			
	Whether the safety policy is being periodically reviewed to ensure it remains relevant and appropriate to the service provider.			
Ch-5	**Safety Objectives**			
	Whether Safety Objectives are defined			
	Whether the safety objectives are realistic to the size and complexity of the organization			
	Where the safety objectives are linked to safety indicators to facilitate monitoring and measurement where appropriate.			
Ch-6	**Role, Safety accountability and responsibility of Personnel Involved in SMS**			
	Whether the Accountable Executive of the organization has been identified			
	Whether the Safety Manager of the organization has been identified			
	Whether the safety related organization chart of the company is given			
	Whether Authority, Accountability and responsibility of Key safety personnel and Head of departments have been defined separately			
	Whether the organization has established safety committees depending upon the size and scope of the organization			
Ch-7	**Safety reporting and remedial actions**			
	Whether the various reporting procedures of the organization has been defined: i. Mandatory reporting systems, ii. Voluntary reporting systems iii. confidential reporting systems iv Reporting of hazards, event and safety concern			
	Procedure of collection and storage of safety data has been defined			
	Procedure of analysis of safety data has been defined			

Ch-8	**Hazard identification and risk assessment**			
	Whether a formal process that ensures that hazards in operations are identified is developed and maintained?			
	Whether analysis of safety risks of the consequences of each hazard identified through the hazard identification processes in terms of probability and severity of occurrence, and assessed for their tolerability is given.			
	Whether the risk assessment process utilizes worksheets, forms or software appropriate to the complexity of the organization and operations involved.			
	Whether the risk identified in the safety assessment are being approved by the appropriate level of management.			
Ch-9	**Safety performance monitoring and measurement**			
	Whether the formal process to develop and maintain a set of safety performance indicators and their associated performance targets with action plan are given.			
	Whether the identified SPIs are linked with the organization's safety objectives			
	Whether the process of monitoring the performance of these SPIs including remedial action are defined			
Ch-10	**Safety-related investigations and remedial actions**			
	Whether the procedures to ensure that reported accidents and incidents are investigated internally and disseminated is defined.			
	Whether the conditions under which punitive disciplinary action would be considered (e.g. illegal activity, recklessness, gross negligence or wilful misconduct) are clearly defined.			
Ch-11	**Safety training and communication**			

	Whether Safety Training Programme ensures that personnel are trained and competent to perform their SMS duties			
	Whether the scope of the safety training will be appropriate to the individual‘s involvement in the SMS.			
	The training includes initial, recurrent and update training, where applicable.			
	Whether a formal means for Safety communications include : a) safety policies and procedures b) newsletters c) bulletins d) websites			
Ch-12	**Continuous improvement and SMS audit**			
	Whether the process for regular internal audit/review of the organization’s SMS and their contractual activities to ensure its continuing suitability, adequacy and effectiveness.			
	Describe any other programmes contributing to continuous improvement of the organization’s SMS and safety performance, e.g. MEDA, safety surveys, ISO systems.			
	Whether details of checklists, inspection schedules if any are given.			
	Whether the procedure for taking necessary corrective action on the findings of audits/inspections/investigations is given.			
Ch-13	**SMS records management**			
	Whether the organization has an SMS records or archiving system that ensures the retention of all records generated in conjunction with the implementation and operation of the SMS.			
	Whether the person responsible for managing SMS records has been identified.			

	Whether the SMS records include hazard reports, risk assessment reports, safety action group/safety meeting notes, safety performance indicator charts, SMS audit reports and SMS training records.			
	Whether the records are traceable for all elements of the SMS and be accessible for routine administration of the SMS as well as internal and external audits purposes.			
Ch-14	**Management of change**			
	Whether a formal process for the Management of change is defined?			
	Whether the changes have been identified within the organization which may affect established processes and services.			
	Whether the procedure ensure that appropriate safety assessment is performed prior to any change having safety risk implication.			
Ch-15	**Emergency/contingency response plan**			
	Whether the ERP procedures includes the following:			
	The roles and responsibilities of the members in the event of a major incident, crisis or accident.			
	Notification process that includes an emergency call list and an internal mobilization process.			
	Arrangements with other agencies for aid and the provision of emergency services as applicable.			
	Overseeing the welfare of all affected individuals and for notifying next of kin.			
	Procedures for handling the media and insurance-related issues.			
	There is emergency preparedness and response training for affected personnel.			

	A disabled aircraft or equipment evacuation plan has been developed by the organization in consultation with aircraft/equipment owners, aerodrome operators or other agencies as applicable.			
	A procedure exists for recording activities during an emergency response.			

ANNEX – C

CHECK SHEET FOR SURVEILLANCE/ AUDIT OF SAFETY MANAGEMENT SYSTEM (DGCA/AS/CL/01-02)

***ORGANISATION* – Name / address / email id**:			
Place / Date of surveillance / Audit			
DGCA Team	**Names of Post Holders present during Surveillance / Audit**		
No	**Question**	**Compliance (Y/ N/ Partial)**	**Comments/ Reference to compliance**
1	Have the following post holders been appointed: 1. Accountable Executive 2. SMS Manger		
2	Is there a documented safety policy statement endorsed by the Accountable Executive?		
3	Has the safety policy been communicated effectively throughout the organisation?		
4	Is there a direct reporting line between the SMS focal point/ Safety Manager and the Accountable Manager?		
5	Has the company carried out its gap analysis and submitted to DGCA Hqrs.?		
6	Has an implementation plan been made based on the gap analysis and submitted to DGCA Hqrs.?		
7	Are the safety accountabilities and responsibilities of the Accountable Manager and other key staff members clearly defined?		
8	Has the management structure of the organisation been defined?		
9	Are all staff members communicated of their safety roles and responsibilities?		
10	Does the organisation have a Safety Committee? (if applicable to the size of organization)		

11	Does the Safety Committee meet regularly and monitor the safety performance of the organisation? (if applicable to the size of organization)		
12	Has an emergency response plan (ERP) been developed and is it kept up to date?		
13	Is the ERP regularly reviewed and tested?		
14	Has the SMS Manual been prepared and submitted to DGCA Hqrs.?		
15	Does the safety management manual or safety documentation in existing manuals contain all the elements of SMS?		
16	Is the risk tolerability matrix mentioned in the manual appropriate as per the SSP Circular 01/2012?		
17	Is there a system for the recording and storage of SMS documentation and records i.e. hazard logs, risk assessments and safety cases?		
	Are the hazards and risks recorded on a hazard log?		
18	Is there a written procedure describing how hazards are identified?		
19	Is there a risk assessment process in place?		
20	Has the Accountable Manager undergone appropriate SMS familiarisation, briefing or training?		
21	Is there a confidential/voluntary safety reporting system?		
22	Is there feedback to the reporter?		
23	Have all personnel directly involved in the SMS (Safety Committee/ SAG members) undergone appropriate SMS training or familiarisation?		
24	Are procedures or checklists reviewed when significant changes in the organisation occur?		
25	Are the hazards identified from safety investigations addressed and communicated to the rest of the organisation?		
26	Are safety audits carried out?		

27	Are safety surveys carried out?		
28	Does safety related information get communicated to all staff members as appropriate?		

ANNEX – D

CHECK SHEET FOR APPROVAL OF FLIGHT SAFETY MANUAL (DGCA/AS/CL/01-03)

Organization:	**Date:**

References :	1. CAR Section 5 Series F Part I : a) Appendix 'A' b) Appendix 'B' c) Appendix 'C' 2. CAR Section 5 Series F Part II 3. CAR Section 5 Series F Part III 4. CAR Section 5 Series C Part I 5. Aircraft (Accident Incident Investigation) Rules, 2017 6. Air Safety Circular 02 of 2011 7. CAP 3100

S.No	Observation		Reference	Page no. of the Manual	Sat. / Unsat	Remarks
1.	Contact details of the operator on the covering page of the Manual.		Ref. 7			
2.	Distribution List		Ref. 1 a)			
	Record of Revision					
	List of Effective Pages					
	Table of Contents					
3.	Contents of the Table of Content		Ref. 1 a)			
4.	DAS (HQ), DAS/Head of office of concerned Regional Air Safety Office are included in the distribution list					
5.	Provision for prior approval of DGCA is mentioned for any changes or amendments in the Manual.		Para 3.1 of Ref. 1			
6	Chapter name, Chapter no. and Page no. are mentioned on each page of the manual.		Para 3.3.1 (o) & (p) of Ref 7			
7.	Issue no., Revision No. and Effective date are mentioned on each page		Para 3.3.1 (o) Ch.2of Ref 7			
8.	Issue no., Revision No. and Effective date are mentioned on each page is same as mentioned in the list of effective pages.					

9.	Brief description of scope and extent of company's operation, fleet size, type of Aircraft, main base, lay-over stations.		Ref. 1 a)			
10	Safety Policy is defined and signed by the Accountable Manager.		Para 3.2 of Ref. 1			
11	Whether Chief of Flight Safety reporting directly to Accountable Manager.		Para 8.1 of Ref. 1			
12	Duties & Responsibilities of CoFS		Para 2.1.2 of Ref. 1 a)			
13	Qualification & Training Requirements of CoFS.		Para 2.2 of Ref. 1 a)			
14	Accident/Incident Reporting Procedure		Ref. 4 & Ref. 5			
15	Reporting Proforma's	Wildlife (Bird/Animal) Strike	Ref. 6			
		RA reporting				
		Air-mis reporting				
		Cofidential/Voluntary Reporting				
		Accident/Incident Reporting	Ref. 4			
16.	References of various reporting performa's are mentioned in the relevant paragraphs.					
17	Procedure of Investigation by PIB.		Ref. 1 a)			
18	Composition of PIB.		Ref. 1 a) & Para 6.2 of Ref 4			
19	Accident/Serious incident Investigation Procedure		Ref. 1 a) & Ref. 5			

20	Various inspection procedures under Accident Prevention Program.		Ref 1 a), Para 6 of Ref 1			
21	Whether Flight Safety Documentation System of the organization is given		Para 4 of Ref 1			
22	Whether the Aircraft operated by the company is fitted with CVR/DFDR, if yes-					
	a.	Make, model, and location of installation of CVR/DFDR.	Ref. 2			
	b.	Description of DFDR monitoring and analysis procedure of the service provider as part of its Safety Management System	Ref. 2			
	c.	Description of facility for down loading and monitoring of FDR data	Ref. 2			
	d.	Is the procedure for de-identification and protection of information documented	Ref. 2			
	e.	List of DFDR parameters and their exceedance limits.	Ref. 2			
	f.	Does the documented procedure mentions that FDM is an non-punitive programme	Ref. 2			
	g.	Has any personal nominated as custodian of FDM data who would ensure that the data is shared only in de-identified from.	Ref. 2			
	h.	Procedure for classification of exceedence in different categories depending on severity levels has been documented	Ref. 2			
	i.	Is the procedure for taking corrective actions based on FDM analysis has been documented.	Ref. 2			

	j.	Procedure for analysis of exceedences observed during the monitoring for the possible reasons(Para 5.2)	Ref. 2			
	k.	Procedure for communication of exceedence occurring during the training flight	Ref. 2			
	l.	Documentation for trending of exceedence data across the fleet, over period of time to detect any inherent weakness in the system	Ref. 2			

23.	a	CVR monitoring procedure & Set-up for monitoring.	Ref. 1 a)			
	b	Checklist for CVR monitoring is given.	Ref. 1 a)			
	c	Correlation of CVR/DFDR data.	Ref. 1 a)			
24.	Composition of Internal Safety Audit Team		Ref. 1 a)			
25.	Qualification/Experience requirements of Members of Internal Safety Audit Team		Ref. 1 a)			
26.	Format for Internal Safety Audit		Para 7 of ref 1			
27.	Whether the operator has planned to carry-out dangerous goods, if yes-					
	a.	Monitoring procedure by flight Safety organization.	Ref. 1 a)			
	b.	Checklist for monitoring.	Ref. 1 a)			
28.	Action to be taken by various departments of airlines under adverse weather operation.		Ref. 1 a)			
29.	Monitoring procedure for adverse weather operation by Flight Safety Department.		Ref. 1 a)			
30.	Ramp Safety procedures, terminology and Ground incident investigation procedures.		Ref. 1 a)			
31.	ERP in case of Accident/Incident and Disabled Aircraft Removal Procedures.		Ref. 1 a)			
32.	Contents of the manual are same and in same order as given in table of contents		Ref. 1 a)			
33.	Separation/ Identifications of Chapters for easy reference		Para 3.3.1 (n) Ch. 2 of Ref.7			
34.	Any typo-graphical errors, if any					
35.	Any other observation as required by amendments/ revisions in the Applicable Regulations/CAR/Circulars/Notices etc.					

ANNEX-E

FLIGHT SAFETY DOCUMENTATION SYSTEM INSPECTION CHECK SHEET (DGCA/AS/CL/01-04)

Organization:	Location:
DGCA Team:	Names of Post Holders present during Surveillance / Audit:
Date of Inspection:	Reference : (1)CAR Section 5 Series F Part 1 Appendix „B" (2)Air Safety Circular No. 2 of 2013

Sl. No.	Item of Check	CAR Reference Para	Page of the Manual	Status	Remark
1	**Creating a Document System**				
1.1	Has the AOC holder documented the procedure for preparing Flight Safety Documentation System and its monitoring .	Para 4 of Ref 1			
1.2	(a) List of documents identified for Flight Safety Documentation Purposes (b) Match information to an actual document in the system	Para 2 of Ref 2			

1.3	Does each manual or Document issued by the operator have. (a) Similar structure (b) Consistent location of specific types of information (c) Common terminology (d) Information that is relevant (e) Standardization across the fleet (f) Standard meaning for graphics and symbols and use them consistently across documents (g) Consistent use of units of measurement and consistent use of codes	Para 4(a) of Ref 2			
1.4	Have flight safety documents system validated before deployment, under realistic conditions. Validation should involve the critical aspects of the information use, in order to verify its effectiveness. Interactions among all groups that can occur during operations should also be included in the validation process	Para 2(e) of Ref 1			

1.5	Has the flight safety documents system organized according to criteria (a) which ensure easy access to information required for flight and ground operations (b) which facilitate management of the	Para 2(a) of Ref 1			

	distribution and revision of operational documents				
2.0	**Design of Documents**				
2.1	Integration with Regulations & Manufacturers, Vendors, Human Factor principle	Para 1 (c) of Ref 1			
2.3	Has the organization used grouping criteria such as importance and users are critical determinants for Organizing document system.	Para 2 (b) of Ref 1			
	Has information contained in each of the Operator's document been categorized depending on- a. Time Critical information b. Time sensitive information c. Frequently used information d. Reference information List the documents categorized as above.	Para 2(b) of Ref 1			
2.4	Sequencing the time critical information early.	Para 2 (c) of Ref 1			
2.5	Development of supplemental cards, guides and checklists for frequently used information	Para 2 (d) of Ref 1			

2.6	Define significant terms used in operating documents, ensuring consistent meaning across documents. All acronyms or abbreviations should be defined and included within a document's glossary.	Para 2 (g) of Ref 1			
2.7	Display information consistently using standards and conventions familiar to the users. This includes a consistent location of specific types of information, using consistent units of measurement and code	Para 2 (h) of Ref 1			
2.8	Display information consistently using formatting standards, consistent codes and graphic symbols.	Para 2 (h) of Ref 1			
2.9	Display information consistently using standards and conventions	Para 2 (h) of Ref 1			
2.10	Establish standard meanings for graphic symbols	Para 2 (h) of Ref 1			
3.0	**Introduction of New Procedures and Information**				
3.1	System developed for information gathering, review and disposition system to process information obtained from the government, manufacturers and equipment vendors and other sources.	Para 4.1 of Ref 1			

3.2	System of processing information resulting from following changes within the operator: a. Installation of new equipment b. Operating experience c. Policies and procedures d. Operators certificate e. Maintaining cross fleet standardization	Para 4.2 of Ref 1			
3.3	Developed methods of communicating that cover the implementation of new information (e.g., checklist revisions, Service Bulletin revisions) to include Training, checking, and any others within the organization that might be affected.	Para 4.4 of Ref 1			
3.4	Establish a formalized feedback loop from flight crews to flight management for obtaining input to cover procedures specific to operation	Para 3 of Ref 1			
4.0	**Reviewing Process**				
4.1	Has the operator nominated a Nodal Officer for compliance of flight safety documentation system.	Para 5 of Ref 2			
4.1	Does he review the document on a yearly basis	Para 4.3 of Ref 1			
4.2	Reviews after major events (mergers, acquisitions, rapid growth, downsizing etc)	Para 4.3 of Ref 1			
4.3	Reviews after technology changes	Para 4.3 of Ref 1			
4.4	Reviews after changes in safety regulations	Para 4.3 of Ref 1			
4.5	Maintain accurate, detailed records of communication for reviewing and validation process considering its effect on entire flight safety documentation system	Para 4.5 of Ref 1			
5.0	**Revision, Distribution and Tracking**				
5.1	Availability of tracking system for all previous updates which may include	Para 4(c) of Ref 2			

	list of effective pages, record of revisions and history of revisions.				
5.2	The tracking system should include a procedure to verify that operational personnel have the most recent updates	Para 4(c) of Ref 2			
5.3	Identification of the other manuals or documents that would be affected by the proposed changes	Para 4(c) of Ref 2			
5.4	Coordination for requisite changes to such manuals with the concerned departments before effecting the consequential amendments.	Para 4(c) of Ref 2			
5.5	Each operator should maintain a Master Manual Register.	Para 4(d) of Ref 2			
5.6	In case of electronic documentation system, there should be specific procedural as well as hardware and software safeguard in place to ensure the integrity of the documents and users compliance with the process	Para 6 of Ref 2			

Any other observation/remarks:

PLACE: **SIGNATURE OF Officer:**
DATE: **NAME and Designation :**

CHAPTER-9

APPROVAL OF ORGANISATION AND THE PERSONNEL

9.1 FLIGHT SAFETY ORGANISATION

CAR Section 5, Series F, Part-1 requires that the operators engaged in scheduled air transport Services / Cargo Services/ non-scheduled air transport services shall have dedicated flight safety department having adequate number of competent personnel for implementation of the flight safety awareness and accident/incident prevention programme appropriate to the size and scope of operations, that addresses the broad range of risk involved in commercial aviation to include, but not limited to, flight, maintenance and ground safety. **The flight safety department shall obtain approval of DGCA. A person of Indian nationality either a flight crew member or aviation engineer shall be appointed as the 'Chief of flight safety' after approval of the DGCA.** In addition organization shall nominate Deputy Chief of Flight Safety for approval of DGCA. It shall be ensured that if Chief of Flight Safety is a pilot, the Deputy Chief shall be an engineer and vice-versa. The personnel other than Chief of Flight Safety shall be competent and appropriately qualified in civil aviation activities such as operations, maintenance etc. to handle the assigned duties. The Chief of Flight Safety shall report directly to the top management to ensure effectiveness of the flight safety organization and to accord high priority to safety. The flight safety department shall prepare monitoring checklist to enable the safety officers to carry out the checks thoroughly. Flight Safety organization shall maintain a record of the checks carried out by them and of any deficiencies observed. They shall take prompt action to have the deficiencies attended to. Periodic returns for compliance of this CAR shall be sent by the operator to the concerned Regional Air Safety Office with a copy to the Director of Air Safety, DGCA Headquarters.

9.2 PROCEDURE FOR THE APPROVAL OF CHIEF OF FLIGHT SAFETY/ DY. CHIEF OF FLIGHT SAFETY

An organisation shall submit the application for the approval of chief of flight safety/ deputy chief of flight safety in respect of a person who meets the qualification and training requirements as prescribed in CAR Section 5 series F Part-I to DAS (HQ). The application shall be submitted in the prescribed format given as ANNEX - A along with necessary supporting documents with a copy to the concerned regional office of the Air Safety Directorate. Approval of chief of flight safety will be done after evaluation by the board. The evaluation may include personal interview with the recommended personnel.

9.2.1 COMPOSITION OF THE BOARD

The board shall consist of -

i) Chairman - Jt. DG/DDG

ii) Members - DAS (HQ)

iii) Members - DAS /DDAS (HQ)

On satisfactory evaluation by the board, the Organisation shall be conveyed the approval as per ANNEX - B

9.3 PROCEDURE FOR THE APPROVAL OF FLIGHT SAFETY DEPARTMENT

9.3.1 An application for approval of Flight Safety Department shall be made by approved chief of Flight Safety to DAS (HQ) stating the Flight Safety setup along with the approved Flight Safety Manual.

On receipt of request Director Air Safety (HQ) will constitute a team of Officers from DGCA HQ and concerned Regional Office. The team shall inspect the Flight Safety Department for the compliance of relevant rules and regulations. On the basis of assessment, approval of the organization will be accorded by Jt. DG/DDG.

9.3.2 For CVR & DFDR readout facility a certificate will be submitted by Manager Quality regarding set-up & Chief of Flight Safety regarding the accuracy of the readouts.

Annexure – 'A'

DIRECTOR GENERAL OF CIVIL AVIATION, INDIA CAR Sec5, Series F, Part I Approval	**PART A** **Application for**: **Approval of Chief of Flight Safety** **Approval of Flight Safety Organisation**

1. Organization details

1.1. Registered name of the Organization :

1.2. Trading name (if different) :

1.3. Address requiring approval :

1.4. Tel :_____ Fax _____
E-Mail _____

1.5 Description of the Organisation in terms of

1.5.1 Scope and extent of Operation :
1.5.2 Type of aircrafts :
1.5.3 Fleet Size :
1.5.4 Main bases :

1.5.5 Layover stations :

1.5.6 Organisation with fleet size up to three aircrafts, Whether any aircraft in the fleet with

AUW ≥ 5700 kg or equipped with CVR/DFDR

2.

2.1 Name of the (proposed) Chief of Flight Safety :
2.2 Nationality :
2.3 Qualification & Experience :
(Ref.Para 2.2.1 Appendix „C")

2.4 Details of Trainings Obtained :
(Ref. Para 2.2.2 Appendix „C)

2.5 If Ex-defense personnel, whether meeting the requirement of Para 2.2.2(IV), Appendix 'C'

3 Flight Safety Organisation

3.1 Name of Proposed Dy. CFS

Nationality :
Qualification & Experience :
(Ref.Para 2.2.1 Appendix 'C')

Details of Trainings Obtained :
(Ref. Para 2.2.2 Appendix 'C')

3.2 Flight Safety Setup :
(Ref. Para 3 Appendix 'C')

Name of Personnel;
Qualification :
Training Details :
Experience :
Job Assigned :

3.3 CVR and DFRDR Readout Facilities
Arrangement for CVR Read out:

Arrangement for DFDR readout and exceedence Monitoring:

3.4 Status of Flight Safety Manual :

Date: (Signatures)

Place: Name and Designation of the Proposer

Note:

a. *The application should be submitted under the Signatures of CMD/CEO of the Organisation*.

b. *Type, Sr. No. of License issued by the Civil Aviation Authority and Type of Aircraft endorsed is to be mentioned, wherever applicable*

c. *Documentary evidence is to be submitted in support of the information furnished*.

d. For CVR & DFDR readout facility a certificate should be submitted by Manager Quality regarding set-up & proposed Chief of Flight Safety regarding the accuracy of the readouts.

Annexure – 'B'

भारत सरकार
नागर विमानन विभाग
महानिदेशक नागर विमानन का कार्यालय
सफदरजंग एयरपोर्ट के सामने
नई दिल्ली - ११० ००३

GOVERNMENT OF INDIA

CIVIL AVIATION DEPARTMENT
Office of the DIRECTOR GENERAL OF CIVIL AVIATION
OPP. SAFDARJUNG AIRPORT, NEW DELHI – 110 003
TELEPHONE: 091-011-24629539
FAX: 091-011-24616715
TELEX: 31-74127

संख्या :
दिनांक :

Reference: No.:

TELEGRAMS: AIRCIVIL Dated:

To,

The Chief Executive Officer,
M/s ……

Subject: Approval of Chief of Flight Safety of M/s….. Airlines

Dear Sir,

This is to convey the approval of **Mr. …..** as the Chief of Flight Safety of M/s ….. Airlines in terms of the requirements contained in CAR, Section-5, Series F Part-I and based on the proposal submitted by your office.

The approval shall remain valid till he continues to remain in the employment of M/s…..Airlines and continued satisfactory performance of the flight safety Organisation of M/s …..Airlines as per the requirements of the above quoted Civil Aviation Requirements.

The approval shall remain in force till revoked by this office.

Yours Sincerely

Director Air Safety
For Director General of Civil aviation

GOVERNMENT OF INDIA

CIVIL AVIATION DEPARTMENT

Office of the DIRECTOR GENERAL OF CIVIL AVIATION

OPP. SAFDARJUNG AIRPORT, NEW DELHI – 110 003

TELEPHONE: 091-011-24629539

FAX: 091-011-24616715

TELEX: 31-74127

भारत सरकार
नागर विमानन विभाग
महानिदेशक नागर विमानन का कार्यालय
सफदरजंग एयरपोर्ट के सामने
नई दिल्ली - ११० ००३

संख्या :

Reference: No.: दिनांक :

TELEGRAMS: AIRCIVIL Dated:

To,

The Chief of Flight safety,
M/s …… Airlines

Subject: Approval of Flight Safety Manual of M/s ….. Airlines

Dear Sir,

This has reference to revised Flight Safety Manual "Issue-" of M/s ….. Airlines submitted to this office for approval.

Flight Safety Manual has been scrutinized and was found in order. You are advised to keep manual updated and incorporate all the latest amendments w.r.t. Rules, CAR, Circulars etc. issued from time to time in the future under intimation to this office.

Yours Sincerely

Director Air Safety/Dy. Director Air Safety

CHAPTER-10

SSP/ SMS DIVISION OF DGCA

10.1 INTRODUCTION

In order to manage the state safety programme and ensure implementation of requirements of Safety Management System by stakeholders, SSP/ SMS Division has been established in DGCA.

The division is under the overall Chairmanship of the Director General and is being headed by Joint Director General. The SSP/ SMS division is attached to Air Safety Directorate.

SSP/ SMS division can draw additional personnel, as and when required, from various Directorates of DGCA including the regional offices that are required for the implementation of SSP/ SMS.

The functions and responsibilities of SSP/ SMS division are as follows:

1. To assist the Steering Committee in preparation and implementation of SSP.

2. Coordination, monitoring and review of implementation of SSP.

3. Coordination, monitoring and review of implementation of SMS.

4. Any other work related to SSP/ SMS as assigned by the Director General and the Steering Committee.

SSP-India document containing the safety policy, safety responsibilities & accountabilities and implementation plan has been issued in November 2010. CAR Section 1, Series- C, Part-I has been issued for providing guidance to the operators for establishment of their Safety Management System.

The Division is being assisted by experts of European Union, ICAO Technical Cooperation Bureau, and COSCAP-SA.

10.2 ROLE OF AIR SAFETY DIRECTORATE

Air Safety Director will coordinate the functioning of SSP-SMS division. DAS in consultation with DDG and JDG will set agenda and call the meetings of the division to review the functioning and discuss further course of action. DAS (HQ) would undertake periodic review of the SSP-India document as per the requirement and put it up for the approval of DG and MoCA through DDG and JDG. The other functions of Air Safety Directorate are:

- Carryout all the activities on behalf of the DGCA for the Implementation of SSP

- Coordinate for organizing Steering Committee meeting.
- Acceptance of SMS and SPI of the operators in coordination with other Directorates
- Oversight of the implementation of the SMS by the operators by a team from the Headquarter which may include members from the concerned Directorates.
- To issue SSP/SMS Division circulars
- To periodically review the CAR on the SMS and advise SSP/SMS division accordingly.

Appendix-A

HAND BOOK

OF

AIRCRAFT ACCIDENT/INCIDENT INVESTIGATION

DIRECTORATE GENERAL OF CIVIL AVIATION

SAFETY AT ACCIDENT SITE

A Must carry following

a. **Safety items**:

1. N93 Face Masks (Min-5)
2. Ordinary Face Mask
3. Latex gloves (10 pairs)
4. Surgical Gloves (10 pairs)
5. Shoes as per the terrain of the accident site
6. Safety clothing as per the season
7. Safety Goggles

b. Investigation Kit/**Equipment** for investigation as per the list in the procedure manual

B. **Render safe** all the pressure vessels including tires after recording the pressure where ever applicable.

C. **Brief all** the personnel working at accident site about safety equipments.

Name of Operator: **A/C Registration:**
Date of Accident: **Place of Accident:**
Coordinates:

Phase of Flight:

Time of Accident:
(Source)

S.No.	ITEM	OBSERVATION
1.	Ensure security of the wreckage. ("Big Boots" and "Light Fingers").	
2.	Locate and secure „Crash Recorder".	**CVR** SR NO Part No. Make Condition **DFDR** SR NO Part No. Make Condition
3.	Initial survey of accident site. - Direction of Flight - Extent of Spread of Wreckage - Impact Marks - Grazing Marks - Smear of the Paint	

4	INITIAL SURVEY OF WRECKAGE (Start from Intact Portion of Aircraft) Any part missing. (Control surface, flap, propeller ect.) - Fire - Damage - Structure - Failure - Component - Failure	
5	Provisional assessment of aircrafts arrival attitude, configuration and speed.	
6	Assess aircraft heading and altitude on impact, also approach angle if possible.	
7	Photograph	
a)	Accident site	
b)	Significant obstructions	
c)	Impact marks	
d)	The wreckage (general)	
e)	The wreckage:	
i)	Pertinent control surfaces and trim tabs	
ii)	Significant damage or damage areas	
iii)	Propellers – shapes and marking, abrasion etc	
iv)	Engines (From all four sides and any other significant damage	
v)	Fire damage	
f)	The Cockpit:	
i)	Instruments	

ii)	Radio	
iii)	Controls	
iv)	Levers, switches, warning lights etc	
v)	Significant factors (if any	
g)	Inside the aircraft – general pictures, seat disposition, seat belts etc	
h)	Items, areas etc. thought to have any specific influence on the accident	
8	**NOTES OF**:	
a)	**Cockpit** • Instruments readings and settings Cockpit controls • Levers Position • Switch settings • CB position • Filament Type Electric Bulbs	
b)	Identification of relevant instruments	
c)	Radio frequencies selected etc.	
d)	Navigation aid frequencies selected etc.	
e)	Trim tab control settings.	
f)	Significant damage in or to cockpit area	
g)	Documents located in cockpit area, and on site; secure documents	
h)	Any other significant items	
i)	Damage to control runs	
j)	Relationship between control settings and trim tab positions	
k)	Fuel cock, cross-feed, booster pump and priming pump setting or position	

9	Check for complete aircraft	
10	Decide on fire sequence (Air-ground both)	
11	Check for signs of devices having been operated or used before impact	
12	Make sketch and measurements for wreckage plot. (attach Wreckage Plot)	
13	**If engine failure suspected, check**	
a)	Fuel in carburetor, filter bowl, supply lines	
b)	Get fuel samples	
c)	Check propeller pitch setting or feathering state	
d)	Check condition of spark plugs	
e)	Oil filter for metal, sludge etc	
f)	External examination of engine for possible obvious defects. • Condition of Inlet and Exhaust • Continuity of controls • Position of controls Position of Thrust reversers, Their control and linkages • Condition of HT Harness, Electrical connectors etc • Continuity of oil line • MCB"s, Fuel filter, Oil filter • Any other damage or deformity	
14	Some eyewitnesses/crew/passengers stories. You can get their statements later – you may be able to use information supplied by these stories to guide you in your examination and assessment of the wreckage	
15	Weather-witness ideas in the first instance/overcasts etc.- changes-route weather information	
16	Police reports- their advice on witnesses and addresses.	
17	Search and rescue reports and statements from personnel	
18	ATC reports and statements- tapes and transcript, log books- ATC clearance and briefing.	

19	Documentation/fuel state/ loading/ and CG/APS form	
20	Pilots- Names Briefing/ability/experience/training/licenses/medical/history etc.	
21	Flight plan- ATC and navigational- maps in use- Met briefing-any deviation	
22	Operations manual/ Air operator's certificate	
23	C of A and Flight Manual – weight and CG of aircraft – restrictions applicable to maneuvers/speed limits	
24	Log books – crew/engines/aircraft/propellers etc	
25	Technical log and maintenance history	
26	**PATHOLOGICAL EXAMINATION REPORT – CREW/PILOT/PASSENGERS:**	
a)	Health	
b)	Drugs	
c)	Alcohol	
d)	Heart Failure	
e)	Other physical defects or deficiency	
f)	Physical damage resulting from accident	
g)	C.O	
h)	Lack of Oxygen	
i)	Hunger	
j)	Fatigue etc	
k)	Effects of toxic chemicals used for crop spraying etc	

WRECKAGE DIAGRAM

LIST OF ITEMS REMOVED FOR DETAILED INVESTIGATION

SNO	NAME OF ITEM	Details of Damage/Condition	SR NO	PART NO.

NOTES

DATE:

PLACE:

APPENDIX-B

Title: The Final Report begins with a title comprising: name of the operator; manufacturer, model, nationality and registration marks of the aircraft; place and date of the accident or incident.

FINAL INVESTIGATION REPORT OF SERIOUS INCIDENT/INCIDENT TO M/s (OPERATOR NAME), (TYPE) AIRCRAFT (Registration No. VT-??? OR ???) ON (DATE) AT (PLACE).

1	Aircraft	Type	
		Nationality	Indian/Foreign (state of operator)
		Registration	VT-???/
2	Owner and Operator		Name of the Owner & Operator
3	Pilot – in –Command		Type of Pilot License holder
	Extent of injuries		Nil/Minor/Serious/Fatal
4	Date & Time of Incident		Date; Time in UTC/IST.
5	Place of Incident		
6	Co-ordinates of Incident site		Latitude ?? ° ?? ' ?? " N Longitude ?? ° ?? ' ?? " E
7	Last point of Departure		
8	Intended place of landing		
9	No. of Passengers on board		
10	Type of Operation		Scheduled/Non-scheduled/Training etc.
11	Phase of Operation		Take-off roll/climb/cruise/landing/ Taxi
12	Type of Incident		

(All timings in the report are in UTC/IST)

SYNOPSIS:

Describe briefly all relevant information regarding: The DGCA has instituted investigation into the incident to investigate the cause of the incident by appointing Investigator-in-Charge vide order No. _____dated _____under Rule 13(1) of Aircraft (Investigation of Accidents and Incidents), Rules 2017 and concluding with a brief resume of the circumstances leading to the incident.

1. FACTUAL INFORMATION:

1.1 History of Flight: A brief narrative giving the following information:

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

In addition to para 1 with history of flight (ICAO Accident/Incident Data Reporting (ADREP)) be referred to insure the relevant data are captured.

1.2 Injuries to Persons :

Injuries	**Crew**	**Passengers**	**Others**
Fatal			
Serious			
Minor/None			

1.3 Damage to Aircraft: Brief statement of the damage sustained by aircraft in the incident (Minor damage, no damage).

1.4 Other Damages: Brief description of damage sustained by objects other than the aircraft. Example, i.e third party damage/ damage to building/ aerodrome structure/ crops.

1.5 Personnel Information:

Pertinent information concerning each of the flight crew members including: age, validity of licences, ratings, mandatory checks, flying experience (total and on type) and relevant information on duty time.

1.5.1 Pilot- in- Command/Co-pilot

AGE : ?? years, Male/Female

License : Type of Pilot License

Date of Issue :

Valid up to :

Category :

Date of Class I/II Med. Exam. :

Class I Medical Valid up to	:	
Date of issue FRTOL License	:	
IR rating and instructor rating	:	
FRTO License Valid up to	:	
Total flying experience {Experience on type}	:	____ hours ____ Min
Total flying experience during last 1 year	:	hours Mins
Total flying experience during last 6 Months	:	hours Mins
Total flying experience during last 30 days	:	hours Mins
Total flying experience during last 07 Days	:	hours Mins
Total flying experience during last 24 Hours	:	hours Mins
Duty time last 24 hrs	:	
Rest before the flight	:	

- Brief statement of qualifications and experience of other crew members.
- Pertinent information regarding other personnel, such as air traffic services, maintenance, etc., when relevant.

1.6 Aircraft Information:

- **AIRFRAME** :Type of aircraft/ year of manufacturing/ serial number/ state of manufacturing/C of A / C of R/
- **ENGINE**: Engine model/ Engine Thrust power/ Time since new/ Hours logged by the engine
- Type of landing gear
- Part component failed history if any.
- Brief description about the airframe (construction & material used) and engine.
- Brief statement on airworthiness and maintenance of the aircraft (indication of deficiencies known prior to and during the flight to be included, if having any bearing on the accident/incident).
- Brief statement on performance, if relevant, and whether the mass and centre of gravity were within the prescribed limits during the phase of operation related to the accident/Incident. (If not and if of any bearing on the accident/Incident give details.)
- Type of fuel used.

1.7 Meteorological Information:

- Brief statement on the meteorological conditions appropriate to the circumstances including both forecast and actual conditions, and the availability of meteorological information to crew.
- Natural light conditions at the time of the accident/incident (sunlight, moonlight, twilight, etc.).
- Pilot Briefing as per the Forecast / Visibility/cloud base/precipitation for weather enroute/destination.

1.8 Aids to Navigation:

Pertinent information on navigation aids available, including landing aids such as ILS, MLS, NDB, PAR, VOR, visual ground aids, etc., and their effectiveness at the time. This also covered the information navigation equipment installed on the aircraft.

1.9 Communication:

Pertinent information on aeronautical mobile and fixed service communications and their effectiveness. Last communication of the aircraft with the ATC.

1.10 Aerodrome Information:

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

- Runway orientation
- Length of runway available (TORA/TODA/ASDA etc.)
- Navigational Aids available
- Communication facility available
- Status of MET services
- Status of Fire Services
- RTOW charts restrictions in case of critical airfields

1.11 Flight Recorders :

Location of the flight recorder installations in the aircraft, their condition on recovery and pertinent data available there from.

1.12 Wreckage & Impact Information :

General information on the site of the Incident and the distribution pattern of the wreckage; detected material failures or component malfunctions. Details concerning the location and state of the different pieces of the wreckage are not normally required unless it is necessary to indicate a break-up of the aircraft prior to impact. **Diagrams, charts and photographs** may be included in this section or attached in the Appendices.
Following information may also be incorporated if available:

- Distance from threshold
- Coordinates
- In case of runway excursion position of leaving the runway

- Type of terrain/type of surface/elevation of wreckage site above Mean sea level
- In case of water approximate depth of water
- Aircraft disintegration at the time of impact (approx speed at the time of impact/roll attitude/pitch attitude)
-

1.13 Medical & Pathological Information:

Brief description of the results of the investigation undertaken and pertinent data available therefrom.

Incapacitation if any and reasons for it.

Note – medical information related to flight crew licenses should be included in 1.5 – Personal Information.

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

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

- Method of locating the accident site
- How the wreckage was located
- Difficulty in finding the wreckage and time taken.
- the occurrence was survival
- Factors that hamper the evacuation process
- If slides were installed on aircraft and deployed their effectiveness
- No of persons who were evacuated from the site
- Consider the post flight impact/fire

1.16 Test and Research: Brief statements regarding the results of tests and research like examination of structural components, engine performance testing, material failure testing, fuel, oil testing etc. carried out within the country of at the manufacture facilities.

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

1.18 Additional Information: Relevant information not already included in 1.1 to 1.17.

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

2. ANALYSIS:

Analyse, as appropriate, only the information documented in
1. — Factual information and which is relevant to the determination of conclusions and causes. Few of the general aspects covered under analysis are as follows:

For examples/ few of the headings

These are not the only headings this can vary depending upon the type of incident

- **Serviceability of Aircraft/Helicopter:** Brief analysis regarding the engineering aspect of the aircraft/helicopter concluding weather the serviceability of the aircraft was a factor to the incident or not.
- **Weather:** Brief analysis of the prevailing weather conditions at the time of incident and concluding whether it is a contributing factor to the incident or not.
- **Pilot Handling of the Aircraft/Helicopter:** Brief analysis regarding operational aspect of the aircraft/helicopter, crew actions during the incident flight whether crew followed the standard operating procedures and concluding weather the serviceability of the aircraft was a factor to the incident or not.
- **Circumstances Leading to Accident/Incident:** Brief description about the factors including all the above points which led to the incident.

CONCLUSION: List the findings, causes and contributing factors established in the investigation. The list of causes should include both the immediate and the deeper systemic causes and are contributory factor to the incident.

3. SAFETY RECOMMENDATIONS

As appropriate, briefly state any recommendations made for the purpose of accident/incident prevention and identify safety actions already implemented.

APPENDICES

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

References

S.No.	Reference
1.	ICAO Annex 13
2.	ICAO Annex 19
3.	ICAO Doc 9962
4.	ICAO Doc 9859
5.	DGCA Enforcement Policy and Procedure Manual
6.	SSP/SMS Division Manual
7.	NTSB reference Documents on Human Factor